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At the Crossroads of Local and Global Disruptions:
Transforming Organisations for Africa's Future



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Alice, South Africa

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At the Crossroads of Local and Global Disruptions: Transforming Organisations for Africa's Future

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FOREWORD

This year's conference was held from the 19th to the 23rd of May 2026 at the University of Manouba, Tunisia and presented under the theme, "*At the Crossroads of Local and Global Disruptions: Transforming Organizations for Africa's Future*." The concept of crossroads implies both vulnerability and choice, pressure and possibility. It is a space where paths and possibilities meet and converge. The choice of Tunisia was deliberate and intentional. Tunisia embodies the concept of crossroads – geographically, historically, and conceptually. In Tunisia, Africa meets the Mediterranean, and it is the intersection where the ancient meets the modern.

It is with great pleasure that we present this volume of proceedings from the 26th Annual AABD Conference. The contributions in these proceedings rise to the challenge and complexities of "crossroads" and "transformations" in Africa's future. The manuscripts contained in this volume do not shy away from the complexities of our moment. These manuscripts interrogate this reality with rigour, creativity, and a deep commitment to Africa's agency. Within the pages of this proceedings, you will find scholars wrestling with the core questions of our time:

- How do we grapple with local and global challenges facing Africa?
- How do we build supply chains that are efficient, resilient, and relevant for Africa?
- How can digital tools foster inclusion rather than exacerbate inequality?
- Which financial structures can stimulate Africa's growth?
- Which governance models can turn local crises into laboratories for democratic and corporate renewal?
- How can Africa harness, rather than fear, its demographic dividend?

This volume reflects the diverse perspectives shared during the conference. Each paper presented in this proceedings was subjected to a rigorous review process including a desktop review by the editors that was followed by a double-blind peer review process.

We extend our deepest gratitude to this year's hosts, The LIGUE Laboratory and the University of Manouba for their warm reception and impeccable organisation of the 26th edition of the AABD Conference. We thank the authors for entrusting us with their important work. And we thank you, the reader, for engaging with these ideas. We invite you to read, reflect, and join us in the ongoing work of transforming African organisations to not only survive but to thrive at the crossroads.

Proceedings Editor,
Prof. Richard Shambare
May 2026

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Track 4 - Sustainability, Business Ethics, and Social Responsibility

Advertising Impact on the Adoption of Deposit Systems: A Case Study of a Tunisian Soft Drink Brand

Abstract

The reuse and recycling of household packaging has become a strategic priority in the energy transition of our economic models. Deposit systems for reuse appear as an ambitious solution for reducing the environmental impact of packaging.

In a context of growing awareness of environmental issues, but hampered by deeply ingrained consumption habits, this study examines, through a controlled experiment conducted with 275 Tunisian consumers, the impact of an eco-friendly advertisement promoting a soft drink brand's deposit-return scheme on the adoption of this system.

It is understood that a strong environmental awareness among consumers improves the perceived impact of the deposit system for glass bottles on their purchase intentions.

This study explores the impact of eco-friendly advertising on the attitudes of Tunisian consumers. We examine how advertising messages promoting environmental aspects (deposit systems) are perceived and interpreted, and to what extent these perceptions influence behavioral responses.

This work contributes to a better understanding of green consumption in Tunisia by providing actionable information for marketing practitioners, policymakers, and researchers.

The objective is to guide sustainable communication strategies in the Tunisian market, aligning commercial effectiveness with sustainable involvement.

Using a structural equation model, the results confirm the theoretical relationships derived from the Theory of Planned Behavior and highlight the central role of sustained involvement and trust as explanatory drivers of the adoption of the deposit-return scheme. This research contributes to the literature on innovative adoption in emerging contexts and offers operational recommendations for marketing decision-makers and institutional actors involved in the transition to a circular economy in Tunisia.

Keywords: Brand Trust, Circular Economy, Deposit for Reuse, Green Advertising, Sustainable Involvement, Theory of Planned Behavior.

Impact de la publicité sur l'adoption des systèmes de consigne : Étude de cas d'une marque de boisson gazeuse tunisienne

Résumé

Le réemploi et le recyclage des emballages ménagers sont devenus une priorité stratégique dans la transition énergétique de nos modèles économiques. Les systèmes de consigne apparaissent comme une solution ambitieuse pour réduire l'impact environnemental des emballages.

Dans un contexte de prise de conscience croissante des enjeux environnementaux, mais freinée par des habitudes de consommation profondément ancrées, cette étude examine, à travers une expérience contrôlée menée auprès de 275 consommateurs tunisiens, l'impact d'une publicité écoresponsable promouvant le système de consigne d'une marque de boisson gazeuse sur l'adoption de ce système.

Il ressort de cette étude qu'une forte sensibilisation environnementale des consommateurs améliore la perception de l'impact du système de consigne pour les bouteilles en verre sur leurs intentions d'achat.

Cette étude explore l'impact de la publicité écoresponsable sur les attitudes des consommateurs tunisiens. Nous examinons comment les messages publicitaires promouvant les aspects environnementaux (systèmes de consigne) sont perçus et interprétés, et dans quelle mesure ces perceptions influencent les comportements. Ce travail contribue à une meilleure compréhension de la consommation verte en Tunisie en fournissant des informations exploitables aux professionnels du marketing, aux décideurs politiques et aux chercheurs.

L'objectif est d'orienter les stratégies de communication durable sur le marché tunisien, en conciliant efficacité commerciale et engagement durable.

À l'aide d'un modèle d'équations structurelles, les résultats confirment les relations théoriques issues de la théorie du comportement planifié et soulignent le rôle central de l'engagement durable et de la confiance comme facteurs explicatifs de l'adoption du système de consigne. Cette recherche enrichit la littérature sur l'adoption de solutions innovantes dans les contextes émergents et propose des recommandations opérationnelles aux décideurs marketing et aux acteurs institutionnels impliqués dans la transition vers une économie circulaire en Tunisie.

Mots-clés : Confiance envers la Marque, Économie Circulaire, Consigne, Publicité Verte, Engagement Durable, Théorie du Comportement Planifié.

Dynamic Equilibrium in Social Spending: An Investigation into China's Government expenditure Impact on Maternal Health, Disease Control, and Schooling

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Abstract

This study investigates the association between China's public expenditure in the health and education sectors and the achievement of Sustainable Development Goals (SDGs) 3 and 4. Using data from 1995 to 2022, the research employs both Autoregressive Distributed Lag (ARDL) and Nonlinear ARDL (NARDL) models to distinguish between short- and long-run dynamics while capturing the speed of adjustment and the asymmetric effects of funding shocks. The results from the ARDL model reveal that government expenditure produces the most substantial and immediate effects on primary enrollment, which corrects 26% of its disequilibrium each period. In contrast, secondary schooling shows lagged effects with a 60% adjustment process, while tertiary enrollment remains driven by long-run structural investments. Regarding health, public spending significantly reduces maternal and neonatal mortality in the short term.

Crucially, the NARDL analysis uncovers significant asymmetries in how social outcomes respond to expenditure changes. Findings indicate that funding negative shocks often have a more rapid and detrimental impact than the benefits gained from funding increases, particularly regarding neonatal health and tuberculosis treatment success. While secondary education responds powerfully and immediately to positive funding shocks, tertiary education is highly sensitive to funding reductions, which exert a delayed but major negative impact. These findings provide practical guidance for policymakers, suggesting that while primary education and mortality reduction may respond quickly to funding, secondary and tertiary sectors—and long-term disease control—require stable, non-volatile financial commitments to prevent the disproportionate damage caused by fiscal retrenchment.

Keywords: Government expenditure, SDG4, SDG3, Short- and long-run effects.

1. Introduction

The Sustainable Development Goals (SDGs) are 17 goals agreed by the United Nations in 2015 to face the world's most important challenges, notably poverty, inequality, climate change, environmental degradation, peace, and justice. For instance, SDG-3 aims to achieve healthy lives and well-being for all at all ages, while

SDG-4 focuses on ensuring inclusive, equitable, and quality education, as well as a lifelong learning opportunity for all (United Nations, 2015). These goals are particularly critical in rapidly developing and emerging countries such as China. China plays a leading role in supporting these goals and has made remarkable progress, such as significantly increasing life expectancy and school enrollment rates, while drastically reducing maternal and infant mortality.. As of 2024, China has notably advanced SDG-3 (Good Health and Well-being) and SDG-4 (Quality Education). Life expectancy rose from 70.8 in 2000 to 79.0 in 2024. Maternal death rate reduced from 1500 deaths per 100,000 live births in 1949 to 14.3 in 2022, indicating remarkable improvement. Infant mortality rate of under-5 reducing from 317.1 deaths per 1,000 live births in 1950 to 4.0 in 2024 (China services info, 2025; National health commission of the people's republic of China, 2025). In schooling, China has reached almost universal coverage for primary and secondary school education. Pre-school gross enrolment rate achieved 99.32% in 2024, nine-year compulsory education completion rate reached 95.7%, and gross enrolment rate of senior secondary school approached 97%. Higher education enrollment has also expanded, with the gross enrollment rate standing over 74% (World bank data, 2025).

Recent studies investigated the determinants of health outcomes in China and beyond. Li et al. (2025) used ARDL, FMOLS, and DOLS and demonstrated that education, health expenditure, and GDP have a positive impact on China's life expectancy during the period 2000 to 2023. Zhang et al. (2025) used ARDL models to show that CO_2 emissions and inflation negatively influence life expectancy and that education, health spending, and GDP are positive determinants. Using Grossman's model, Akter (2025) suggested that child mortality is correlated positively with GDP growth and healthcare expenditure and negatively with industrialization and pollution. Access to electricity and urbanization also increase overall health indicators. In Somalia, Warsame (2025) reported that death is exacerbated by armed conflict, although the negative effects are mitigated by socioeconomic development.

This review demonstrates that there are limited studies investigating the impact of government spending on education. In addition, health outcomes research has focused

mostly on child mortality and life expectancy, leaving unexplored other very important indicators—e.g., tuberculosis treatment rate, maternal and neonatal mortality rates—, despite their relevance to SDG-3 targets. In addition, these studies have not adequately analyzed adjustment towards equilibrium based on the error correction model. Furthermore, they did not investigate the effects of funding positive and negative shocks. This paper aims to close these gaps by investigating the effect of government consumption expenditures on education and health outcomes in China based on unexplored indicators such as tuberculosis treatment success and maternal and neonatal mortality. Further, this research enriches previous findings by analyzing adjustment towards long-run equilibrium and the impact of positive and negative shocks.

The choice of China is justified by the fact that it is the foremost emerging economies, where expenditure on education and health care by governments has risen significantly while at the same time facing environmental limitations, regional disparities, and balancing short-term requirements with long-term sustainability. This makes China an appropriate comparator to other emerging and developing countries, providing substantial insights to advance SDGs-3 and 4.

This research is original because while recent studies have investigated the determinants of health outcomes, they have mostly focused on child mortality and life expectancy, leaving critical indicators like tuberculosis treatment rates and maternal and neonatal mortality unexplored. Furthermore, previous research has not adequately analyzed the adjustment towards equilibrium using error correction models, nor has it investigated the asymmetric effects of positive and negative funding shocks. This work addresses these gaps by evaluating how government consumption expenditures affect these unexplored education and health outcomes in China. Besides, this work is consistent with the UN 2030 Agenda for Sustainable Development. It also reiterates the bottom-up approach of the UN 2030 Vision, which engages all stakeholders, such as the academic community.

2. Research objectives

The primary objective of this research is to investigate the association between China's public expenditure in the health and education sectors and the achievement of SDGs 3 and 4. Specifically, the study aims to:

1. Distinguish between the short- and long-run effects of government expenditure on health and education.
2. Analyze the adjustment towards long-run equilibrium using an error-correction mechanism.
3. Investigate the asymmetric impacts of positive and negative funding shocks.
4. Examine the association of government expenditure with school enrollment, tuberculosis outcomes, and maternal/neonatal mortality.

3. Literature Review

Previous studies explored the connection between education and health goals in China. Zhang et al. (2020) used survey data from 10,000 adults interviewed between 2015 and 2018 and found that physical health correlated positively with education levels, though the benefit declined at more advanced levels. In contrast, mental health followed an inverted U-shaped curve with education, peaking at around 16 years of schooling. Similarly, Wang et al. (2020), employing 15,000 provincial household surveys from 2010 to 2019, determined that growing household income was positively associated with educational achievement and health status and emphasized the influence of socioeconomic status on the progress toward SDGs-3 and -4. Chen et al. (2021) used survey and interview data from 5,000 households and revealed significant inequalities in access to health, with far better health and education services accessible to city residents compared to rural residents, who faced higher time costs and reduced accessibility. Li et al. (2025) employed ARDL, FMOLS, and DOLS methods to show that, in China between 2000 and 2023, health spending, education, and GDP exerted positive long-run effects on life expectancy, whereas inflation, population growth, and mortality had negative impacts. Consistently, Zhang

et al. (2025) used ARDL models to demonstrate that inflation and CO_2 emissions reduced life expectancy, while education, health expenditure, and GDP enhanced it. Dong et al. (2025) used data from the 2018 China Migrants Dynamic Survey and performed multiple regression to show that rural older adult migrants had slightly higher utilization rates of public health services compared to their urban counterparts. The Blinder–Oaxaca decomposition suggested that mobility range, age, and household income were the primary contributors to urban–rural disparities in health and education. Using the same database, Jia et al. (2024) performed baseline regression analyses and showed that government digital transformation has a statistically significant correlation with 2.75% increased likelihood of migrants registering with family doctors, and health record increase of 7.53%.

Beyond China, Anjorin et al. (2024) illustrated, in a cross-national analysis of 58 Demographic and Health Surveys between 2011 and 2018, that slum residents had much lower exposure to essential health services than non-slum residents, and education, household wealth, and environmental conditions in the neighborhood were critically involved. Henao et al. (2023) used the 2020 Latinobarómetro data and logit regression with Lasso regularization algorithm, random forest, and decision tree models to show that perceived inequality and access to health services in Latin America in 2020 are composed of education, age, health insurance, income, and the used healthcare facility.

Recent papers have used Grossman's health demand function to investigate the complementarity between education, sustainable development, and health outcomes. Akter (2025) employed a health production function to compare high- and low-under-five mortality zones to show how GDP growth and increases in health spending reduced child mortality while industrialization and air pollution increased it. Simultaneously, electricity access and urbanization were found to improve health status. In addition, Warsame (2025) applied the model to analyze mortality in Somalia, using as determinants violent conflict, socioeconomic indicators of energy consumption, agricultural production, and GDP. Research confirmed that violent

conflict increases death rates significantly, but such effects are mitigated through social development and economic growth. Hui et al. (2022) used data from the China General Social Survey and found that the relationship between education and mental health changes is an inverted U-shape. Physical health improves with higher levels of school education though the benefits gradually weaken.

This review shows that few studies have examined the impact of government expenditure on SDG-4 using school enrollment as a measure. In addition, there was no research examining tuberculosis outcomes and maternal and neonatal mortality, when dealing with SDG-3. Therefore, we set hypotheses H1 and H2.

H1: Government expenditure on education is significantly associated with school enrollment.

H2: Government expenditure on education is significantly associated with tuberculosis outcomes and maternal and neonatal mortality.

3. Methodology

3.1 Sample and Data

China has been selected as it represents one of the most prominent emerging countries, having undergone rapid economic transformation alongside substantial government investment in the health and educational sector. At the same time, this country faces environmental constraints, regional disparities, and the need to balance immediate gains with long-term sustainability. This makes China a valuable comparator for other emerging and developing countries providing insights to advance SDG 3 and 4.

As health indicators, this paper considers maternal and neonatal mortality rate, tuberculosis new cases and treatment success rate. Concerning education, this study uses school enrollment at primary, secondary and tertiary levels. For government expenditure metrics, the data collected relates to spending on health and education as percentage of GDP. The source of these data is the World Bank database available from 1990 to 2024.

3.2 Variables

We test two hypotheses regarding the association between public expenditures and two specific social SDGs: SDG-4 (Education quality) and SDG-3 (Good Health and Well-being). Accordingly, the independent variables are public expenditure allocated to poverty and health, while the dependent variables are indicators measuring the advances in SDGs-4 and -3. We choose the most relevant and readily available metrics from the World Bank database to measure the progress of these goals. Table 1 outlines the measures of the dependent and independent variables.

Table 1: The measures of the dependent and independent variables

Goals	Dependent variable	Code	Independent variable	Code
SDG-4	Education expenditure growth as percentage of GDP	GEXP	School enrollment rates (percentage of 100000 population for primary and tertiary, and growth of percentage of 100000 population for secondary	Primary Secondary Tertiary
SDG-3	Health expenditure growth as percentage of GDP	HEALTHG	Maternal mortality growth	MATGR
			Neonatal mortality growth	NEOGR
			Tuberculosis new cases detection	TBCASE
			Tuberculosis treatment success rate	TBTREAT

3.3 Model

To assess the first two hypotheses, we observe the relationship between public expenses and SDG scores over the period 1990–2025. In this specification, the relationship between the dependent and independent variables may not be properly specified in the static linear regression. We use the autoregressive dynamic model (ARDL) to test non-static relationships in historical data. Initially, we perform the Augmented Dickey-Fuller test (ADF) to investigate the variables' stationarity. If the variables show stationarity at levels 0 and 1, we employ ARDL. We investigate the long- and short-run linear relationships between government expenditure and target scores using the following model:

$$\Delta(\text{indicator}_t) = \alpha_0 + \sum \alpha_i \, \Delta(\text{indicator}_{t-i}) + \sum \beta_j \, \Delta(\text{Expenditure}_{t-j}) + \gamma_1 \, \text{Expenditure}_{t-1} + \gamma_1 \text{indicator}_{t-1} + e_t$$

Where, Expenditure represents public spending, and Indicator is the metric measuring the related SDG outcome, α_0 is the intercept term, the coefficients α_i and β_j capture short-run dynamics through the lagged differences of the dependent and independent variables, γ_1 and γ_2 represent the long-run equilibrium relationship between government expenditure and the indicator, $\Delta = 1 - L$ is the difference operator, with L denoting the lag operator, and e_t is the error term.

Pesaran and Shin (2001) suggest the Bounds test to investigate cointegration among variables, indicating a stable, long-term relationship. The test employs upper and lower critical values, and a cointegrating relationship is confirmed if the F statistic exceeds the upper bound.

We also use the non linear ARDL to test the impact of negative and positive shocs.

4. Results and discussion

4.1 Descriptive statistics

The descriptive statistics are presented in Table 2.

Table 2: Descriptive statistics.

Statistic	Mean	Max.	Min.	Growth trend	Std. Dev.	N	Stationnarity
GOVEXPGR	0.026	0.345	-0.072	UP	0.087	32	1
HEALTHG	4.441	5.594	2.800	UP	0.778	32	1
MATGR	-0.010	0.006	-0.037	DOWN	0.011	32	1
NEOG	-0.009	-0.026	-0.001	DOWN	0.006	32	1
PRIMARY	103.891	115.91	97.154	UP	5.496	32	1
SECONDARY	0.025	0.071	0.002	UP	0.025	32	1
TERTIARY	33.549	71.982	4.674	UP	21.535	32	1
TBCASE	72.364	92.000	24.000	UP-DOWN	25.161	32	1
TBTREAT	93.455	95.000	90.000	UP	1.595	32	1

For education (SDG-4), China has a very high average primary school enrollment of 103.91% with a moderate level of variability (SD = 5.496), indicating nearly universal access but with some over-age or under-age enrollment. Second-level enrollment

growth is limited (average = 0.025, SD = 0.025), reflecting gradual amelioration that responds to policy enhancement with a delay, while tertiary enrollment is lower on average (mean = 33.549%) but more unstable (SD = 21.535), reflecting structure and long-term investments.

For health (SDG-3), both maternal mortality has a negative average growth rate (mean = -0.010, SD = 0.011) and neonatal mortality (mean = -0.009, SD = 0.006) have a negative mean rate indicating a continuous decline. Tuberculosis case detection has moderate coverage (mean = 72.364%, SD = 25.161) with high variability, reflecting the cumulative impact of ongoing expenditure, whereas Tuberculosis treatment success rate is significantly high (mean = 93.455%, SD = 1.595), consistent with strong treatment outcomes.

4.2 Results of the association of government expenditure with SDG-4

The results of ARDL are presented in Table 3 and the results of NARDL are presented in Table 4.

Table 3: Results of the association of government expenditure with SDG-4 (ARDL)

Variable	Primary	Secondary	Tertiary
COINTEQ(-1)	-0,261 (0,014)	-0,599 (0,000)	—
Lag of Enrollment (-1)	—	—	0,017 (0,413)
GEXP(-1)	—	—	0,189 (0,081)
C	—	—	0,354 (0,667)
D(GEXP)	0,335 (0,079)	0,003 (0,233)	-0,358 (0,200)
D(GEXP(-1))	0,472 (0,080)	0,007 (0,019)	-0,428 (0,135)
D(GEXP(-2))	0,047 (0,855)	—	—
D(GEXP(-3))	0,143 (0,494)	—	—
R^2	0,426	0,383	0,426
Adjusted R^2	0,291	0,341	0,197
F-statistic (Prob.)	3,157 (0,041)	9,003 (0,001)	1.85 (0,155)
Bounds Test (F > I(1))	2,2 < 6,76	5,43 < 6,76	25,890 > 6,76

The results indicate that the effect of government expenditure on education varies considerably between primary, secondary, and tertiary school levels of enrollment. In the case of primary education, the error correction term (COINTEQ−1 = −0.261, p=0.014) is negative and significant, indicating a correct adjustment process in the long run with 26% of disequilibrium corrected each period. Short-run government

spending adjustments also operate, with contemporary (0.335, p=0.079) and one-period lagged (0.472, p=0.080) changes showing positive, marginally significant effects, while deeper lags are not significant. This suggests that government spending has a substantial but lagged impact on raising primary school enrollment. In secondary schooling, the adjustment process is stronger (COINTEQ−1 = −0.599, p=0.000), with nearly 60% of disequilibrium eliminated per period. While current spending is minor, the one-period lag (0.007, p=0.019) indicates a statistically significant but limited effect, suggesting that secondary enrollment responds to policy inputs with delay. For tertiary education, deferred government spending (0.189, p=0.081) is positively related with enrollment, and short-run change is negative and insignificant, indicating that higher education is actually associated with long-run investment. Model diagnostics also support these interpretations: both primary and secondary models show reasonable explanatory power (Adjusted R^2 = 0.291 and 0.341, significant F-statistics), while the tertiary model explains less variance (Adjusted R^2 = 0.197, not significant F-statistic). Overall, the findings indicate that public spending has a positive effect on school attendance with the strongest and most direct effects at the primary level, lagged but significant effects at the secondary level, and structural long-run effects at the tertiary level. Therefore, hypothesis H1 is confirmed: government expenditure on education is significantly associated with school enrollment.

Table 4: Results of the Association of Government Expenditure with SDG-4 (NARDL)

Variable	Primary (Pos)	Primary (Neg)	Secondary (Pos)	Secondary (Neg)	Tertiary (Pos)	Tertiary (Neg)
COINTEQ(-1)			-1.526 0.000)		-0.027 (0.000)	
C (Constant)	28.287(0.053)	79.24(0.044)	—	0.036 (0.007)	—	-0.856 0.392)
D(Enrollment Lag (-1)	—	0.549(0.110)	0.450 (0.033)	—	—	0.211 (0.309)
D(Enrollment Lag (-2)	—	0.384(0.260)	0.414 (0.020)	—	—	0.008 (0.967)
D(Enrollment Lag (-3)	—	—	0.490 (0.002)	—	—	-0.326(0.111)
D(Short-run Shock	-2.786(0.141)	-1.025(0.825)	0.152 (0.003)	-0.045(0.286)	-2.751 (0.578)	0.231 (0.962)
D(Shock Lag (-1)	—	-4.677 (0.506)	0.212 (0.000)	-0.049(0.267)	-7.359 (0.174)	3.601 (0.465)
D(Shock Lag (-2)	—	-8.146 (0.224)	0.171 (0.001)	—	—	11.435 (0.019)

D(Shock Lag (-3)	—	-7.844 (0.235)	0.057 (0.205)	—	—	7.407 (0.146)
R^2	0.228	0.573	0.724	0.433	0.392	0.616
Adjusted R^2	0.155	0.194	0.627	0.343	0.347	0.424
F-statistic (Prob.)	3.117 (0.065)	1.511 (0.274)	7.500 (0.000)	4.788 (0.005)	8.707 (0.001)	3.211 (0.016)
Bounds Test (F)	3.872	1.872	10.27	5.86	17.97	5.91

The NARDL analysis for education demonstrates that enrollment levels react differently to increases versus decreases in funding, with varying levels of statistical significance.

Concerning primary Education, the lagged negative expenditure variable is also significant ($p = 0.045$), but the immediate short-run shocks (Lags 0 to -3) are not significant, suggesting the impact of cuts is felt over a longer horizon rather than immediately. Interestingly, the immediate positive shock coefficient is not statistically significant ($p = 0.141$), implying that simply increasing funds does not produce an immediate, guaranteed rise in primary enrollment.

Regarding secondary Education, the results of positive shocks show high statistical robustness. The COINTEQ(-1) is -1.526 and highly significant ($p < 0.001$), suggesting an extremely rapid correction of over 100% of disequilibrium. The short-run shocks are highly significant at the current level ($p = 0.003$), first lag ($p < 0.001$), and second lag ($p = 0.001$), showing a powerful and immediate enrollment response to funding increases.Furthermore,the lagged negative shock is significant ($p = 0.014$), the immediate short-run impacts of spending cuts are not statistically significant.

For tertiary education, the lagged negative shock coefficient (-10.43) is highly significant ($p = 0.008$), indicating that spending cuts have a delayed but major impact on higher education.The positive shocks present a very slow but significant adjustment speed of -0.027($p < 0.001$). The short-run positive shocks are not statistically significant, confirming that tertiary education relies on very long-term structural investment rather than short-term bursts of funding.

4.2 Results of the association of government expenditure with SDG3 (ARDL)

The results of ARDL are presented in Table 5 and the results of NARDL are presented in Table 6.

Table: 5 Results of the association of health expenditure with SDG-3

Variable	MATGR	NEOGR	TBCASE	TBTREAT
COINTEQ(-1)	-0,337 (0,203)	-0,606 (0,006)	-0,089 (0,078)	-0,415 (0,011)
HEALTHG	-0,005 (0,026)	-0,003 (0,012)	—	0,027 (0,971)
HEALTHG(-1)	—	—	-5,263 (0,099)	1,689 (0,032)
C	0,019 (0,055)	0,008 (0,070)	35,221 (0,018)	—
D(MATGR(-1))	-0,788 (0,004)	—	—	—
D(LNMATGR(-2))	-0,254 (0,220)	—	—	—
D(LNNEOGR(-1))	—	-0,335 (0,041)	—	—
D(TBCASE(-1))	—	—	0,188 (0,390)	—
D(TBCASE(-2))	—	—	0,027 (0,915)	—
D(TBCASE(-3))	—	—	-0,513 (0,059)	—
D(HEALTHG)	—	—	-15,713 (0,010)	0,027 (0,971)
D(HEALTHG(-1))	—	—	-0,554 (0,904)	1,689 (0,032)
D(HEALTHG(-2))	—	—	-12,615 (0,014)	—
R^2	0,666	0,525	0,686	0,375
Adjusted R^2	0,612	0,472	0,529	0,323
F-statistic (Prob.)	12,445 (0,000)	9,937 (0,000)	4,37(0,006)	7,212 (0,004)
Bounds Test (F vs 1%I(1))	3,231 < 5,58	3,470 < 6,76	5,92 < 5,58	2,294 < 5,58

The findings show that health expenditure has significant short-run effects on all four outcomes, reducing maternal (-0,005; p = 0,026) and neonatal (-0,003; p = 0,012) mortality, decreasing Tuberculosis case detection (-15,713; p = 0,010) and improving Tuberculosis treatment success (lagged 1,689; p = 0,032). In the long run, cointegration is clearly confirmed only for Tuberculosis case detection (F = 5,915 > 1% upper bound 5,58), indicating a persistent equilibrium relationship with health expenditure. Overall, health expenditure has powerful short-run impacts on all the outcomes, while long-run equilibrium relations exist primarily for Tuberculosis case detection, which demonstrates the cumulative and enduring effect of health spending on disease control. Therefore, hypothesis H2 is confirmed: government expenditure on education is significantly associated with tuberculosis outcomes and maternal and neonatal mortality.

Table 6: Results of the Association of government Expenditure with SDG-3 (NARDL)

Variable	Neonatal (Pos)	Neonatal (Neg)	Maternal (Pos)	Maternal (Neg)	TB Case (Pos)	TB Case (Neg)	TB Treat (Pos)	TB Treat (Neg)
COINTEQ(-1)	-0.792 (0.000)	-0.773 (0.000)						
HEALTHG	-0.003 (0.012)	-0.003 (0.012)	-0.005 (0.026)	-0.005 (0.026)	—	—	0.027 (0.971)	0.027 (0.971)
HEALTHG(-1)	—	—	—	—	-5.263 (0.099)	-5.263 (0.099)	1.689 (0.032)	1.689 (0.032)
C (Constant)			0.005 (0.229)	-0.000 (0.982)	44.089 (0.000)	25.214 (0.002)	53.360 (0.001)	98.081 (0.001)
Short-run Shock (D)	-0.002 (0.028)	0.004 (0.064)	-0.003 (0.037)	0.005 (0.093)	-26.507 (0.001)	-7.723 (0.535)	0.612 (0.588)	-3.408 (0.092)
Shock Lag (-1)	—	—	—	—	-12.330 (0.083)	45.051 (0.015)	3.279 (0.004)	2.596 (0.201)
Shock Lag (-2)	—	—	—	—	-25.165 (0.002)	—	—	3.000 (0.218)
Shock Lag (-3)	—	—	—	—	-9.619 (0.241)	—	—	—
R^2	0.392	0.366	0.657	0.605	0.773	0.629	0.529	0.679
Adjusted R^2	0.392	0.366	0.602	0.561	0.637	0.476	0.444	0.508
F-statistic	—	—	11.982	13.830	5.686	4.122	6.191	3.971
Bounds Test (F)	7.143	6.389	1.893	1.832	6.804	4.327	5.532	5.443

Regarding Neonatal Mortality Table 6 show that both positive and negative shock models show highly significant speeds of adjustment ($p < 0.001$). Increasing health expenditure has a significant immediate effect in reducing mortality (-0.002, $p = 0.028$) while decreasing expenditure is associated with an increase in mortality (0.004), which is marginally significant ($p = 0.064$), suggesting that funding cuts may jeopardize neonatal health more quickly than increases improve it.

Concerning Maternal Mortality, positive shocks show a significant immediate reduction in mortality (-0.003, $p = 0.037$). Negative shocks are associated with an increase in mortality (0.005) that is marginally significant ($p = 0.093$).

For Tuberculosis Case Detection, the lagged negative expenditure shock is highly significant ($p = 0.008$), and the first lag of the short-run shock is also significant ($p = 0.015$). Furthermore, the short-run effects are extremely powerful and significant at

the current level (p = 0.001) and second lag (p = 0.002), showing that immediate funding boosts are critical for identifying new cases.

Regarding Tuberculosis (TB) Treatment Succes, the lagged short-run shock (3.279, p = 0.004) is significant, indicating that increased funding leads to sustained improvements in treatment outcomes. Moreover, the model shows a significant adjustment speed (-1.067, p = 0.001). The lagged negative shock (-2.099, p = 0.003) is also highly significant, implying that reductions in funding have a rapid and detrimental impact on treatment success rates

5. Conclusion

This research provides a comprehensive evaluation of the impact of government expenditure on achieving SDG-3 (Good Health and Well-being) and SDG-4 (Quality Education) in China. By utilizing both ARDL and NARDL frameworks, the study successfully validates the significant role of public investment in driving social progress while highlighting the complex, non-linear nature of these relationships.

The ARDL results confirm Hypotheses H1 and H2, demonstrating that government spending is significantly associated with school enrollment and health outcomes. In the education sector, primary enrollment shows the most immediate response to funding, whereas secondary and tertiary levels require more sustained, long-term investment to achieve equilibrium. In the health sector, public spending proves highly effective in the short run for reducing maternal and neonatal mortality, while long-run stability is most evident in the cumulative success of tuberculosis case detection.

The integration of NARDL analysis offers a deeper layer of insight by revealing the asymmetric response of social indicators to fiscal shocks. A critical finding is that social progress is often "fragile" to funding cuts; for instance, neonatal mortality and tuberculosis treatment outcomes deteriorate more quickly following a decrease in spending than they improve following an equivalent increase. Furthermore, the study highlights that while secondary education enrollment can be rapidly boosted by

positive funding shocks, tertiary education remains vulnerable to long-term structural damage if funding is reduced.

In conclusion, this paper underscores that achieving the UN 2030 Vision requires more than just periodic "bursts" of funding. Policymakers in China and other emerging economies must prioritize fiscal stability, as the negative consequences of budget volatility often outweigh the short-term gains of temporary increases. Future strategies should focus on protecting core health budgets to maintain gains in mortality reduction and ensuring predictable, long-term financial frameworks for higher education to foster sustainable human capital development.

6. Main recommandations

Based on the empirical findings, this study provides practical guidance for policymakers in China, as well as crucial implications for African and other developing nations. Policymakers must prioritize fiscal stability over short-term funding bursts because social progress is often sensitive to funding cuts, and the negative consequences of budget volatility frequently outweigh the short-term gains of temporary funding increases. While primary school intake and early mortality decline can be quickly expanded by boosting government funding, it is critical that education reform simultaneously prioritizes organizing secure, structured financing arrangements for secondary and tertiary education. Similarly, African and other developing nations can learn from China's experience that early health investments rapidly enhance mortality decline but must be supplemented by strategic, long-term investments to ensure permanent disease control.

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Education for Sustainable Development and Africa 2063 Agenda, a Dream or Reality: the Tunisian Context as an example.

Introduction

The international discourse on sustainable development has increasingly confirmed the role of education as a life-changing parameter of societal change. Congruently, the United Nations' Sustainable Development Goal 4 (SDG 4), calling for inclusivity, equity, and quality education for all, is a significant dynamo around which development agendas are pivoting in ways that carry key paths for the African continent (UNESCO, 2016). Consistent with this, African Union's Agenda 2063, entitled The Africa We Want, presents an ambitious cross-continental perspective that puts forth education and human capital as pillars for economic transformation, democratic governance, and "pan-African identity" (African Union Commission, 2015). Accordingly, these frameworks position Education for Sustainable Development (ESD) as both a means and a pathfinder for learners for adapting and leading changes through the pedagogical practices (Wals, 2012).

However, as noted within African contexts, the discrepancy between policies and implementation is remarkably wide. UNESCO's Global Education Monitoring (GEM) programmes have consistently reported vulnerable curricula, dearth of teacher professional development, and inadequate assessment systems, which is inconsistent with effective ESD adoption across the continent (UNESCO-GEM, 2023). In North Africa, and in Tunisia specifically, these tensions are compounded by historical legacies of colonial educational models, ongoing socioeconomic inequalities, and the challenges of political transition following the 2011 Arab Spring (Ben Salem, 2019; Akkari, 2020).

Hence, emerged a new vision of a reconceptualisation of ESD which is basically decolonial, justice-oriented, anchored in indigenous African philosophies such as Ubuntu, and reinforced by twenty-first-century STEM and digital competencies (Lotz-Sisitka et al., 2015; Misiaszek, 2020; Swanson & Gamal, 2021). This new structure challenges the prevailing anatomy of ESD as a mere technical knowledge transmission to provide a transformative paradigm that promotes learner agency, participatory approach, and systemic change through micro (classroom), meso (institutional), and macro (policy) levels as fully discussed in Sterling (2010) and Rieckmann (2018). In the same vein, education specialists and scholars have called for active learning approaches, competency-

based, and Task-based frameworks that have been proved to be effective to develop learners' skills and cognitive abilities.

This article responds to this call attempting to explore the extent of alignment between SDG 4, ESD, and Agenda 2063 within the Tunisian education system. Referring to SDG 4.7.1 (the extent to which ESD is mainstreamed in national education policy, curricula, teacher training, and students assessment) as its primary empirical basis, the article analyses Tunisian official documents, curriculum frameworks, and teacher-training norms to identify the extent of ESD conformity. Thus, it enriches both to the meagre literature on ESD in Francophone North Africa and the continental project of developing the frameworks that aspire transformative education reform.

The structure of the article is as follows. Section 2 provides the conceptual framework, situating transformative ESD within the twin mandates of SDG 4 and Agenda 2063. Section 3 outlines the methodological approach. Section 4 presents findings on Tunisia's ESD integration at the policy, institutional, and classroom levels. Section 5 proposes a Tunisia-adapted set of indicators, and Section 6 offers recommendations and conclusions.

2. Conceptual Framework: Transformative ESD Between SDG 4 and Agenda 2063

2.1 Education for Sustainable Development: From Compliance to Transformation

Education for Sustainable Development has considerably grown since 1992 Rio Earth Summit and the 1992 Agenda 21 mandate for reshaping education to include sustainability as a key feature (United Nations, 1992). It started with encompassing environmental awareness to broaden the United Nations Decade of ESD (2005–2014) and the subsequent Global Action Programme (GAP) on ESD (2015–2019) to integrate cultural, social, and economic aspects of sustainability (UNESCO, 2014). The emergent ESD for 2030 framework expands this track by explicitly associating ESD to the entire 2030 Agenda for Sustainable Development, framing education as a bounding thread of the 17 SDGs (UNESCO, 2020).

The concept of ESD varies profoundly according to what Sterling (2010) identifies as *accommodative* and *transformative* approaches. In accommodative ESD sustainability, content is added to existing curricula without modifying the foundational epistemological bases. On the other hand, transformative ESD seeks to reshape the purposes, the processes, and the outcomes of education itself (Wals, 2012; Lotz-Sisitka et al., 2015). The latter highlights critical pedagogy foundations (Freire, 1970), systems thinking (Meadows, 2008), and "futures literacy" (UNESCO, 2019; Carleton & Miller, 2023) to enhance the learners agency in societal transformation as opposed to their former role of being passive recipients of knowledge.

In the same vein, Rieckmann (2018) identifies a number of key sustainability competencies that transformative ESD targets: systems thinking, critical thinking, strategic action, collaboration, anticipatory thinking –futures literacy-, self-awareness, and integrated problem-solving. These competencies, embedded in the SDG 4.7, represent an essential takeoff from the knowledge-transmission paradigm that many African education systems still operate with (Tikly, 2020). Although Rieckmann's framework does not provide a universal pedagogy system, it foregrounds

contextualization as a sine qua non feature for a decolonial educational system in African settings where colonial educational inheritances are still rooted. In these educational systems, there is a fundamental epistemic rupture, as Dei (2004) explains, colonial legacies have historically anchored passive and decontextualised pedagogical frameworks that completely overlook indigenous knowledge systems. Congruently, Ndlovu-Gatsheni (2013) reinforces this perspective, arguing that effective educational transformation across Africa requires a planned epistemic rebellion, reconsidering African ontologies and lived experiences, which is a sign of contextualisation. Furthermore, Lotz-Sisitka et al. (2015) demonstrate that grounding sustainability learning in learners' specific local problems such as ecological, cultural, and social realities, local water crises, land decay, and food issues strengthens conceptual understanding, reinforces agency, and fosters meaningful motivational investment.

In this regard, Msila's (2015) Ubuntu philosophy further boosts this contextualised approach, providing an indigenous African setting of communal interdependence that is both culturally sovereign and aligned with sustainability values. Ultimately, these perspectives intersect in a common ground: that transformative ESD in Africa must be concurrently critical, context-sensitive, and epistemically-decolonised in order to promote sustainable thinking and action.

Education for Sustainable Development (ESD), according to UNESCO (2017), focuses on equipping learners with the necessary skills, knowledge, values, and agency to foster a fair and more sustainable world. Congruently and considering socio-constructivism, this approach describes learners as reflective and socially active agents who can lead transformation and create meaning. Vygotsky's (1978) socioconstructivist theory identifies language as an instrument of thought and social interaction, which underpines a strong theoretical basis for ESD teaching since sustainability is essentially a discursive concept, framed and communicated through language within cultures, communities, and generations. In this regard, acquiring the ability to think sustainably is inherently linked to the ability to communicate, debate, and reflect sustainably (AlAfnan & Dishari, 2024). Halliday (1993) anticipated this connection by asserting that learning through language is the essential means to achieve conceptual and academic growth. The languaging framework proposed by Swain (2006) is particularly relevant in the context of ESD, as education for sustainability requires learners to transcend passive exposure to ecological or social information and to actively use, critically examine, and reconstruct this knowledge through interaction and collaboration, which strengthens their linguistic skills as well as their awareness of environmental issues. This dialogical dimension is further explained by Mercer's (2000) research on exploratory talk, which demonstrates that reasoned, interactive discourse among learners develops their higher-order thinking capacities such as systems thinking, futures thinking, and values assessment that Wiek, Withycombe, and Redman (2011) identify as the core competencies of sustainability literacy. Parallelly, Freire's (1970) pedagogy of critical consciousness foregrounds this, namely his conception of education. In fact, the underpinnings of this conception, labelled as the practice of freedom, analyse and transform oppressive or unsustainable realities through dialogue, which maps directly onto ESD's transformative ambitions.

In the same vein, a systematic review conducted in Kenya dealing with the social studies curriculum (Ganira, 2022), delves into the connection between the ESD foundations and socio-constructivism pedagogy. *Based* on constructivism theory and primary well as secondary resources, and UNESCO criteria of education for sustainable

development, the study examines the social studies curriculum in Kenya, to identify to what extent it caters for lifelong learning and sustainable development. The review advises that this curriculum should integrate efficient pedagogies anchored in socio-constructivism that call for the same foundations of ESD grounded in the learner's agency and active engagement as well as High order thinking skills, so that learners are empowered to grow as global citizens. Congruently, AlAfnan & Dishari (2024) explains that this transformation of education, brought about by ESD, is a kind of reorienting the paradigm towards a more interactive, leaner-centered and process-based model. In fact, ESD transformative aspect is depicted in the tools required to develop the necessary behaviors, skills, values and knowledge to shape the sustainable future.

Furthermore, Sterling (2001) distinguishes between transmissive, reformative, and transformative education, arguing that only the latter is characterised by learner agency, paradigm questioning, and systemic reflection. Hence, this model of education is able to cope with the complexity of sustainability challenges. The transformative character of ESD also is aligned with Norton's (2000) concept of identity and investment in language learning, as learners, who associate sustainability to their social identities, cultural contexts, and lived futures, are meant to engage critically and act meaningfully beyond the classroom. Cummins (2001) further enriches this vision by demonstrating that cognitively-engaged and context-related language tasks, especially those designed for project-based and culture-bound ESD approaches, enhance the language proficiency and critical thinking essential for embedding sustainability and civic engagement. Misiaszek (2018) extends the Freirean thought into ESD by creating the concept of eco-pedagogy, which considers the critical engagement with environmental discourse that unveils the socio-political dimensions of environmental crises and engage learners to challenge structures disrespectful of sustainability via language and collective actions. Thus, the scaffolded and dialogic learning settings framed by Wood, Bruner, and Ross (1976) have their application in ESD classrooms. In fact, sustainability issues, which are innately complex and value-bound, lead learners to co-construct understanding and negotiate meanings and sensible discussions through guided interaction rather than passively receive of pre-packaged information. Hence, this alignment between socio-constructivist linguistics and ESD theory represents a coherent pedagogical perspective that sustainable futures are built through the nurturing of learners who can think critically, express themselves freely, and act transformatively.

2.2 SDG 4 and the 4.7.1 Indicator

SDG 4 handles ten targets and a set of global indicators defined by the UNESCO Institute for Statistics (UIS). As Target 4.7 is the primary ESD basis, it calls that learners acquire knowledge and skills that develop sustainable development, gender equality, human rights, peace, non-violence, and global citizenship (United Nations, 2015). Congruently, Indicator 4.7.1 assesses the extent to which ESD and global citizenship education (GCED) are mainstreamed in four sections of education which are teacher education, curricula, national education policy, and student assessment (UIS, 2019).

The 4.7.1 indicator is measured using a structured questionnaire administered by national statistical offices and reported to UIS, yielding scores on a scale from 0 to 10 across the four sections. However, as Leicht, Heiss, and Byun (2018) observe, the indicator's design highlights formal policy mainstreaming at the expense of actual pedagogical depth, creating a discrepancy of *indicator capture*, where institutions demonstrate alignment through document revision without significant educational

transformation. In the same vein, Sayed and Ahmed (2015) explain that monitoring structures for African education must surpass input indicators to focus on process quality and learning outcomes.

In the Tunisian context, this tension is conspicuous. Although the country has been actively involved in international education monitoring frameworks, participating in UNESCO's reviews and consenting international agreements on education and sustainable development (République Tunisienne, 2017), the actual engagement is still superficial (UNESCO-GEM, 2023). As reported by the GEM Report (2023), North African countries, including Tunisia, abide by policy mainstreaming indicators while showing shaky performance on learner competency development and measures of pedagogical practices, a focus that this article aims to interrogate.

2.3 Agenda 2063 and the African Education Imaginary

The African Union's Agenda 2063 identifies a 50-year vision for the continent's development composed of seven aspirations. Aspiration 1 (A Prosperous Africa based on Inclusive Growth and Sustainable Development) and Aspiration 6 (An Africa whose Development is People-driven, relying on the Potential of African People, especially its Women and Youth) are most directly relevant to education (African Union Commission, 2015). The Continental Education Strategy for Africa (CESA 2016–2025) translates these aspirations into specific educational objectives, including the focus on African values, promotion of STEM education, adjustment of curricula to job market needs, and development of pan-African identity and citizenship (African Union, 2016).

As several scholars have reported tensions between Agenda 2063's pan-African vision and the Western-impacting educational structures in African policy implementation (Dei, 2011; Ndlovu-Gatsheni, 2013), the concept of Ubuntu, compiled as *I am because we are*, is considered to root the African cultures and educational systems and strike a balance to avoid the dominance of the western frameworks. Hence, ESD scholars tend to integrate it into sustainability education frameworks (Venter, 2004; Swanson & Gamal, 2021). In fact, Ubuntu highlights collective responsibility, relational ontology, and community-embedded learning in ways that confronts both technocratic sustainability approaches and individualistic Western pedagogies (Le Grange, 2011; Metz, 2011). Yet as Lotz-Sisitka et al. (2015) warn, this African philosophy in ESD must itself be critically reconsidered. Selecting Ubuntu as an educational alternative endangers romanticising pre-colonial knowledge framework and overlooking the complex nature of African identities and knowledge systems. A genuinely decolonial ESD, they explain, requires not just the integration of African content into curricula but the epistemic transformation of what counts as knowledge and how learning is processed and assessed (Mignolo, 2009; Ndlovu-Gatsheni, 2013). This is the standard against which Tunisian ESD will be assessed in the analysis that follows.

2.4 Tunisia in Continental and Global Context

Tunisia occupies a particular position in the African education landscape because of its distinctive features. In fact, it is a country with a lower-middle-income, a relatively high educational infrastructure such as its universal primary enrolment, its secondary participation, and its well-developed higher education sector. Hence, it is considered to be closer to the *classical* SDG 4 dimensions of access and participation than many sub-Saharan African peers (World Bank, 2022; UNESCO-GEM, 2023). Yet,

its post-2011 democratic transition, the fiscal pressures, its regional security challenges, and a legacy of centralized and French-model education governance have created a specific context for ESD reform that cannot simply be mapped onto either sub-Saharan African patterns or Mediterranean European models (Ben Salem, 2019; Akkari, 2020).

Tunisia's significance as a case study for the continent lies in this intermediate position. If a relatively well-resourced North African state with strong international engagement still struggles to achieve deep ESD integration, the implications for countries facing greater resource constraints are significant. At the same time, Tunisia's reform experience, particularly its efforts to develop competency-based curricula and revise teacher education standards in the post-2011 period, offers insights and key lessons for other African contexts undergoing educational reform (République Tunisienne, 2017; Ben Romdhane, 2018). For the interplays presented in this section between the ESD, Africa 2063, agenda and their mapping onto the Tunisian educational system, the following research objectives will be investigated.

Research Objectives

1. To map the policy and pedagogical alignment between Agenda 2063, SDG 4, and ESD in Tunisia.
2. To assess the integration of SDG 4.7.1 indicators within Tunisian educational structures and practices.
3. To identify implementation gaps in transformative and sustainability-oriented education across multiple educational levels.
4. To propose a contextualized ESD indicator framework and reform recommendations adapted to the Tunisian context.

Methodology

3.1 Research Design

This article uses a qualitative document analysis design, situated within a critical policy studies tradition (Ball, 1994; Ozga, 2000). Document analysis allows systematic examination of official texts as both reflections of policy intent and active constructions of educational reality (Bowen, 2009). In the context of SDG 4.7.1 monitoring, official documents such as curricula frameworks, teacher-training standards, and assessment guidelines, are the primary unit of measurement. The critical analysis of these documents directly engages the empirical terrain that international monitoring processes assess.

The multi-level analytical framework draws on Bronfenbrenner's (1979) ecological systems theory as adapted for education policy analysis by Tikly (2020), distinguishing micro (classroom/learner), meso (institutional/school), and macro (national policy/system) levels. This framework enables identification of alignment and misalignment across levels—for example, progressive policy language at the macro level that is not reflected in actual classroom practice or teacher education standards at the meso level.

3.2 Data Sources

Primary data sources include the Tunisian National Curriculum Framework (Référentiel national des programmes, République Tunisienne, 2017), the National Strategy for Educational Reform (Stratégie nationale de réforme de l'éducation), teacher education standards and initial teacher training frameworks from the Ministry of Education, national examination and assessment frameworks, and Tunisia's National Voluntary

Review (NVR) reports submitted to the UN High-Level Political Forum on Sustainable Development (2019, 2021). Secondary sources include UNESCO and African Union monitoring reports, academic literature, and comparative country studies.

Documents were selected based on three criteria: (1) official status as national policy or curriculum documents; (2) relevance to one or more of the four 4.7.1 measurement domains (policy, curriculum, teacher education, assessment); and (3) currency (documents published or substantively revised after 2011). A total of 14 primary documents and over 60 academic sources were analysed.

3.3 Analytical Approach

Analysis proceeded through three stages. First, deductive coding applied the 4.7.1 indicator domains as primary categories, mapping document content onto the four assessment dimensions. Second, inductive coding identified themes not captured by the deductive framework, particularly around Ubuntu philosophy, decolonial references, and justice-oriented language. Third, a critical discourse analysis (Fairclough, 2003) examined the underlying assumptions and power relations embedded in document language—what is foregrounded, what is silenced, and how educational transformation is discursively constructed.

The analysis was conducted against a comparative backdrop informed by Sayed and Ahmed's (2015) framework for assessing ESD quality in Southern and Eastern African contexts, and by Leicht et al.'s (2018) conceptual work on deepening the 4.7.1 indicator. This triangulation between empirical document analysis and theoretical frameworks strengthens the analytical rigour of what is, by design, a single-country case study.

4. Findings: ESD in the Tunisian Education System

4.1 Macro Level: Policy Mainstreaming

At the macro level, Tunisia presents a picture of substantial formal commitment to ESD and sustainable development principles. The country's National Voluntary Reviews (République Tunisienne, 2019, 2021) consistently affirm alignment with the 2030 Agenda and cite educational reform as a central pillar of sustainable development strategy. The 2017 National Curriculum Framework introduces competency-based approaches and references environmental, civic, and values education in ways that are broadly consonant with UNESCO's ESD framework (République Tunisienne, 2017).

However, several critical limitations are evident. First, sustainability-related educational objectives tend to appear in framework preambles and general orientation sections rather than in specific, operationalised learning outcomes or assessment criteria—a pattern Leicht et al. (2018) describe as *aspirational mainstreaming* without implementation depth. Second, the dominant discourse frames education's contribution to sustainable development primarily in economic terms—human capital formation, labour market alignment, and technological readiness—rather than in the socio-ecological, justice-oriented terms that characterise transformative ESD (Sterling, 2010; Tikly, 2020).

Third, and perhaps most significantly for the Agenda 2063 alignment, there is minimal explicit engagement with African continental frameworks in Tunisian policy documents. References to the African Union's CESA strategy, Ubuntu philosophy, or pan-African educational values are essentially absent from official curriculum

frameworks—a silence that reflects both Tunisia's historically complex relationship with its African identity and the enduring dominance of European (particularly French) educational models in Tunisian policy discourse (Akkari, 2020; Ndlovu-Gatsheni, 2013).

4.2 Meso Level: Institutional Governance and Teacher Education

At the meso level, analysis of teacher education frameworks and institutional governance structures reveals a significant implementation gap. Tunisia's initial teacher education, delivered primarily through the Instituts Supérieurs de Formation des Maîtres (ISFM), has undergone reform in recent years, with the introduction of competency-based training modules and increased emphasis on pedagogical practice (Ben Romdhane, 2018). However, these reforms have not systematically incorporated ESD competencies as defined by Rieckmann (2018) or the UNESCO ESD competency framework (UNESCO, 2017).

Specifically, the *anticipatory* and *normative/ethical* competencies—which require teachers to engage students in future thinking and value deliberation—are poorly represented in training programmes that continue to emphasise subject-matter mastery and classroom management (Tibbitts, 2017; Akkari, 2020). Critical pedagogy and participatory learning approaches, central to transformative ESD (Freire, 1970; Lotz-Sisitka et al., 2015), appear only marginally in official teacher education frameworks, and there is no systematic professional development pathway for in-service teachers on ESD.

Institutional governance also reveals structural obstacles to ESD integration. The centralised nature of Tunisian educational governance—in which curriculum content, examination standards, and teacher deployment are largely determined at national ministry level—limits the space for school-level experimentation, community engagement, or context-responsive pedagogy (Ben Salem, 2019). This contrasts with ESD's pedagogical requirements for participatory, locally grounded learning that connects classroom practice to real-world sustainability challenges (Wals, 2012; Sinakou et al., 2019).

4.3 Micro Level: Curriculum Content and Assessment

At the micro level, examination of subject curricula across primary and secondary stages reveals uneven and largely *additive* ESD integration. Environmental themes appear most visibly in science and geography curricula, reflecting the historical association between environmental education and natural science disciplines (Dillon & Reid, 2004). Civic education and values-based content appears in dedicated citizenship education syllabi, but these are typically structured around national civic identity and constitutional values rather than global sustainability or pan-African perspectives (République Tunisienne, 2017).

The analysis identifies several notable absences that are particularly significant from a transformative ESD perspective. First, climate change—despite being arguably the most urgent sustainability challenge facing North Africa, a region identified as a climate vulnerability hotspot (IPCC, 2022)—receives limited systematic attention across subject curricula and does not feature prominently in national examination frameworks. This represents a significant disconnect between scientific risk assessment and educational response.

Second, gender equality and intersectional justice dimensions of sustainability, central to both SDG 4.7 and Agenda 2063's Aspiration 6, are weakly represented in curriculum frameworks. While Tunisia has made constitutional commitments to gender equality in the post-2011 period and has relatively strong female participation in education (World Bank, 2022), curriculum content continues to reproduce gender-normative representations and does not systematically engage students with structural analyses of gender inequality (Msibi, 2012; Unterhalter, 2019).

Third, the national assessment system—anchored by high-stakes *baccalauréat* examinations—operates as a powerful limiting force on ESD pedagogical ambitions. As long as examinations reward recall and reproduction of disciplinary knowledge over the integrative, competency-based outcomes that transformative ESD requires, teachers face strong disincentives to adopt ESD-aligned pedagogies (Sayed & Ahmed, 2015; Leicht et al., 2018). This *assessment washback* effect is well documented across North African education systems and represents one of the most significant structural barriers to ESD transformation (Akkari, 2020; Tikly, 2020).

5. Towards a Tunisia-Adapted ESD Indicator Framework

5.1 Limitations of the Current 4.7.1 Framework

The foregoing analysis underscores the limitations of the existing SDG 4.7.1 indicator as a monitoring instrument for transformative ESD. Designed primarily to measure formal policy mainstreaming, the indicator captures whether ESD language appears in official documents, but not the depth, quality, or equity of actual educational practice (Leicht et al., 2018). In the Tunisian case—and by extension in many African contexts—this creates a *compliance-without-transformation* dynamic, where states can score well on international monitoring while educational systems remain fundamentally unchanged (Sayed & Ahmed, 2015; UNESCO-GEM, 2023).

Several scholars have proposed expanded monitoring frameworks that go beyond 4.7.1 to capture process quality and transformative outcomes. Leicht et al. (2018) propose disaggregating the indicator by level of education, subject area, and marginalised learner group. Tibbitts (2017) argues for competency-based assessment measures linked to the specific transformative learning outcomes ESD should develop. Wals (2012) emphasises the importance of process indicators that capture the participatory quality of learning—whether students are engaged as agents or as passive recipients of sustainability messages.

5.2 A Proposed Tunisia-Adapted Framework

Drawing on these scholarly proposals and the empirical findings presented above, this article proposes a three-dimensional indicator framework—comprising input, process, and outcome indicators—adapted to the Tunisian context and applicable as an illustrative model for other African countries at similar stages of ESD integration.

Input indicators assess the structural conditions for ESD integration: the presence of explicit ESD objectives in national curriculum frameworks; the proportion of initial and in-service teacher education programmes that include ESD competencies (as per Rieckmann, 2018); the extent to which assessment frameworks include evaluative criteria for sustainability competencies; and the degree to which school governance

structures enable participatory learning and community engagement (Lotz-Sisitka et al., 2015; Sinakou et al., 2019).

Process indicators capture the quality of ESD implementation in practice: the extent to which teachers employ participatory, problem-based, and locally contextualised pedagogies; the degree of interdisciplinary and cross-curricular ESD integration beyond traditional environmental or science subjects; the quality of student engagement with real-world sustainability challenges; and the extent to which African epistemic traditions, including Ubuntu philosophy, inform pedagogical approaches and knowledge selection (Swanson & Gamal, 2021; Le Grange, 2011).

Outcome indicators assess the depth of learning achieved: not merely knowledge acquisition but the development of sustainability competencies including systems thinking, anticipatory capacity, normative reasoning, and collaborative action (Rieckmann, 2018; Wiek et al., 2011). Critically, outcome indicators should also capture equity dimensions—whether ESD progress is distributed equitably across gender, socioeconomic status, geographic location, and disability, in alignment with the equity commitments of both SDG 4 and Agenda 2063 (Unterhalter, 2019; African Union Commission, 2015).

This three-dimensional framework is designed to complement rather than replace the existing 4.7.1 indicator. It provides a more granular diagnostic instrument capable of distinguishing surface-level policy mainstreaming from genuine transformative practice—a distinction that is both analytically important and politically consequential for countries seeking to demonstrate meaningful progress toward SDG 4 and Agenda 2063 goals.

6. Recommendations and Conclusions

6.1 Aligning Tunisian Reforms with Transformative ESD

Based on the foregoing analysis, this article advances the following recommendations for the alignment of Tunisian education reform with transformative ESD, SDG 4, and Agenda 2063.

First, curriculum revision processes must move beyond additive ESD integration toward the deep restructuring of knowledge organisation, learning objectives, and pedagogical approaches that transformative ESD requires (Sterling, 2010; Wals, 2012). This means not only inserting sustainability themes across subject areas but reconsidering the purposes of schooling itself—toward the development of learners as agents of just, sustainable futures rather than as instruments of economic production (Freire, 1970; Tikly, 2020). Climate change, in particular, demands urgent and comprehensive curriculum attention given Tunisia's specific vulnerability to Mediterranean climate disruption (IPCC, 2022).

Second, teacher education reform must be systematically reoriented toward ESD competency development. This requires moving beyond the current emphasis on subject mastery to equip teachers with the pedagogical skills, reflexive capacities, and epistemic flexibility that transformative ESD demands (Tibbitts, 2017; Akkari, 2020). A decolonial approach to teacher education would also engage teachers in critical reflection on the colonial inheritances embedded in Tunisian educational practice,

enabling them to draw more authentically on African and Maghrebi knowledge traditions in their pedagogy (Mignolo, 2009; Ndlovu-Gatsheni, 2013).

Third, assessment reform is essential. The washback effect of high-stakes examinations constitutes perhaps the single greatest structural obstacle to ESD transformation in Tunisia (Sayed & Ahmed, 2015). Reform of the baccalauréat and national examination systems to incorporate competency-based assessment, portfolio evidence, and evaluative criteria for sustainability competencies would create systemic alignment between assessment, curriculum, and ESD pedagogical goals (Leicht et al., 2018; Rieckmann, 2018).

Fourth, Agenda 2063 alignment requires explicit and substantive engagement with continental African frameworks and philosophies in Tunisian educational policy. This means formally acknowledging the CESA 2016–2025 strategy as a reference point for national education planning, incorporating pan-African citizenship and Ubuntu-informed values into civic education frameworks, and developing regional South-South learning partnerships with other African countries engaged in ESD reform (African Union, 2016; Swanson & Gamal, 2021).

6.2 Implications for African Education Systems

As an illustrative case, Tunisia's experience yields several lessons of broader continental relevance. It demonstrates that formal policy commitment and relatively strong educational infrastructure are insufficient conditions for transformative ESD integration—a finding that challenges the dominant assumption in international monitoring that resource investment and policy mainstreaming are the primary drivers of ESD progress. It also illustrates that monitoring frameworks themselves can become obstacles to transformation when they reward surface compliance over depth of practice.

More broadly, the Tunisian case supports the call by Lotz-Sisitka et al. (2015) and others for an explicitly transformative, justice-oriented ESD research and practice agenda for Africa—one that takes seriously the continent's colonial history, its diverse epistemic traditions, and its specific socio-ecological vulnerabilities. Agenda 2063 provides a potentially powerful mandate for such an agenda, but only if it is operationalised through education systems that genuinely reflect *The Africa We Want*: inclusive, just, and grounded in the philosophical and cultural richness of the continent's diverse peoples (African Union Commission, 2015; Le Grange, 2011).

6.3 Conclusion

This article has mapped the alignment and misalignment between SDG 4, ESD, and Agenda 2063 in the Tunisian education system, using SDG 4.7.1 as an empirical anchor and transformative ESD frameworks as a conceptual lens. The findings reveal progress on classical access and participation dimensions of SDG 4, but a persistent gap between policy ambition and transformative educational practice at curriculum, teacher education, and assessment levels. The proposed three-dimensional indicator framework, composed of input, process, and outcome, offers a more sensitive monitoring instrument for assessing the depth and speed of ESD integration, applicable not only to Tunisia but to other African countries navigating the complex terrain between international development commitments and locally grounded educational transformation.

Ultimately, achieving the transformative ESD that both SDG 4 and Agenda 2063 implicitly demand requires more than policy revision and indicator compliance. It requires a fundamental reorientation of educational purpose, that is, toward the development of learners who are competent, critical, and caring participants in the construction of a just and sustainable African future (Wals, 2012; Tikly, 2020). Tunisia's experience, with its particular blend of strengths and constraints, offers both a cautionary tale and a source of instructive lessons for that continental project.

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FINANCING GREEN CITIES IN EMERGING ECONOMIES: A SYSTEMATIC REVIEW OF INSTITUTIONAL AND FISCAL MECHANISMS

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Introduction

Urbanisation is accelerating rapidly, particularly in emerging economies where cities are expected to accommodate most global population growth over the coming decades. The United Nations projects that nearly 68% of the world's population will reside in urban areas by 2050, with Africa and Asia experiencing the fastest expansion (United Nations, 2019). While urbanisation can stimulate economic growth and innovation, it simultaneously intensifies environmental degradation, infrastructure deficits, housing pressures, and climate vulnerability. Cities account for a substantial share of global greenhouse gas emissions and energy consumption, making them central to both the problem and the solution of climate change (UN-Habitat, 2020).

Despite global commitments to climate mitigation and adaptation, a significant climate finance gap persists. The United Nations Environment Programme estimates that adaptation finance needs in developing countries far exceed current international public finance flows (UNEP, 2023). Similarly, the World Bank (2022) highlights that trillions of dollars are required annually to finance sustainable urban infrastructure, yet subnational governments often lack access to affordable long-term capital. This gap is particularly pronounced in emerging economies, where municipal governments are responsible for frontline service delivery but remain fiscally constrained.

Weak municipal financial systems further exacerbate the challenge. The Organisation for Economic Co-operation and Development notes that subnational governments in developing contexts frequently experience vertical fiscal imbalances, characterised by expenditure mandates that exceed revenue-raising authority (OECD, 2019). Limited own-source revenue, weak public financial management practices, inadequate creditworthiness, and governance deficits constrain cities' ability to mobilise sustainable finance (World Bank, 2022).

Although scholarly attention to green finance has increased, the literature remains fragmented. Existing studies often examine isolated instruments, such as green bonds, climate funds, or public–private partnerships, without integrating them into broader institutional and fiscal governance frameworks. Furthermore, much of the empirical evidence is drawn from developed economies, limiting contextual relevance for emerging markets. This fragmentation obscures how financial instruments interact with institutional capacity, fiscal decentralisation, and regulatory environments to enable or constrain green urban transitions.

This study addresses the identified gap by systematically reviewing institutional and fiscal mechanisms for financing green cities in emerging economies and advancing a more integrated financial governance perspective. In doing so, it contributes to the literature by synthesising fragmented financing instruments within a coherent institutional financial governance architecture specifically tailored to the structural realities and capacity constraints of emerging economies.

Literature Review and Theoretical Framework

Urban Sustainability and the Financing Imperative

Between 2010 and 2025, scholarship on sustainable urban development increasingly recognised cities as central actors in climate mitigation and adaptation. Rapid urbanisation, particularly across Africa, Asia, and Latin America, has intensified infrastructure deficits, environmental degradation, and fiscal pressures on subnational governments (UN-Habitat, 2020). The United Nations (2019) projects that nearly 68% of the global population will reside in urban areas by 2050, with the majority of this growth occurring in emerging economies. Unlike developed cities with mature fiscal systems, many municipalities in emerging contexts face simultaneous infrastructure backlogs and limited revenue capacity.

Academic discourse during this period shifted from identifying environmental problems to interrogating financing mechanisms that could support low-carbon urban transitions (Bulkeley et al., 2015; Bai et al., 2018). The literature increasingly frames urban sustainability not only as an environmental planning issue but as a public finance and governance challenge. The scale of required investment remains significant. The World Bank (2022) estimates that trillions of dollars are needed annually for sustainable infrastructure, while UNEP (2023) identifies a persistent adaptation finance gap that disproportionately affects developing countries. This financial shortfall underscores the importance of examining institutional and fiscal systems underpinning municipal sustainability initiatives.

Green Finance Instruments: Opportunities and Structural Limitations

The expansion of green finance literature between 2010 and 2025 reflects growing interest in capital mobilisation mechanisms. Green bonds emerged as a flagship instrument following their institutionalisation in global capital markets (OECD, 2017). Empirical studies highlight their transparency benefits, including earmarking of proceeds and environmental reporting standards (Flammer, 2021). However, critical scholarship cautions that green bond uptake is concentrated in developed economies with deep capital markets and strong regulatory frameworks (Banga, 2019).

Regional comparisons reveal stark disparities. In Europe and North America, municipal green bonds finance renewable energy and sustainable transport projects within established credit systems. In contrast, African and South Asian municipalities face structural barriers, including low creditworthiness, weak disclosure practices, and limited investor appetite (World Bank,

2022). These differences demonstrate that financial instruments alone do not determine outcomes, institutional context shapes effectiveness.

Public–Private Partnerships (PPPs) similarly illustrate regional divergence. While PPP frameworks in OECD countries operate within stable regulatory environments, evidence from emerging economies shows higher exposure to contingent liabilities and governance risks (Yescombe, 2018). Studies in Latin America and Sub-Saharan Africa reveal that poorly structured PPP contracts can increase fiscal vulnerability where oversight capacity is weak. Thus, capital mobilisation mechanisms are embedded within institutional governance structures that either mitigate or exacerbate fiscal risk.

Fiscal Decentralisation and Intergovernmental Transfers

Fiscal decentralisation literature emphasises the importance of aligning expenditure responsibilities with revenue authority. The OECD (2019) highlights persistent vertical fiscal imbalances in emerging economies, in which municipalities carry significant service-delivery mandates without corresponding revenue autonomy. Empirical studies show that performance-based intergovernmental transfers can incentivise environmental outcomes when accompanied by transparent accountability systems (Smoke, 2015).

Compared with other countries, decentralised systems in Scandinavian countries demonstrate higher fiscal autonomy and stronger integration of environmental performance. In contrast, many emerging economies exhibit a partial decentralisation characterised by political interference and unpredictable transfers (Rodden, 2016). These structural differences explain why climate-linked conditional grants may succeed in some contexts but remain symbolic in others.

The literature suggests that municipal own-source revenue, particularly property taxation, plays a crucial role in enhancing creditworthiness and sustainable investment capacity (Slack & Bird, 2015). However, property tax reform remains politically sensitive and administratively complex in many developing countries. Consequently, fiscal decentralisation reforms require institutional strengthening beyond legislative amendments.

Public Financial Management Reform and Green Budgeting

Public Financial Management (PFM) systems form the institutional backbone of sustainable finance. Strong budgeting, procurement, accounting, and auditing frameworks enhance fiscal discipline and investor confidence (OECD, 2019). Since 2015, green budgeting has gained prominence as a governance innovation integrating environmental objectives into fiscal policy processes. Studies in France and Ireland demonstrate the successful implementation of climate expenditure tagging within national budgets (OECD, 2021).

However, cross-regional comparison reveals uneven implementation. Developed countries benefit from digital budgeting systems and technical expertise, whereas emerging economies

often struggle with data limitations and fragmented reporting systems. The literature increasingly recognises that green budgeting is not merely a technical exercise but requires organisational culture change and political commitment.

Critically, research indicates that without strong audit institutions and consequence management systems, sustainability reporting risks becoming performative rather than transformative (Power, 2015). This observation reinforces the need for integrated governance frameworks rather than isolated fiscal tools.

Theoretical Framework: Institutional Theory

Institutional theory provides a robust analytical lens for examining divergences between policy adoption and implementation outcomes in green city financing. Scott (2014) conceptualises institutions as comprising three interrelated pillars: regulatory, normative, and cognitive. The regulatory pillar refers to formal rules, laws, and enforcement mechanisms governing municipal finance and public financial management systems. The normative pillar reflects values, standards, and expectations, including global climate commitments and environmental, social, and governance (ESG) frameworks. The cognitive pillar encompasses shared understandings, administrative capacity, technical expertise, and organisational competencies that shape how policies are interpreted and implemented in practice.

While these pillars are analytically coequal in institutional theory, their functional influence is context dependent. In emerging economies, the cognitive pillar frequently emerges as the binding constraint that determines whether regulatory frameworks and normative commitments translate into effective implementation. Limited administrative capacity, technical expertise, and institutional learning constrain municipalities' ability to operationalise complex financial instruments such as green bonds, climate budgeting, and public–private partnerships.

Between 2010 and 2025, the diffusion of green finance has been strongly influenced by institutional isomorphism. Coercive pressures from international agreements encourage policy alignment, while mimetic pressures drive the replication of financial instruments from developed economies. Normative pressures further reinforce adoption through global sustainability standards. However, institutional misalignment persists where cognitive capacity is insufficient to support implementation. In such contexts, regulatory compliance and normative alignment may result in the formal adoption of policy without substantive operationalisation.

This theoretical framing shifts the analytical focus from the presence of financial instruments to the underlying institutional conditions that enable their effectiveness. It emphasises that financial architecture alone is insufficient; rather, institutional coherence, particularly the alignment between regulatory structures, normative expectations, and cognitive capacity, determines whether green finance initiatives produce transformative or merely symbolic outcomes.

Fragmentation and Research Gap

Despite significant growth in green finance scholarship, fragmentation persists. Studies often treat instruments, green bonds, PPPs, and fiscal transfers in isolation, without integrating them into a unified governance model. Moreover, much of the empirical evidence derives from developed contexts, limiting its applicability to structurally constrained municipalities in emerging economies.

Few systematic reviews synthesise institutional and fiscal mechanisms in a single review. Additionally, limited attention has been paid to the quality appraisal of reviewed studies. This study addresses this methodological gap by employing PRISMA guidelines (Page et al., 2021) and applying inclusion criteria to ensure relevance and methodological robustness. Although no formal meta-analysis was conducted, quality screening considered clarity of research design, contextual relevance, and empirical grounding. By integrating capital market instruments, fiscal decentralisation, PPP frameworks, and PFM reforms within an institutional theory lens, this study advances a more coherent financial governance architecture tailored to emerging economies.

Table 1 presents the Integrated Financial Governance Framework for Green City Transitions. The model conceptualises green city financing as a layered governance architecture progressing from financial instruments to sustainability outcomes. At the foundational level, financial instruments mobilise capital. These instruments are embedded within institutional mechanisms that integrate sustainability into budgeting and oversight systems. Above this, the broader financial architecture comprising fiscal decentralisation, regulatory enforcement, and public financial management systems ensures compliance, accountability, and fiscal discipline. The cumulative interaction of these layers produces measurable sustainability outcomes, including resilience, emission reduction, and improved service delivery. The framework advances the literature by demonstrating that financial architecture, rather than isolated instruments, determines long-term success in sustainability.

Table 1. Integrated Financial Governance Architecture

Level	Components	Functional Role	Outcome Linkage
Financial Instruments Layer	Green bonds; Climate funds; PPPs; Conditional grants	Mobilisation of capital and risk-sharing	Enables infrastructure financing
Institutional Mechanisms Layer	Sustainability units; Green budgeting; Climate expenditure tagging; Performance monitoring	Embeds environmental priorities within fiscal processes	Enhances accountability and coherence
Financial Architecture Layer	Public Financial Management systems; Fiscal decentralisation; Regulatory enforcement; Audit oversight	Governs resource allocation, compliance, and fiscal discipline	Builds investor confidence and fiscal credibility

Sustainability Outcomes Layer	Emission reduction; Climate resilience; Service delivery improvement; Inclusive urban growth	Long-term environmental and socio-economic impact	Sustainable urban transition

Source: Researchers' Own Construct

Methodology

This study adopted a systematic review design to synthesise existing scholarship on institutional and fiscal mechanisms for financing green cities in emerging economies. A systematic review was selected to ensure transparency, replicability, and methodological rigour in identifying, screening, and analysing relevant literature (Tranfield, Denyer, & Smart, 2003). The review process was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework, which provides structured procedures for evidence identification, inclusion, and reporting (Page et al., 2021).

Table 2 presents the PRISMA-guided study selection process adopted in this systematic review. The structured four-stage procedure, identification, screening, eligibility, and inclusion ensured methodological transparency and replicability. An initial pool of records was retrieved from major academic databases, followed by duplicate removal and title–abstract screening. Full-text assessment further refined the sample using predefined inclusion criteria, focusing on municipal-level financing mechanisms in emerging economies. The final corpus of included studies reflects a concentrated body of peer-reviewed literature that directly addresses institutional and fiscal dimensions of green city financing. The PRISMA approach strengthens the reliability and credibility of the synthesis by systematically reducing selection bias and enhancing analytical rigour.

Table 2. PRISMA Flow of Study Selection Process

Stage	Description	Number of Records
Identification	Records identified through database searching (Scopus, Web of Science, ScienceDirect)	412
	Additional records identified through reference screening	38
	Total records identified	**450**
Screening	Records after duplicates removed	389
	Records screened (title & abstract)	389
	Records excluded (irrelevant focus, national-only finance, non-urban focus)	247
Eligibility	Full-text articles assessed for eligibility	142
	Full-text articles excluded (methodological weakness, no fiscal dimension, developed-country-only focus)	86
Included	Studies included in the qualitative synthesis	**56**

Source: Researchers' Own Construct

Search Strategy

A comprehensive search was conducted across major academic databases, including Scopus, Web of Science, and ScienceDirect. These databases were selected due to their extensive coverage of peer-reviewed journals in sustainability, public finance, urban studies, and development research. The search was limited to articles published between 2010 and 2025 to capture contemporary developments in green finance and sustainable urban governance following the global climate policy shift marked by the Paris Agreement.

Search strings combined keywords and Boolean operators as follows:

“green cities” OR “sustainable cities” AND “municipal finance” OR “urban finance” OR “climate finance” AND “institutional mechanisms” OR “fiscal instruments” AND “emerging economies” OR “developing countries”.

Inclusion and Exclusion Criteria

Articles were included if they:

(i) were peer-reviewed journal publications;
(ii) focused on financing mechanisms at the municipal or subnational level;
(iii) examined institutional, fiscal, or governance dimensions of sustainable urban development; and
(iv) addressed emerging or developing economy contexts.

Grey literature, conference abstracts, non-English publications, and studies focusing exclusively on national-level climate finance without urban relevance were excluded.

Screening and Data Extraction

The screening process followed the PRISMA four-stage flow: identification, screening, eligibility, and inclusion (Page et al., 2021). Titles and abstracts were initially reviewed to remove duplicates and irrelevant studies. Full-text screening was then conducted to assess methodological quality and relevance to the research objective. To enhance methodological rigour, study quality was assessed using an adapted version of the Critical Appraisal Skills Programme (CASP) checklist. The appraisal focused on the clarity of the research design, the validity of the data sources, the transparency of the analytical methods, the strength of the conclusions, and the contextual relevance to emerging economies. Given the inclusion of diverse methodological approaches (qualitative, quantitative, and conceptual studies), the CASP framework was applied flexibly to ensure consistency while accommodating heterogeneity. Studies failing to meet minimum quality thresholds were excluded during full-text screening.

Data extraction focused on:

• Type of financing instrument (e.g., green bonds, PPPs, intergovernmental transfers)
• Institutional arrangements and governance structures

• Identified constraints and enabling factors

• Geographic focus and methodological approach

Data Analysis

A thematic synthesis approach was employed to identify recurring patterns and categories across studies (Braun & Clarke, 2006). Findings were organised into major thematic clusters reflecting dominant institutional and fiscal mechanisms. This approach enabled the integration of diverse empirical and conceptual studies into a coherent analytical framework.

By adopting a PRISMA-guided systematic review methodology, the study enhances transparency and reliability while consolidating fragmented evidence on green city financing mechanisms in emerging economies. It should also be noted that this review is limited to peer-reviewed English-language studies and does not incorporate grey literature or case-level quantitative meta-analysis.

Results

The systematic review revealed four dominant thematic clusters that characterise institutional and fiscal mechanisms for financing green cities in emerging economies: (1) green bonds and capital markets, (2) intergovernmental fiscal transfers, (3) public–private partnerships (PPPs), and (4) institutional capacity and governance reforms. These clusters reflect both financial instruments and enabling institutional arrangements necessary for implementation.

Table 3 illustrates the four dominant thematic clusters emerging from the systematic review. The quadrant model visually captures the dual nature of green city financing mechanisms: financial instruments (green bonds, intergovernmental transfers, and PPPs) and enabling governance structures (institutional capacity and public financial management reforms). The first three quadrants represent capital mobilisation pathways, while the fourth quadrant highlights cross-cutting institutional determinants. The configuration demonstrates that financing mechanisms are interdependent rather than discrete. Institutional capacity and governance reforms underpin the effective deployment of capital market instruments, fiscal transfers, and PPP arrangements. This clustering reinforces the argument that sustainable urban finance requires systemic alignment between fiscal tools and governance architecture.

Table 3. Thematic Clusters of Green City Financing Mechanisms

Quadrant	Thematic Cluster	Core Focus	Key Constraints Identified
Quadrant I	Green Bonds & Capital Markets	Debt instruments, ESG alignment, investor mobilisation	Creditworthiness, shallow capital markets
Quadrant II	Intergovernmental Fiscal Transfers	Conditional grants, climate-linked transfers, vertical fiscal balance	Political interference, unpredictability
Quadrant III	Public–Private Partnerships	Risk sharing, private sector participation, and infrastructure delivery	Governance risk, contractual complexity
Quadrant IV	Institutional Capacity & Governance Reform	Green budgeting, regulatory enforcement, and PFM strengthening	Skills shortages, weak compliance systems

Source: Researchers' Own Construct

The systematic review synthesised 56 peer-reviewed studies published between 2010 and 2025 and identified four dominant yet interdependent thematic clusters shaping green city financing in emerging economies: (1) green bonds and capital markets, (2) intergovernmental fiscal transfers, (3) public–private partnerships (PPPs), and (4) institutional capacity and governance reforms. Rather than operating as isolated mechanisms, the evidence indicates that these clusters function within broader financial governance architectures that determine sustainability outcomes.

Green Bonds and Capital Markets: Instrument Expansion but Institutional Dependence

The literature shows substantial growth in green bond issuance globally after 2015, particularly in Europe, North America, and parts of East Asia. In developed economies, municipal green bonds are embedded within mature credit markets, strong disclosure regimes, and stable regulatory frameworks, enabling predictable capital mobilisation.

In contrast, evidence from Sub-Saharan Africa, South Asia, and parts of Latin America demonstrates limited municipal participation. Barriers include low creditworthiness, weak balance sheets, limited technical expertise in structuring green debt, and underdeveloped domestic capital markets. Several studies emphasise that green bonds in emerging economies often rely on sovereign guarantees or support from multilateral development banks to mitigate investor risk.

Analytically, the findings suggest that capital market instruments are not inherently transformative. Their effectiveness is contingent upon institutional maturity, fiscal transparency, and the capacity for regulatory enforcement. Where these institutional preconditions are weak, green bonds remain sporadic rather than systemic sources of financing.

Intergovernmental Fiscal Transfers: Incentive Alignment and Structural Constraints

Intergovernmental fiscal transfers emerged as a foundational mechanism in fiscally constrained municipalities. The review indicates that performance-based climate grants and earmarked environmental transfers can incentivise subnational sustainability initiatives when designed with clear accountability frameworks. Compared with other countries, OECD countries exhibit more predictable, formula-driven transfer systems, enabling better alignment between national climate commitments and local implementation. Conversely, in emerging economies, transfers are often politically mediated, unpredictable, or inadequately linked to performance metrics.

Vertical fiscal imbalances remain a persistent constraint. Municipalities frequently carry expenditure mandates exceeding their revenue autonomy. As a result, climate-linked conditional grants may alleviate short-term financing gaps but do not fully address structural fiscal dependence. The synthesis, therefore, reveals that intergovernmental transfers are most effective when embedded within coherent decentralisation frameworks that balance fiscal autonomy with accountability.

Public–Private Partnerships: Risk Sharing or Risk Transfer?

The review identifies PPPs as widely promoted mechanisms for delivering green infrastructure, particularly in the renewable energy, waste management, and transport sectors. In developed contexts, PPPs benefit from stable legal frameworks and established contract management expertise.

However, evidence from emerging economies indicates higher exposure to governance risk, contingent liabilities, and renegotiation challenges. Several case-based studies demonstrate that poorly structured PPP contracts can shift fiscal risk back to municipalities, undermining long-term sustainability. A cross-regional comparison reveals that PPP effectiveness depends less on the availability of private capital and more on public-sector capacity for contract management. Where procurement transparency, audit systems, and legal enforcement mechanisms are weak, PPPs may exacerbate fiscal vulnerability. Thus, the results indicate that PPPs are not merely financing instruments but institutional arrangements requiring strong regulatory governance to avoid fiscal instability.

Institutional Capacity and Governance Reform: The Cross-Cutting Determinant

Across all financing clusters, institutional capacity and governance reform emerged as the most significant determinant of sustainable outcomes. Thematic synthesis consistently shows that robust public financial management systems, including budget credibility, audit oversight, procurement transparency, and regulatory enforcement, mediate the success of capital mobilisation instruments.

Green budgeting innovations, including climate expenditure tagging and sustainability reporting, demonstrate promising integration of environmental objectives into fiscal systems

in developed economies. However, implementation in emerging contexts remains uneven due to technical skills shortages, fragmented data systems, and political instability.

Importantly, studies reveal that alignment between institutional coherence across regulatory frameworks, normative sustainability commitments, and administrative capacity distinguishes transformative green finance systems from symbolic adoption. These constraints, particularly skills shortages, weak technical expertise, and limited administrative systems, reflect deficiencies within the cognitive pillar of institutional frameworks, reinforcing its central role in shaping implementation outcomes.

Integrative Synthesis

Rather than identifying a hierarchy of instruments, the review reveals a layered interdependence. Financial instruments mobilise capital, but institutional mechanisms embed sustainability into fiscal processes. The broader financial architecture comprising decentralisation arrangements, regulatory enforcement, and PFM systems ultimately determines whether green city financing produces measurable sustainability outcomes.

This integrative finding strengthens the argument that financial architecture, rather than isolated instruments, determines the success of sustainability in emerging economies.

Discussion

Institutional Theory Lens

Interpreting the findings through an institutional theory lens provides deeper insight into why green city financing mechanisms succeed or fail in emerging economies. Institutional theory emphasises the role of formal rules, norms, and organisational structures in shaping behaviour and policy outcomes (Scott, 2014). The review demonstrates that green finance instruments such as bonds, conditional grants, and PPPs do not operate in isolation; rather, their effectiveness is embedded within regulatory, normative, and cognitive institutional frameworks. Formal institutions, including public financial management legislation and procurement regulations, determine compliance and accountability standards. Normative pressures, such as global sustainability commitments and ESG reporting expectations, create legitimacy incentives for municipalities. Cognitive dimensions, including leadership commitment and professional capacity, influence policy adoption and implementation. Thus, green city financing requires institutional alignment across these pillars to translate environmental commitments into fiscally credible action.

Fiscal Decentralisation Implications

The findings further highlight the centrality of fiscal decentralisation in enabling sustainable urban finance. In many emerging economies, subnational governments have extensive service-

delivery mandates but limited autonomy to raise revenue, resulting in vertical fiscal imbalances (OECD, 2019). Effective green city transitions depend on decentralised fiscal authority that allows municipalities to mobilise own-source revenue, access borrowing mechanisms, and design context-specific sustainability interventions. However, decentralisation without accountability may exacerbate fiscal risk. The review therefore suggests that balanced decentralisation combining autonomy with robust oversight, transparent reporting, and performance-based transfers is essential for strengthening municipal climate finance capacity.

Emerging Economy Constraints

Despite the potential of financial instruments, emerging economies face structural constraints that limit implementation. Weak creditworthiness, shallow domestic capital markets, political instability, skills shortages, and governance deficits undermine investor confidence and project viability. Additionally, competing socio-economic priorities such as poverty alleviation, housing backlogs, and unemployment often divert fiscal attention from long-term environmental investments. These constraints reinforce the importance of institutional capacity building, regulatory clarity, and integrated financial governance reforms. Without systemic improvements in public financial management and accountability systems, green finance initiatives risk remaining symbolic rather than transformative.

Overall, the discussion underscores that financing green cities in emerging economies is not merely a technical financial challenge but an institutional governance reform agenda requiring coordinated fiscal, regulatory, and organisational transformation.

Policy Implications and Recommendations

The findings of this review demonstrate that financing green cities in emerging economies requires systemic institutional reform rather than isolated financial instruments. Sustainable urban transitions depend on embedding environmental priorities within public financial management systems, strengthening fiscal decentralisation frameworks, and aligning national climate objectives with municipal implementation capacity. Table 4 presents key policy recommendations derived from the thematic findings.

Table 4: Policy Recommendations for Financing Green Cities in Emerging Economies

Policy Area	Recommended Intervention	Rationale	Expected Outcome
Dedicated Sustainability Units	Establish specialised sustainability or climate finance units within municipalities or semi-autonomous agencies supporting local governments.	Enhances coordination among planning, budgeting, and environmental departments; improves technical capacity to structure green projects and access climate finance.	Increased project bankability, improved grant absorption rates, and stronger institutional alignment.
Green Budgeting Integration	Integrate climate-responsive and green budgeting frameworks into municipal budget cycles, including tagging, performance indicators, and sustainability reporting.	Embeds environmental priorities into fiscal decision-making and strengthens accountability mechanisms.	Transparent allocation of resources toward sustainability goals and improved monitoring of environmental expenditure.
Climate-Linked Conditional Grants	Introduce performance-based intergovernmental transfers tied to climate mitigation and adaptation targets.	Addresses vertical fiscal imbalances and incentivises subnational environmental performance.	Enhanced local implementation of national climate commitments and improved fiscal discipline.
Strengthened MFMA/PFMA Enforcement	Strengthen enforcement of public financial management legislation, including compliance monitoring, audit transparency, and consequence management.	Ensures that green finance initiatives operate within robust governance and accountability frameworks.	Reduced fiscal risk, improved investor confidence, and enhanced the credibility of municipal green finance initiatives.

Source: Researchers' Own Construct

Collectively, these recommendations underscore the need for an integrated financial governance architecture. Emerging economies must move beyond project-based approaches toward systemic reforms that align fiscal instruments, institutional capacity, and regulatory enforcement to support sustainable urban development.

Limitations and Future Research

This study is subject to several limitations. First, the review was restricted to peer-reviewed English-language publications published between 2010 and 2025, thereby excluding grey literature, policy reports, and non-English studies that may offer valuable contextual insights, particularly from emerging economies. Second, while the PRISMA framework enhanced transparency in study selection, the review did not employ a quantitative meta-analysis due to methodological heterogeneity across studies. Third, the reliance on secondary data limits the ability to assess real-time institutional performance or project-level fiscal outcomes.

Future research should incorporate comparative case studies across regions to examine how institutional configurations influence financing effectiveness in practice. Empirical studies assessing the impact of green budgeting, climate-linked transfers, and municipal green bonds on measurable sustainability outcomes are particularly needed. Additionally, mixed-method approaches combining quantitative fiscal analysis with institutional assessment could deepen understanding of how financial architecture shapes long-term urban resilience.

Conclusion

This systematic review demonstrates that the success of green city transitions in emerging economies is fundamentally shaped by the underlying financial architecture within which sustainability initiatives are embedded. While instruments such as green bonds, conditional grants, and public–private partnerships offer important financing pathways, their effectiveness depends on the strength, coherence, and credibility of municipal public financial management systems. Financial architecture comprising fiscal decentralisation arrangements, revenue mobilisation capacity, regulatory enforcement, budgeting systems, and institutional coordination ultimately determines whether sustainability commitments translate into implementable and bankable projects. Where governance structures are weak, fragmented, or misaligned, green finance mechanisms risk becoming symbolic policy gestures rather than transformative development tools.

The review further highlights the necessity of integrated financial frameworks that align fiscal policy, institutional capacity, and sustainability objectives. Rather than adopting isolated funding instruments, emerging economies must embed environmental priorities within core budgeting, reporting, and accountability systems. An integrated framework strengthens vertical and horizontal coordination across government spheres, enhances investor confidence, improves expenditure transparency, and ensures long-term fiscal sustainability. Ultimately, financing green cities is not solely a question of mobilising capital; it is a governance reform agenda that requires systemic financial integration to achieve resilient, inclusive, and environmentally sustainable urban development. The study further demonstrates that in emerging economies, the limitations of green finance are not primarily rooted in the absence of regulatory frameworks or normative commitments, but in insufficient cognitive capacity to operationalise them. As such, strengthening the cognitive pillar is essential for ensuring that green finance transitions from symbolic policy adoption to substantive urban transformation.

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Entre discours et pratiques : La responsabilité sincère comme alternative aux découplages RSE dans le secteur textile tunisien

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Résumé

Cette recherche analyse les découplages inhérents à la Responsabilité Sociétale des Entreprises (RSE) au sein de trois entreprises tunisiennes du secteur textile. Ancrée dans le paradigme interprétativiste et une épistémologie du Sud (Santos, 2017), cette étude mobilise une méthodologie qualitative structurée en deux phases complémentaires. La phase exploratoire a combiné six entretiens compréhensifs et un récit de vie, tandis que la phase principale a mobilisé 22 entretiens semi-directifs, sept mois d'observation et l'analyse de 110 pages de documents internes. Le cadre conceptuel combine la théorie néo-institutionnelle du découplage (Meyer & Rowan, 1977 ; Bromley & Powell, 2012) et le concept émergent de Responsabilité Sincère de l'Entreprise (RSNE). Trois configurations sont identifiées : un non-découplage sincère fondé sur un ancrage culturel et un leadership éthique incarné ; un découplage politique-pratique relevant d'une conformité symbolique externe ; un découplage moyens-fins caractérisé par une sincérité managériale entravée par des contraintes structurelles. Cinq dimensions constitutives de la RSNE émergent inductivement : leadership éthique, confiance, transparence, reconnaissance et cohérence valeurs-actions. Ces résultats enrichissent la théorie néo-institutionnelle en intégrant l'intentionnalité, la culture organisationnelle et le leadership comme variables critiques.

Mots-clés : RSE – Responsabilité Sincère – Découplage – Théorie néo-institutionnelle – Textile – Tunisie

Abstract

This research analyzes the decouplings inherent in Corporate Social Responsibility (CSR) within three Tunisian textile companies. Grounded in an interpretivist paradigm and Southern epistemology (Santos, 2017), this qualitative study unfolds in two phases. The exploratory phase involved six comprehensive interviews and one life-narrative; the main phase mobilized 22 semi-structured interviews, seven months of observation, and analysis of 110 pages of internal documents. The conceptual framework combines neo-institutional decoupling theory (Meyer & Rowan, 1977; Bromley & Powell, 2012) and the emerging concept of Sincere Corporate Social Responsibility (SCSR). Three configurations are identified: genuine non-decoupling rooted in pre-

existing cultural values and embodied ethical leadership; policy-practice decoupling driven by external symbolic conformity; and means-ends decoupling characterized by authentic but structurally constrained managerial intentions. Five constitutive dimensions of GCR emerge inductively: ethical leadership, trust, transparency, recognition, and value-action coherence. These findings enrich neo-institutional theory by integrating intentionality, organizational culture, and leadership as critical analytical variables.

Keywords: CSR – Genuine Corporate Responsibility – Decoupling – Neo-institutional Theory – Textile – Tunisia

Introduction

Face à l'intensification des crises environnementales et sociales mondiales (GIEC, 2019 ; IPCC, 2021), les entreprises sont de plus en plus sommées de justifier leur rôle sociétal. La Responsabilité Sociétale des Entreprises (RSE) s'est ainsi imposée comme un référentiel central dans les sphères managériale, institutionnelle et académique (Carroll, 1999 ; Capron & Quairel, 2016 ; Gond & Igalens, 2016). En élargissant leur finalité au-delà du seul profit, les entreprises sont invitées à intégrer des dimensions sociales, environnementales et éthiques à leur stratégie (Porter & Kramer, 2011).

Des données récentes attestent de l'ampleur du phénomène : selon le Global Reporting Initiative (GRI, 2024) ,plus de 14 000 organisations dans 100 pays publient des rapports de développement durable. Pourtant, cette diffusion massive ne s'accompagne pas nécessairement d'une transformation profonde des comportements organisationnels. (Hawn & Ioannou, 2016) montrent que jusqu'à 60 % des entreprises présentent des écarts significatifs entre engagements déclarés et pratiques effectives, ce que la théorie néo-institutionnelle conceptualise comme le découplage (Meyer & Rowan, 1977 ; Bromley & Powell, 2012).

Dans le contexte tunisien, le secteur textile — premier employeur industriel avec environ 160 000 salariés directs (INS, 2022) est soumis à des pressions croissantes de donneurs d'ordre européens exigeant des certifications sociales. Pourtant, une enquête de l'Institut Arabe des Chefs d'Entreprises (IACE, 2021) révèle que moins de 30 % des entreprises tunisiennes disposent d'une politique RSE formalisée et que la moitié reconnaissent des difficultés d'opérationnalisation. Ces constats empiriques témoignent d'une institutionnalisation partielle et asymétrique de la RSE,

davantage orientée vers la conformité externe que vers une transformation profonde des pratiques managériales (Koleva & Gherib, 2012).

Face à ces limites, le concept de Responsabilité Sincère de l'Entreprise (RSNE) a émergé du terrain tunisien comme alternative au découplage. Initialement proposé par G. El Biche (2019), fondateur et CEO de Van Laack Tunisie, la RSNE désigne un engagement organisationnel caractérisé par la cohérence intentionnelle et observable entre valeurs proclamées, décisions managériales et pratiques effectives. Dans le prolongement des épistémologies du Sud (Santos, 2016, 2017), cette notion valorise les savoirs situés et les rationalités locales comme fondements d'une RSE authentiquement transformatrice.

La question centrale de cette recherche est donc :

Comment s'articulent les découplages inhérents à la RSE et comment la responsabilité sincère peut-elle y représenter une alternative ?

Cette recherche vise à analyser les logiques de découplage à l'œuvre dans les démarches de Responsabilité Sociétale des Entreprises du secteur de Textile en Tunisie, en mettant en lumière les écarts entre engagements déclarés et pratiques effectives. Elle s'attache plus particulièrement à explorer la manière dont la sincérité est perçue, interprétée et mobilisée par les managers et les employés, ainsi qu'à comprendre les mécanismes d'alignement ou de contournement entre discours et action. Pour ce faire, l'étude adopte une posture subjectiviste ancrée dans l'épistémologie du Sud (Santos, 2016) valorisant les savoirs situés, les expériences locales et la pluralité des rationalités, dans une perspective respectueuse de la voix des acteurs et de la matérialité du terrain. Située dans une approche qualitative par études de cas multiples menée dans trois entreprises tunisiennes du secteur textile.

L'article s'articule en quatre parties : revue de littérature, méthodologie, résultats empiriques, et discussion avec recommandations managériales.

1. Revue de littérature : du découplage à la responsabilité sincère

1.1 La RSE : évolution conceptuelle et cadrage théorique

(Carroll, 1979;(Carroll, 1999) propose une conceptualisation pyramidale de la RSE intégrant les dimensions économiques, légales, éthiques et philanthropiques. Cette approche a progressivement évolué

vers des modèles plus holistiques intégrant les parties prenantes (Freeman, 1984) et les dimensions environnementales (Porter & Kramer, 2011). (Matten & Moon, 2008), distinguent entre RSE implicite (ancrée dans les traditions culturelles) et RSE explicite (formalisée selon des standards internationaux). Dans le contexte africain et tunisien, cette distinction prend une dimension particulière: les pratiques responsables peuvent être culturellement enracinées sans être formalisées selon les standards occidentaux (Koleva & Gherib, 2012 ; Jamali & Neville, 2011).

(Gond, 2010), souligne le caractère intrinsèquement pluraliste de la RSE, qui peut être appréhendée comme fonction de régulation sociale, relation de pouvoir, produit culturel ou construction sociocognitive. C'est dans cette dernière perspective que nous situons notre approche de la RSNE : comme une construction culturelle et morale, distincte des formes instrumentales de RSE.

1.2 La théorie néo-institutionnelle et le concept de découplage

(Meyer & Rowan, 1977, p.357) définissent le découplage comme la séparation entre les structures formelles d'une organisation et ses activités techniques réelles : les organisations « adoptent des structures institutionnalisées légitimées comme des moyens formels pour accomplir leurs buts, mais ces structures maintenues formellement sont dissociées des activités de travail réelles ». Ce mécanisme permet aux organisations de maintenir leur légitimité externe tout en préservant leurs routines opérationnelles internes.

(Bromley & Powell, 2012) affinent cette analyse en distinguant deux types de découplage. Le découplage politique-pratique désigne l'écart entre les politiques formelles affichées (chartes, labels, codes de conduite) et les pratiques opérationnelles effectives. Le découplage moyens-fins désigne la situation où les ressources mobilisées ne sont pas articulées aux objectifs déclarés : l'organisation souhaite sincèrement atteindre ses objectifs RSE, mais les moyens disponibles ne le permettent pas. DiMaggio et Powell (1983, p.150) identifient trois mécanismes d'isomorphisme institutionnel : coercitif, mimétique et normatif, qui alimentent ces formes de découplage.

Des travaux récents enrichissent cette perspective. (Wijen, 2014) explore les conditions de réduction du découplage dans le domaine du développement durable, notamment en termes de capacités organisationnelles. (Wickert et al., 2016), montrent paradoxalement que les grandes entreprises présentent davantage de découplage que les PME.(Lyon & Maxwell, 2006) identifient le greenwashing comme forme extrême de découplage délibéré.

1.3 La sincérité et l'authenticité dans la RSE : une distinction nécessaire

Dans la littérature, les termes sincérité et authenticité sont souvent mobilisés de manière interchangeable. (Trilling, 1972), propose cependant une distinction fondamentale : l'authenticité renvoie à l'expression du « vrai soi », à l'alignement entre l'identité organisationnelle profonde et ses actions, la sincérité désigne la congruence entre ce qu'une personne dit ressentir et ce qu'elle ressent réellement : l’absence de dissimulation. Dans le champ de la RSE, (Gunawan et al., 2020) opérationnalisent

l'authenticité comme la cohérence perçue entre les engagements RSE et les pratiques réelles, et montrent qu'elle renforce la confiance des consommateurs.

(Fassin & Buelens, 2011) proposent un outil permettant de positionner une organisation sur un continuum allant de l'idéalisme à l'hypocrisie, selon le degré de congruence entre communication et réalité des actions. Dans ce cadre, la sincérité se distingue de l'authenticité par son ancrage moral explicite : elle implique une volonté de transparence envers les parties prenantes, indépendamment des avantages réputationnels potentiels. C'est cette dimension morale et intentionnelle qui en fait, selon nous, une alternative plus robuste au découplage que la simple authenticité perçue.

1.4 La Responsabilité Sincère de l'Entreprise (RSNE) : définition et dimensions

La RSNE désigne un mode d'engagement organisationnel caractérisé par la cohérence intentionnelle et observable entre les valeurs proclamées, les décisions managériales et les pratiques effectives, dans le but de répondre authentiquement aux attentes des parties prenantes internes et externes. Elle se distingue de la RSE classique en intégrant une dimension morale : elle implique que la correspondance entre discours et pratiques résulte d'une volonté authentique et d'une culture organisationnelle favorable, et non d'une conformité instrumentale.

Ce concept a émergé du terrain Tunisien à travers la pratique de Van Laack Tunisie, dont le CEO a formalisé l'approche en ces termes : « Il s'agirait de mettre en place une politique non imposée par l'extérieur, qui mettrait en arrière-plan les intérêts purement économiques, qui incite les entreprises et leurs dirigeants à intégrer une nouvelle dimension sociale et environnementale au cœur même de leur stratégie. J'ai nommé la Responsabilité Sincère de l'Entreprise » (G. El Biche, 2019). La RSNE s'inscrit dans une approche sociocognitive de la RSE (Gond, 2010) et dans le prolongement des épistémologies du Sud (Santos, 2016, 2017), valorisant les savoirs situés et la pluralité des rationalités.

Synthèse de la revue de littérature : La revue de littérature met en évidence trois tensions fondamentales : (1) entre RSE prescrite et RSE vécue, conceptualisée par la théorie du découplage, (2) entre authenticité perçue et sincérité morale, distinction opérée par Trilling (1972) et Fassin & Buelens (2011) , (3) entre conformité institutionnelle externe et ancrage culturel interne. C'est à l'articulation de ces tensions que s'inscrit le concept de RSNE, entendu comme un engagement organisationnel cohérent, intentionnel et culturellement enraciné.

Le cadre conceptuel mobilisé est synthétisé dans la Figure 1 ci-dessous

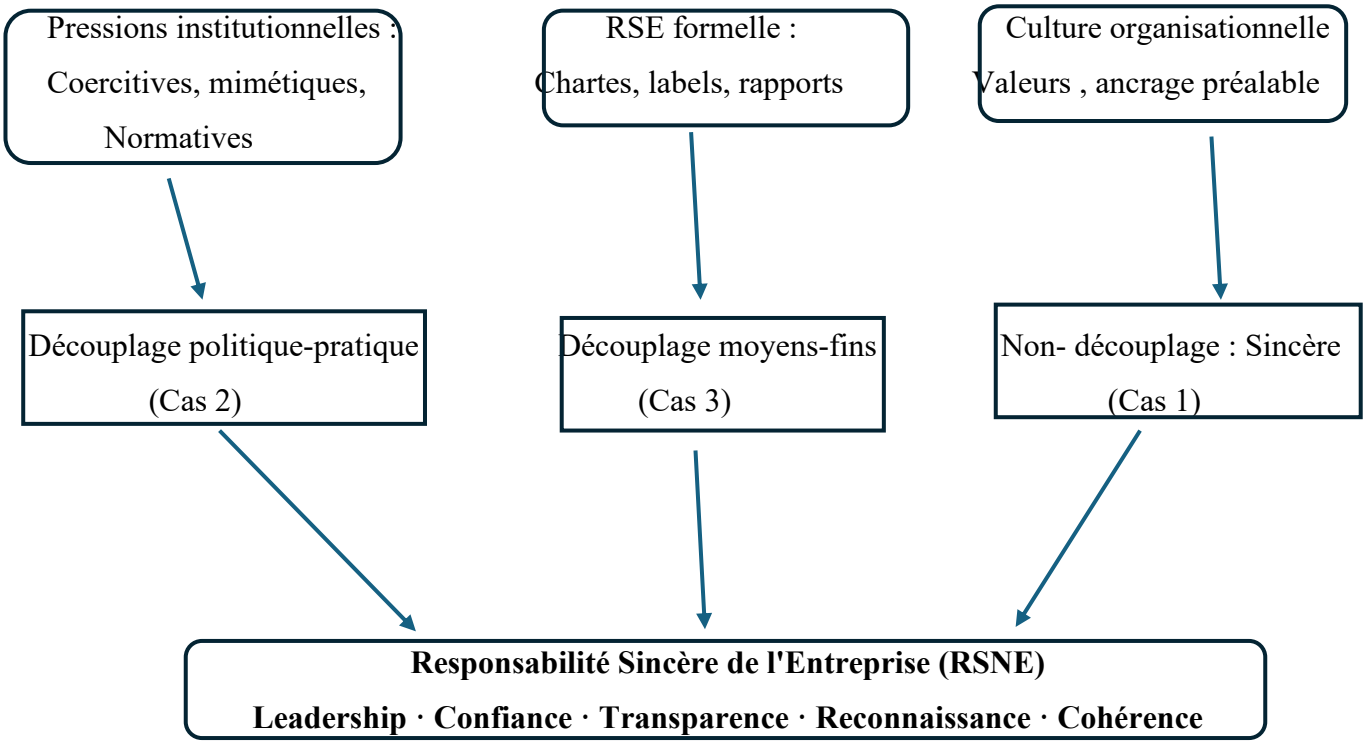


Figure 1 : Cadre conceptuel intégré : du découplage à la RSNE

2. Approche méthodologique

2.1 Posture épistémologique

Cette recherche s'inscrit dans une posture interprétativiste, centrée sur la compréhension des significations que les acteurs attribuent à leurs pratiques et discours. Elle adopte une épistémologie du Sud (Santos, 2017), valorisant les savoirs situés, les expériences locales et la pluralité des rationalités. Cette posture est cohérente avec notre objet d'étude, la sincérité dans les démarches RSE, qui implique de restituer fidèlement la voix des acteurs organisationnels dans leur contexte culturel et économique spécifique.

2.2 Sélection des cas et justification

Les trois entreprises ont été sélectionnées selon une logique d'échantillonnage théorique (Glaser & Strauss, 1967 ; Yin, 2018), guidée par leur capacité à illustrer des configurations contrastées du phénomène étudié. La catégorisation (sincérité intégrée, découplage politique-pratique, découplage moyens-fins) n'a pas été établie a priori : elle a émergé progressivement au cours de la phase exploratoire, à mesure que les données révélaient des patterns récurrents différenciés. Le choix définitif des cas a ensuite été arrêté selon une logique de contraste maximal (Eisenhardt, 1989)favorisant la validité interne de l'analyse comparative.

Cette diversité stratégique en termes de taille, statut juridique, degré d'internationalisation et visibilité institutionnelle permet de mettre en lumière les différentes logiques de mise en œuvre de la RSE, entre formalisation stratégique, pratiques informelles et absence de structuration.

La collecte des données s'est poursuivie jusqu'à l'atteinte de la saturation théorique (Glaser & Strauss, 1967) : aucune configuration nouvelle n'a émergé après l'analyse des trois cas, confirmant la suffisance de l'échantillon théorique. Des entreprises supplémentaires ont été envisagées, au cours de la phase exploratoire, mais écartées car elles reproduisaient des patterns déjà identifiés sans apporter de variation analytique supplémentaire. Cette logique de contraste maximal (Eisenhardt, 1989), opposant sincérité intégrée, découplage cynique et découplage contraint, garantit une couverture exhaustive du phénomène étudié dans le secteur textile tunisien. La diversité stratégique retenue (taille, statut juridique, degré d'internationalisation) maximise la richesse interprétative de la comparaison inter-cas (Yin, 2018).

2.3 Présentation des cas

Cas 1 — Entreprise A (Van Laack Tunisie) : Responsabilité Sincère Intégrée

Filiale tunisienne du groupe allemand Van Laack GmbH, spécialisée dans la confection du prêt-à-porter haut de gamme, employant environ 600 collaborateurs. L'entreprise se caractérise par un leadership éthique incarné par son CEO (56 ans, 30 ans d'expérience), une politique RSE sincère comprenant audits sociaux réguliers, espaces de dialogue collectif et intégration stratégique des valeurs RSE. Ce cas extrême positif (Yin, 2018) permet d'analyser l'émergence de pratiques sincères dans un contexte fortement institutionnalisé.

Cas 2 — Entreprise B : Découplage Politique-Pratique

PME tunisienne (500 employés) spécialisée dans la confection à l'export, fortement institutionnalisée selon ses publications et site web, mais présentant un découplage majeur entre engagements formels (éducation, environnement, formation) et pratiques réelles. Les ressources limitées et les pressions des donneurs d'ordre internationaux génèrent une RSE de façade destinée à satisfaire les exigences de certification.

Cas 3 — Entreprise C : Découplage Moyens-Fins

Entreprise de taille moyenne (600 employés) exportant vers l'Europe, sans charte RSE formalisée mais mobilisant des initiatives sociales variées. Les intentions managériales sont authentiques — reconnues comme telles par les employés — mais les contraintes économiques et organisationnelles limitent l'atteinte des objectifs déclarés, générant une frustration partagée plutôt qu'un cynisme organisationnel

Tableau 1 — Matrice comparative des trois cas

Dimension	Cas 1 — Entreprise A	Cas 2 — Entreprise B	Cas 3 — Entreprise C
Statut juridique	Filiale internationale	PME groupe exportateur	PME indépendante
Effectifs	~600 employés	~500 employés	~600 employés
Ressources	Significatives	Limitées	Limitées
Configuration RSE	Intégration sincère	Découplage politique-pratique	Découplage moyens-fins
Alignement discours-pratique	Convergence forte	Divergence majeure	Convergence partielle
Motivation principale	Valeurs culturelles	Légitimation externe	Conformité contrainte
Leadership	Incarné et participatif	Discursif, cynique	Bienveillant mais limité
Intérêt analytique	Succès de sincérité	Mécanismes de découplage	Transition progressive

2.4 Protocole de collecte des données

La recherche s'est déroulée en deux phases mobilisant une triangulation rigoureuse des sources.

Phase 1 (exploratoire, inductive) : Six entretiens compréhensifs approfondis (50 à 95 minutes) menés avec un représentant de direction par entreprise, un récit de vie d'un manager ayant présidé la Fédération Tunisienne de Textile et d'Habillement, une observation participante et une analyse documentaire. Cette phase a permis d'identifier les configurations de découplage et d'affiner le cadre théorique.

Phase 2 (principale, abductive) : 22 entretiens semi-directifs répartis dans les trois entreprises — un manager et six employés par entreprise, avec une diversité fonctionnelle volontaire (CEO, responsables qualité, RH et production, opératrices, délégués syndicaux, techniciens). Les entretiens ont duré entre 30 et 62 minutes, générant un volume de transcription dépassant 200 pages. Des observations participantes et non participantes ont été menées pendant sept mois, complétées par l'analyse de 110 pages de documents internes (conventions collectives, chartes d'engagements, rapports d'audits ICS, projets RSE).

Tableau 2 — Synthèse de l'échantillon des répondants (Phase 2)

Code	Sexe	Âge	Fonction	Exp. (ans)	Durée	Transcription
V-M01	H	56	CEO (Ent. A)	30	62 min	20 p.
V-E01–E07	H/F	29–43	Qualité, opératrice, syndicale, technicien…	7–20	30–48 min	7–12 p.
K-M01	H	46	RH (Ent. B)	20	55 min	22 p.
K-E01–E06	H/F	33–42	Couturière, chef d'équipe, contrôle…	8–18	32–45 min	8–15 p.
S-M01	H	42	DG (Ent. C)	18	58 min	28 p.
S-E01–E06	H/F	28–40	Patronnière, styliste, logistique…	5–16	30–42 min	7–11 p.

2.5 Méthode d'analyse : articulation Bardin-Gioia

L'analyse mobilise trois approches complémentaires. L'analyse de contenu selon (Bardin, 2013) assure un traitement rigoureux du corpus textuel en trois phases : pré-analyse, exploitation thématique et interprétation des résultats. Le modèle de Gioia et al. (2013) complète Bardin en permettant l'émergence de concepts théoriques non anticipés, selon une logique inductive stricte allant des codes de premier ordre vers des catégories agrégées de second ordre. La complémentarité est essentielle : Bardin garantit la rigueur thématique, Gioia ouvre à la nouveauté conceptuelle. Des matrices croisées inspirées de (Miles & Huberman, 2003) ont complété l'analyse comparative horizontale et verticale entre les trois cas.

3. Résultats empiriques

L'analyse triangulée des entretiens, observations et documents révèle des configurations contrastées de la mise en œuvre de la RSNE. Cette section présente les résultats empiriques de manière autonome, avant leur mise en discussion avec la littérature dans la section suivante.

3.1 Cas 1 : Le non-découplage sincère comme cohérence culturelle

L'Entreprise A présente une configuration dans laquelle la RSE n'est pas vécue comme une contrainte externe mais comme l'expression de valeurs culturelles préexistantes. L'analyse des entretiens révèle un alignement fort entre les discours managériaux et les perceptions des employés. Un manager synthétise : « Nous avons toujours eu à cœur de respecter nos engagements sociaux », les employés confirment : « On se sent considérés et reconnus, cela motive notre travail. »

Cette cohérence s'exprime à travers quatre dimensions observables : un leadership éthique incarné, où les managers sont exemplaires dans leurs actions quotidiennes, une intégration stratégique de la RSE dans la gouvernance globale et dans la mission de l'entreprise, l'allocation de ressources conséquentes et priorisées , et la création d'espaces de dialogue permettant la co-construction de la RSE avec les salariés. Le manager déclare : « On tient nos promesses, on est transparents, et c'est tout partagé par l'équipe » , condensant les trois éléments de la cohérence sincère : promesses tenues, transparence et partage collectif.

Au niveau des observations sur sept mois, aucune incohérence significative n'a été relevée entre les engagements affichés et les pratiques quotidiennes. Les audits ICS consultés confirment une conformité substantielle aux standards sociaux internationaux, traduisant une RSE intégrée et non symbolique.

3.2 Cas 2 : Le découplage politique-pratique comme conformité symbolique

L'Entreprise B illustre un cas exemplaire de découplage politique-pratique. La triangulation des données révèle une triple incohérence. Au niveau des entretiens : les managers affichent un discours formel de responsabilité sociale tandis que les employés expriment un scepticisme marqué et une frustration croissante , « On nous dit qu'il y a un programme de formation, mais personne ne peut y aller vraiment... c'est juste sur le papier. » Au niveau des observations : les pratiques quotidiennes demeurent fortement orientées par la productivité et la rentabilité, sans que les engagements sociaux génèrent des transformations visibles des processus de travail. Au niveau documentaire : les rapports RSE consultés sont fortement standardisés, peu contextualisés aux réalités tunisiennes, et manifestement orientés vers la communication externe destinée aux clients internationaux.

Cette triple incohérence révèle que le découplage politique-pratique ne relève pas uniquement de perceptions divergentes, mais constitue une stratégie structurelle de conformité symbolique. Trois types d'isomorphisme l'alimentent : coercitif (exigences de certification des clients), mimétique (imitation des politiques RSE des leaders sectoriels) et normatif (adoption de standards ISO et SA 8000 sans transformation interne). Les managers se sentent « conscients des écarts mais impuissants face aux pressions économiques », générant un cynisme défensif qui se transmet progressivement aux employés.

3.3 Cas 3 : Le découplage moyens-fins comme sincérité entravée

L'Entreprise C présente une configuration intermédiaire et particulièrement révélatrice : la RSE est formellement reconnue comme souhaitable par managers et employés, les intentions managériales sont authentiques, mais les contraintes économiques et organisationnelles limitent drastiquement la capacité d'action. Un manager reconnaît : « On a une politique RSE sur le papier, mais peu de moyens pour agir. »

Contrairement au Cas 2, le Cas 3 se caractérise par une reconnaissance partagée que les intentions sont sincères mais les résultats limités. Les efforts restent ponctuels plutôt que systémiques, et les ressources mobilisées ne sont pas articulées de manière cohérente à l'architecture stratégique de la responsabilité. Cette configuration génère une frustration partagée plutôt qu'un cynisme organisationnel. L'analyse des

observations révèle cependant des prémices d'apprentissage progressif : des initiatives sociales modestes mais réelles, reconnues et valorisées par les employés, constituent un socle fragile mais réel pour une transformation ultérieure.

3.4 Les cinq dimensions constitutives de la RSNE

L'analyse inductive selon le modèle Gioia a fait émerger cinq dimensions constitutives de la RSNE, non initialement théorisées :

Dimension 1 — Le leadership éthique comme incarnation : cohérence observable entre valeurs proclamées et actions quotidiennes. Les leaders éthiques se distinguent par leur intégrité, leur sens des responsabilités, leur empathie et leur courage face à l'injustice (Liu & Mohammad, 2024 ; Maak et al., 2016). Ils créent des espaces de dialogue permettant la co-construction de la RSE avec les salariés (Bouderbala, 2021).

Dimension 2 — La confiance comme processus temporel fragile : processus lent à construire (plusieurs années de cohérence) et rapide à détruire (quelques expériences négatives suffisent). Dans le Cas 1, la confiance s'est construite progressivement sur la base de promesses tenues. Dans le Cas 2, des décisions incohérentes ont érodé une confiance initialement existante.

Dimension 3 — La transparence comme accessibilité réelle : la transparence ne se réduit pas à la communication d'informations, elle concerne l'accessibilité de l'information et la clarté des processus décisionnels. Dans le Cas 1, les employés rapportent : « Les décisions sont expliquées, on comprend pourquoi. »

Dimension 4 — La reconnaissance comme considération du bien-être : valorisation morale de la personne au-delà de la rémunération. Les employés du Cas 1 témoignent : « On se sent considérés et reconnus, cela motive notre travail. »

Dimension 5 — La cohérence valeurs-actions : alignement observable et constant entre engagements proclamés et pratiques effectives. Dans le Cas 1, cet alignement est perçu comme une norme culturelle internalisée : « Respecter nos promesses n'est pas optionnel, c'est une culture. »

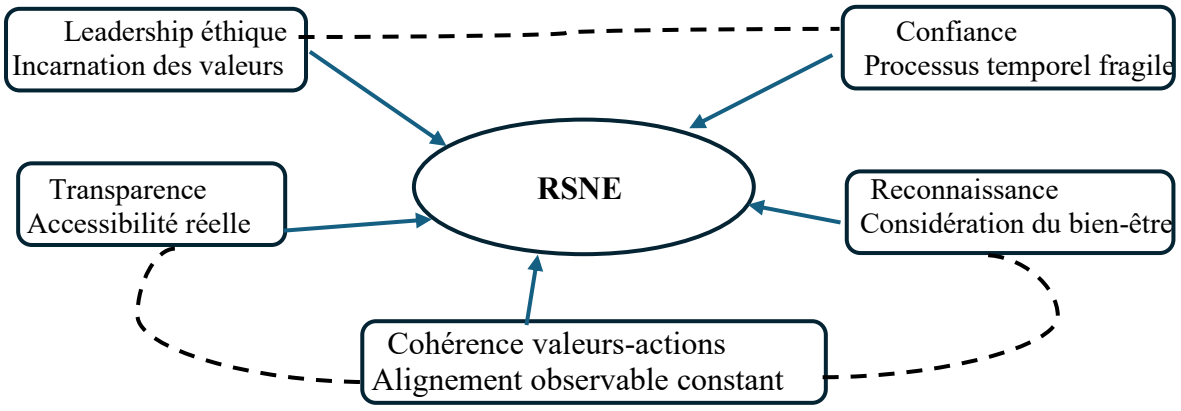


Figure 2 — Modèle processuel des 5 dimensions de la RSNE

4. Discussion et recommandations

4.1 Enrichissement de la théorie du découplage

Les trois configurations empiriques confirment et enrichissent substantiellement la théorie néo-institutionnelle. Le Cas 1 démontre qu'il existe une alternative au découplage : lorsque les normes institutionnelles s'enracinent dans un terreau culturel préalable, elles échappent au découplage. Cette observation confirme la thèse de Zucker (1983) selon laquelle l'institutionnalisation est d'abord un processus cognitif et culturel, et enrichit la perspective de Tolbert et Zucker (1983) en révélant la temporalité critique de ce processus (Tolbert & Zucker, 1983) .

Le Cas 2 confirme empiriquement les trois mécanismes d'isomorphisme institutionnel de DiMaggio et Powell (1983) à l'œuvre dans le secteur textile tunisien. Il illustre également le concept d'hypocrisie organisée de (Brunsson, 1989): les managers affichent des engagements pour satisfaire les parties prenantes externes tout en sachant qu'ils ne pourront pas les mettre en œuvre pleinement. Toutefois, contrairement à Brunsson qui y voit un mécanisme de conservation, (Bromley & Powell, 2012) soulignent que ce découplage génère à long terme un cynisme défensif, confirmé par nos observations.

Le Cas 3 apporte la contribution théorique la plus originale en distinguant le découplage cynique (Cas 2) du découplage contraint (Cas 3). Bromley et Powell (2012) ne distinguent pas l'intentionnalité des acteurs dans leur analyse du découplage, nos résultats révèlent que cette dimension est pourtant déterminante pour comprendre les dynamiques de transformation. Le découplage moyens-fins peut être transitoire : lorsque les intentions managériales sont authentiques et reconnues comme telles par les employés, une trajectoire de transformation devient possible par apprentissage progressif. Cette conclusion enrichit la théorie du découplage d'une perspective temporelle et transformationnelle absente des travaux fondateurs.

4.2 Le leadership éthique comme antidote au découplage

Le leadership émerge comme enrichissement théorique majeur des théories néo-institutionnelles, qui accordent traditionnellement peu d'attention aux acteurs individuels comme vecteurs de modification des logiques institutionnelles. Le Cas 1 illustre un leadership transformationnel (Bass & Stogdill, 1990) : le leader transforme les prescriptions institutionnelles externes en valeurs internes par son exemplarité constante. Cette observation converge avec les travaux de Brown et Treviño (2005) définissant le leadership éthique comme l'association d'un comportement moral et d'une communication morale(Brown et al., 2005).

Notre recherche enrichit cette perspective en montrant que le leadership éthique peut devenir un antidote au découplage : en incarnant les valeurs, le leader crée un environnement où le découplage politique-pratique devient psychologiquement intenable pour les autres acteurs organisationnels. Cette dynamique n'avait pas été théorisée dans le cadre néo-institutionnel classique.

4.3 La culture organisationnelle comme conditionnant préalable

Une découverte majeure concerne le rôle préalable de la culture organisationnelle. Lorsque la responsabilité sociale est ancrée culturellement avant sa formalisation institutionnelle (Cas 1), elle échappe au découplage. À l'inverse, sans cet ancrage préalable (Cas 2 et 3), même des structures formalisées ne garantissent pas l'authenticité. Ces résultats enrichissent les débats structure-culture en révélant une temporalité critique : la culture peut précéder la structure formelle et en conditionner l'efficacité.

Cette observation répond à une critique majeure des approches structuralistes (Mintzberg, 1989) : les investissements structurels (chartes, politiques, processus RSE) ne suffisent pas si un travail de fond sur la culture organisationnelle n'est pas conduit en parallèle. Pour la RSE spécifiquement, cela signifie que l'absence d'ancrage culturel préalable n'est pas définitive, le Cas 3 montre les prémices d'une construction culturelle progressive, mais constitue un défi managérial requérant du temps, des ressources et un engagement soutenu.

4.4 Recommandations managériales

Sur la base de nos résultats, quatre leviers d'action sont recommandés aux entreprises tunisiennes du secteur textile. Premièrement, investir dans le leadership éthique par des programmes de formation ciblés et par la valorisation explicite de l'exemplarité managériale dans les critères d'évaluation et de promotion. Deuxièmement, créer des espaces de dialogue structurés permettant la co-construction de la RSE avec les salariés, en s'inspirant du modèle participatif du Cas 1 où les employés sont associés à la définition des engagements. Troisièmement, pour les entreprises en situation de découplage moyens-fins (Cas 3), prioriser la réallocation des ressources existantes vers les initiatives RSE les plus visibles pour les salariés, afin de renforcer la confiance et d'enclencher un cercle vertueux d'apprentissage. Quatrièmement, engager un travail de fond sur la culture organisationnelle, en intégrant les valeurs RSE dans les pratiques quotidiennes de gestion des ressources humaines(Carlini & France, 2019) , recrutement, formation, évaluation, communication interne.

5. Limites et conclusion

5.1 Limites

Plusieurs limites doivent être soulignées. La portée des résultats reste circonscrite au secteur textile tunisien, limitant la généralisation des conclusions à d'autres secteurs ou contextes nationaux. Le nombre de cas (trois), bien que suffisant pour une étude qualitative interprétativiste, ne permet pas de saisir toutes les variations sectorielles. Les verbatim des salariés reflètent des expériences subjectives pouvant être influencées par des biais de désirabilité sociale. La théorie des parties prenantes (Freeman, 1984) et la théorie de l'autodétermination, qui auraient pu enrichir l'analyse, n'ont pas été intégrées en raison de leur faible émergence inductive dans les données. Enfin, une perspective longitudinale permettrait de vérifier si

les trajectoires de transformation identifiées dans le Cas 3 aboutissent effectivement à un recouplage sincère.

5.2 Conclusion

Cette recherche démontre que la RSE vécue diffère radicalement de la RSE prescrite, selon des configurations organisationnelles, culturelles et économiques spécifiques. Les trois cas révèlent non pas une dichotomie simple entre authenticité et découplage, mais un continuum de formes de responsabilité dont l'intelligibilité requiert une analyse multiniveau (macro, méso, micro) et l'intégration de dimensions émotionnelles, culturelles et intentionnelles.

Le leadership éthique incarné émerge comme facteur de transformation capable de modifier les logiques institutionnelles autrement génératrices de découplage. La possibilité d'une construction culturelle progressive offre une vision moins pessimiste de la RSE : l'authenticité n'est pas un luxe réservé aux grandes organisations bien dotées, mais un horizon atteignable par l'engagement collectif et l'apprentissage organisationnel. En intégrant l'intentionnalité morale et la temporalité des processus organisationnels, cette recherche enrichit les théories néo-institutionnelles et propose aux praticiens un cadre analytique permettant de progresser vers une responsabilité sincère, cohérente et durable.

Au-delà du contexte tunisien, ces résultats ouvrent des perspectives pour l'ensemble des contextes africains et des économies émergentes. Dans des pays comme le Maroc, le Sénégal ou la Côte d'Ivoire, où la RSE s'impose sous l'effet des pressions des multinationales et des donneurs d'ordre internationaux, le risque de découplage politique-pratique (Cas 2) est structurellement élevé. La RSNE offre une alternative ancrée dans les valeurs culturelles locales — solidarité, hospitalité, responsabilité communautaire — qui constituent un socle préexistant pour une responsabilité sincère authentiquement africaine, distincte des modèles importés d'Occident.

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Les déterminants de l'intention d'achat de la mode circulaire dans un contexte de disruptions environnementales et économiques :

une approche intégrative TPB–PMT

Résumé

L'industrie de la mode fait face à des disruptions environnementales et économiques qui fragilisent les modèles de production et de consommation actuels. La mode circulaire constitue une alternative prometteuse, mais son adoption reste limitée. Cet article analyse les déterminants de l'intention d'achat de mode circulaire en combinant la Théorie du Comportement Planifié (TPB) et la Théorie de la Motivation à la Protection (PMT), enrichies par la confiance verte envers la marque et l'efficacité perçue du consommateur. Sur la base d'une enquête menée auprès de 432 consommateurs, les données ont été traitées par analyse factorielle confirmatoire, régressions et tests de modération. Les résultats montrent que l'attitude, le contrôle comportemental perçu, la confiance verte et l'efficacité perçue influencent positivement l'intention d'achat. La vulnérabilité perçue aux disruptions exerce également un effet direct et modère la relation entre confiance verte et intention, renforçant cette dernière lorsque la menace perçue est élevée..

Mots-clés

Mode circulaire ; Intention d'achat ; Confiance verte ; Efficacité perçue du consommateur ; Vulnérabilité perçue ; Théorie du Comportement Planifié ; Théorie de la Motivation à la Protection

1. Introduction

L'industrie de la mode est aujourd'hui confrontée à une intensification des disruptions climatiques, économiques et logistiques qui fragilisent ses chaînes de valeur et interrogent la soutenabilité des modèles dominants de production et de consommation. Les événements climatiques extrêmes, la raréfaction des ressources, les crises énergétiques, les tensions géopolitiques et les perturbations logistiques récurrentes affectent l'accès aux matières premières, la continuité des flux d'approvisionnement et la capacité des entreprises à maintenir leurs engagements environnementaux (WWF, 2017 ; Abdelmeguid, Afy-Shararah & Salonitis, 2024). Dans ce contexte, la mode apparaît particulièrement vulnérable en raison de sa forte dépendance à des chaînes d'approvisionnement mondialisées et à des ressources naturelles intensives.

Face à ces pressions multiples, la mode circulaire est de plus en plus présentée comme une réponse stratégique aux limites du modèle linéaire traditionnel. Fondée sur des pratiques telles que l'upcycling, le recyclage, la réparation, le réemploi et la seconde main, elle vise à prolonger la durée de vie des produits, à réduire la dépendance aux ressources vierges et à limiter les externalités environnementales négatives (Charnley, Lemon & Evans, 2011 ; Molazadeh, Samandar Ali Eshtehardi & Hafezi, 2024). En théorie, ces pratiques offrent une double promesse : contribuer à la résilience du secteur face aux disruptions et répondre aux attentes croissantes des consommateurs en matière de responsabilité environnementale. Pourtant, malgré une sensibilisation accrue, l'adoption effective de la mode circulaire par les

consommateurs demeure limitée. La littérature souligne l'existence d'un écart persistant entre intentions déclarées et comportements effectifs, souvent qualifié d'« attitude–behavior gap » (Hong et al., 2024). Cet « intention–action gap » s'explique par une combinaison de freins cognitifs, psychologiques, sociaux et économiques : compréhension incomplète des principes de l'économie circulaire, perceptions négatives liées à la qualité ou à l'hygiène des produits de seconde main, stigmatisation sociale, contraintes budgétaires, accessibilité limitée de l'offre, et incertitudes quant à la crédibilité des engagements environnementaux des marques (Rizos et al., 2016 ; Hugo, de Nadae & Lima, 2023).

Sur le plan théorique, la recherche mobilise principalement des cadres issus de la psychologie sociale pour expliquer la consommation durable. La Théorie du Comportement Planifié (TPB) d'Ajzen (1991) met en évidence le rôle de l'attitude, des normes subjectives et du contrôle comportemental perçu dans la formation de l'intention d'achat. Elle a démontré sa pertinence dans de nombreux contextes de consommation verte, y compris dans la mode durable (Paul, Modi & Patel, 2016 ; Hong et al., 2024). Toutefois, la TPB se concentre essentiellement sur des déterminants cognitifs et intentionnels et intègre plus difficilement les perceptions de menace liées à un environnement instable ainsi que les dynamiques de confiance envers les organisations, dimensions particulièrement saillantes en contexte de disruptions.

La Théorie de la Motivation à la Protection (PMT), initialement développée par Rogers (1975), offre un éclairage complémentaire en soulignant le rôle de la perception de menace et de la vulnérabilité perçue comme moteurs de comportements de protection. Appliquée au champ de la consommation durable, elle suggère que les individus sont davantage enclins à adopter des comportements responsables lorsqu'ils se sentent personnellement exposés aux conséquences négatives des disruptions environnementales ou économiques (Bockarjova & Steg, 2014). Néanmoins, la PMT est encore peu mobilisée pour analyser les mécanismes par lesquels les consommateurs évaluent la crédibilité et la fiabilité des solutions proposées, alors même que les marchés de la mode circulaire sont marqués par une asymétrie informationnelle importante.

Dans cette perspective, deux variables apparaissent particulièrement pertinentes pour enrichir l'analyse de l'intention d'achat de mode circulaire. La première est la confiance verte envers la marque, définie comme la volonté du consommateur de se fier à une marque sur la base de croyances ou d'attentes liées à sa crédibilité, sa bienveillance et sa capacité à tenir ses promesses environnementales (Chen, 2010). Cette conceptualisation a été reprise et approfondie dans des travaux ultérieurs examinant son rôle dans la formation de l'intention d'achat verte (Chen & Chang, 2012, 2013). Dans un contexte de disruptions et d'incertitude accrue, la confiance verte peut jouer un rôle central en réduisant le risque perçu associé aux produits circulaires et en facilitant l'engagement du consommateur. La seconde variable est l'efficacité perçue du consommateur, qui renvoie à la croyance selon laquelle les choix de consommation individuels peuvent contribuer de manière significative à la résolution des problèmes environnementaux (Ellen, Wiener & Cobb-Walgren, 1991). Ce sentiment d'efficacité peut conditionner la transformation d'une attitude favorable en une intention d'achat concrète, notamment lorsque les enjeux environnementaux sont perçus comme massifs et potentiellement décourageants.

C'est dans ce cadre que s'inscrit le présent article. Il vise à examiner les déterminants de l'intention d'achat de mode circulaire en articulant les apports de la TPB et de la PMT, enrichis par l'intégration de la confiance verte envers la marque et de l'efficacité perçue du

consommateur. Plus précisément, il cherche à comprendre dans quelle mesure la confiance verte et l'efficacité perçue influencent l'intention d'achat de mode circulaire, et comment la vulnérabilité perçue aux disruptions intervient dans ces relations. Un modèle conceptuel intégratif est proposé et testé empiriquement. La suite de l'article est structurée comme suit : la section 2 présente la revue de littérature et les fondements théoriques, la section 3 décrit la méthodologie, puis les sections 4 et 5 exposent respectivement les résultats et leur discussion.

2. Revue de littérature

2.1. La mode circulaire face aux enjeux de durabilité et de disruption

L'économie circulaire s'est progressivement imposée comme une alternative au modèle linéaire dominant « extraire–produire–jeter », en proposant une reconfiguration des systèmes de production et de consommation autour de la réduction des déchets, de la réutilisation des ressources et de l'allongement des cycles de vie des produits (Ellen MacArthur Foundation, 2017). Dans le secteur de la mode, cette transition revêt une importance particulière, compte tenu de l'intensité environnementale de l'industrie textile et de sa forte exposition aux disruptions climatiques, économiques et logistiques.

Appliquée à la mode, la logique circulaire se décline à travers un ensemble de pratiques complémentaires, telles que l'upcycling, le recyclage des fibres textiles, la réparation, la revente et les marchés de seconde main, ainsi que les modèles de location ou de partage (Charnley, Lemon & Evans, 2011). Des revues systématiques récentes confirment la diversité de ces pratiques et leur potentiel de transformation du secteur (Faludi, 2025 ; Molazadeh et al., 2024). Ces pratiques visent non seulement à réduire la pression exercée sur les ressources naturelles, mais également à renforcer la résilience du secteur face aux perturbations des chaînes d'approvisionnement mondialisées.

Malgré ces promesses, la diffusion de la mode circulaire reste limitée. De nombreuses études mettent en évidence des résistances persistantes du côté des consommateurs, liées à des perceptions négatives de la qualité, de l'hygiène ou de la durabilité des produits circulaires, en particulier lorsqu'il s'agit de vêtements de seconde main ou recyclés (Rizos et al., 2016). À ces freins s'ajoutent des contraintes économiques, une accessibilité parfois réduite de l'offre, ainsi qu'une méconnaissance des principes et des bénéfices de l'économie circulaire. Des études récentes menées dans différents contextes géographiques corroborent ces constats. Hugo, de Nadae et Lima (2023) montrent que les jeunes consommateurs brésiliens, bien que favorables à la mode circulaire, s'engagent rarement dans des pratiques concrètes.

Ces obstacles contribuent à alimenter un écart durable entre les attitudes favorables à la consommation responsable et les comportements d'achat effectifs. Cet « intention–action gap » constitue l'un des défis majeurs de la littérature sur la consommation durable et invite à dépasser les approches purement attitudinales pour intégrer des facteurs contextuels, relationnels et motivationnels

2.2. La Théorie du Comportement Planifié et la consommation durable

La Théorie du Comportement Planifié (TPB), proposée par Ajzen (1991), constitue l'un des cadres théoriques les plus mobilisés pour expliquer les comportements de consommation durable. Elle postule que l'intention comportementale représente le déterminant immédiat du comportement et qu'elle est façonnée par trois antécédents principaux : l'attitude envers le comportement, les normes subjectives et le contrôle comportemental perçu.

Dans le contexte de la consommation responsable, l'attitude reflète l'évaluation globale que le consommateur porte sur l'achat de produits durables, en fonction des bénéfices environnementaux, sociaux ou symboliques qu'il anticipe. De nombreuses recherches ont confirmé le rôle central de cette variable dans la formation de l'intention d'achat de produits verts, y compris dans le secteur de la mode (Paul, Modi & Patel, 2016). Des études récentes confirment la robustesse de ce cadre théorique dans le contexte spécifique de la mode circulaire (von der Assen & Schellhaas, 2025).

Le contrôle comportemental perçu renvoie à la perception qu'a l'individu de sa capacité à adopter le comportement, compte tenu des ressources, des compétences et des opportunités dont il dispose (Ajzen, 2002). Dans le cas de la mode circulaire, ce contrôle peut être influencé par l'accessibilité des plateformes de revente ou de location, la compréhension des labels environnementaux, la familiarité avec les circuits alternatifs ou encore la perception du prix comme abordable. Lorsque le consommateur estime que l'achat de mode circulaire est faisable et sous son contrôle, son intention d'achat s'en trouve renforcée.

Si la TPB a démontré sa robustesse empirique, elle présente néanmoins certaines limites dans des contextes caractérisés par une forte incertitude. En particulier, elle intègre difficilement les perceptions de menace liées aux disruptions environnementales ou économiques, ainsi que les mécanismes de confiance envers les organisations, pourtant essentiels dans des marchés marqués par une forte asymétrie informationnelle.

2.3. La Théorie de la Motivation à la Protection et la perception de vulnérabilité

La Théorie de la Motivation à la Protection (PMT), développée par Rogers (1975), offre un cadre complémentaire pour analyser les comportements adoptés en réponse à une menace perçue. Elle repose sur l'idée que les individus évaluent, d'une part, la sévérité et la vulnérabilité associées à une menace, et d'autre part, l'efficacité des réponses disponibles et leur propre capacité à les mettre en œuvre.

Dans le champ de la consommation durable, la PMT permet de comprendre comment les perceptions de menace environnementale ou économique peuvent activer des comportements orientés vers la protection. Plusieurs études ont montré que la vulnérabilité perçue aux conséquences du changement climatique ou aux disruptions systémiques influence positivement l'adoption de comportements pro-environnementaux (Bockarjova & Steg, 2014 ; Kim, Jeong & Hwang, 2013).

Appliquée à la mode, cette perspective suggère que les consommateurs qui se sentent personnellement exposés aux perturbations climatiques, aux pénuries de ressources ou à l'instabilité des chaînes d'approvisionnement peuvent être davantage enclins à adopter des modes de consommation perçus comme plus résilients, tels que la mode circulaire. Toutefois, la PMT reste peu mobilisée pour analyser le rôle des acteurs de marché et des signaux organisationnels dans la crédibilité perçue des solutions proposées.

2.4. La confiance verte envers la marque

La confiance constitue un concept central en marketing relationnel et renvoie à la volonté de se rendre vulnérable aux actions d'un partenaire sur la base de l'attente qu'il agira de manière fiable et bienveillante (Mayer, Davis & Schoorman, 1995). Dans le contexte de la consommation durable, la confiance verte envers la marque désigne la volonté du consommateur de se fier à un produit, un service ou une marque sur la base de croyances ou d'attentes découlant de sa crédibilité, de sa bienveillance et de sa capacité à tenir ses promesses

environnementales (Chen, 2010). Cette conceptualisation a été reprise et enrichie dans des travaux ultérieurs examinant son rôle dans la formation de l'intention d'achat verte (Chen & Chang, 2012, 2013).

Dans le domaine de la mode circulaire, cette confiance joue un rôle particulièrement important. Les consommateurs ne disposent généralement pas des informations nécessaires pour vérifier directement l'origine des matériaux, les procédés de recyclage ou les conditions de production. Ils doivent donc se fier aux signaux émis par les marques, tels que les certifications, la transparence des informations fournies ou la cohérence entre discours et pratiques. Une confiance verte élevée permet de réduire le risque perçu et de renforcer l'intention d'achat, tandis que le greenwashing perçu peut au contraire éroder cette confiance (Chen & Chang, 2013). Des recherches récentes confirment l'importance de la confiance verte dans le secteur de la mode durable. Liu, Bernardoni et Wang (2023) montrent que la valeur perçue, dont la confiance constitue une composante essentielle, influence significativement l'intention de participation aux plateformes de revente de mode chez la Génération Z.

2.5. L'efficacité perçue du consommateur

L'efficacité perçue du consommateur (perceived consumer effectiveness) renvoie à la croyance selon laquelle les actions individuelles de consommation peuvent contribuer de manière significative à la résolution des problèmes environnementaux (Ellen, Wiener & Cobb-Walgren, 1991). Contrairement au contrôle comportemental perçu, qui porte sur la capacité à agir, le PCE concerne l'impact perçu de l'action.

Dans le contexte de la mode durable, ce sentiment d'efficacité peut jouer un rôle déterminant. Face à l'ampleur des défis environnementaux associés à l'industrie textile, certains consommateurs peuvent éprouver un sentiment d'impuissance, estimant que leurs choix individuels ont un impact négligeable. À l'inverse, les consommateurs convaincus que leurs achats contribuent à un changement collectif sont plus susceptibles de traduire leurs attitudes favorables en intentions d'achat concrètes (Roberts, 1996 ; Vermeir & Verbeke, 2006).

2.6. Vers un cadre conceptuel intégratif

La revue de littérature met en évidence la complémentarité des cadres théoriques mobilisés. La TPB permet de saisir les déterminants cognitifs et intentionnels de l'achat de mode circulaire, tandis que la PMT éclaire le rôle de la vulnérabilité perçue dans un contexte de disruptions. La confiance verte envers la marque et l'efficacité perçue du consommateur introduisent quant à elles des dimensions relationnelles et motivationnelles essentielles pour comprendre la conversion des intentions en décisions d'achat.

C'est sur la base de cette articulation théorique qu'est développé le modèle conceptuel proposé dans cette recherche, visant à analyser conjointement ces différents déterminants de l'intention d'achat de mode circulaire.

2.7. Développement des hypothèses

Le cadre conceptuel présenté dans la section précédente conduit à formuler six hypothèses articulant les déterminants classiques de la Théorie du Comportement Planifié (TPB), les apports de la Théorie de la Motivation à la Protection (PMT) en matière de vulnérabilité perçue, ainsi que deux variables complémentaires : la confiance verte envers la marque et l’efficacité perçue du consommateur. Ces hypothèses portent sur les effets directs des variables explicatives sur l’intention d’achat de mode circulaire, ainsi que sur l’effet modérateur de la vulnérabilité perçue dans la relation entre confiance verte et intention.

2.7.1. Attitude et intention d'achat

Selon la TPB, l'attitude à l'égard d'un comportement constitue l'un des prédicteurs les plus robustes de l'intention comportementale. Elle reflète l'évaluation globale que l'individu porte sur l'adoption de ce comportement, évaluation construite à partir des croyances relatives aux conséquences attendues et de la valeur accordée à ces conséquences (Ajzen, 1991). Dans le contexte de la mode circulaire, une attitude favorable peut découler de la conviction que l'achat de produits upcyclés, recyclés ou de seconde main contribue à la préservation de l'environnement, du sentiment de cohérence avec ses valeurs, ou encore de l'attrait pour l'originalité et l'authenticité associées à des pièces uniques ou vintage.

La relation positive entre attitude et intention est largement confirmée dans les études sur la consommation durable. Paul, Modi et Patel (2016) montrent notamment que l'attitude envers les produits verts demeure un déterminant central de l'intention d'achat.

H1 : L'attitude favorable envers la mode circulaire influence positivement l'intention d'achat de produits de mode circulaire.

2.7.2. Contrôle comportemental perçu et intention d'achat

Le contrôle comportemental perçu renvoie à la perception qu'a l'individu de sa capacité à réaliser un comportement donné, compte tenu des ressources, des compétences et des opportunités dont il dispose (Ajzen, 2002). Lorsqu'un individu estime qu'il maîtrise les conditions nécessaires à la réalisation d'un comportement, son intention de l'adopter s'en trouve renforcée.

Dans le cas de la mode circulaire, le contrôle comportemental perçu peut être influencé par l'accessibilité de l'offre, la capacité à évaluer la qualité d'articles de seconde main ou upcyclés, la familiarité avec les plateformes de revente ou de location, ainsi que la perception du rapport qualité-prix.

H2 : Le contrôle comportemental perçu influence positivement l'intention d'achat de produits de mode circulaire.

2.7.3. Confiance verte envers la marque et intention d'achat

Au-delà des déterminants classiques de la TPB, nous postulons que la confiance verte envers la marque constitue un prédicteur direct de l'intention d'achat de mode circulaire. La confiance verte est généralement définie comme la volonté du consommateur de se fier à une marque sur la base de ses croyances quant à sa fiabilité, sa bienveillance et sa capacité à tenir ses promesses environnementales (Chen, 2010).

Dans un contexte d'asymétrie d'information, où les allégations environnementales ne peuvent pas toujours être vérifiées et où le risque de greenwashing est présent, la confiance verte joue un rôle de signal en réduisant l'incertitude et le risque perçu. Chen et Chang (2012) montrent que la confiance verte influence positivement l'intention d'achat de produits verts, notamment via la réduction du risque perçu et l'augmentation de la valeur perçue ; Chen et Chang (2013) soulignent par ailleurs l'importance de la confiance verte dans des contextes marqués par la confusion et le risque liés aux communications environnementales.

H3 : La confiance verte envers la marque influence positivement l'intention d'achat de produits de mode circulaire.

2.7.4. Efficacité perçue du consommateur et intention d'achat

L'efficacité perçue du consommateur (perceived consumer effectiveness) désigne la croyance selon laquelle ses actions de consommation peuvent contribuer de manière significative à la résolution des problèmes environnementaux (Ellen, Wiener & Cobb-Walgren, 1991). Ce construit se distingue du contrôle comportemental perçu par sa focalisation sur l'impact plutôt que sur la capacité : un consommateur peut se sentir capable d'acheter un vêtement de seconde main tout en doutant que cet achat contribue réellement à réduire l'empreinte environnementale de la mode.

Cette dimension est centrale en consommation durable, où le sentiment d'impuissance face à l'ampleur des enjeux peut freiner le passage de l'attitude à l'action. Les travaux sur les consommateurs « verts » suggèrent que la croyance dans l'efficacité de ses choix individuels soutient l'engagement dans des comportements responsables (Roberts, 1996 ; Vermeir & Verbeke, 2006).

H4 : L'efficacité perçue du consommateur influence positivement l'intention d'achat de produits de mode circulaire.

2.7.5. Vulnérabilité perçue aux disruptions et intention d'achat

La vulnérabilité perçue constitue un construit central de la PMT : elle renvoie à la perception d'être personnellement exposé aux conséquences négatives d'un risque ou d'une menace (Rogers, 1975). Dans le contexte étudié, cette menace peut être associée à des disruptions environnementales, économiques ou logistiques affectant la disponibilité des ressources, la stabilité des prix ou la continuité des chaînes d'approvisionnement.

Selon la PMT, un niveau élevé de vulnérabilité perçue active des mécanismes de protection susceptibles de se traduire par l'adoption de comportements perçus comme plus soutenables ou résilients. Des travaux mobilisant la PMT montrent que la vulnérabilité perçue contribue à expliquer l'adoption de comportements pro-environnementaux (Bockarjova & Steg, 2014).

H5 : La vulnérabilité perçue aux disruptions influence positivement l'intention d'achat de produits de mode circulaire.

2.7.6. Effet modérateur de la vulnérabilité perçue

Au-delà de son effet direct, nous postulons que la vulnérabilité perçue exerce un effet modérateur sur la relation entre confiance verte et intention d'achat. Lorsque la menace perçue est faible, la confiance verte peut constituer un critère parmi d'autres (prix, esthétique, commodité). En revanche, lorsque la menace perçue est élevée, la réduction de l'incertitude devient centrale : les signaux de fiabilité et de crédibilité devraient alors peser davantage dans la décision d'achat. La vulnérabilité perçue est ainsi susceptible d'amplifier l'effet de la confiance verte sur l'intention.

H6 : La vulnérabilité perçue aux disruptions modère positivement la relation entre confiance verte envers la marque et intention d'achat. Plus la vulnérabilité perçue est élevée, plus l'effet de la confiance verte sur l'intention est fort.

3. Méthodologie

3.1. Design de recherche et collecte des données

Cette recherche adopte un design quantitatif de type explicatif, visant à tester empiriquement un modèle conceptuel intégrant des variables issues de la Théorie du Comportement Planifié et de la Théorie de la Motivation à la Protection. Ce choix méthodologique est cohérent avec l'objectif de l'étude, qui consiste à analyser les relations entre plusieurs construits latents et à examiner leurs effets directs et modérateurs sur l'intention d'achat de mode circulaire.

La collecte des données a été réalisée à l'aide d'un questionnaire auto-administré, diffusé en ligne. Le recours à une enquête par questionnaire se justifie par la nature des variables étudiées, qui relèvent de perceptions, d'attitudes et de croyances individuelles difficilement observables par des méthodes qualitatives ou expérimentales à grande échelle (Podsakoff et al., 2003). Ce mode de collecte est largement utilisé dans la littérature sur la consommation durable et permet de recueillir un volume de données suffisant pour l'estimation de modèles multivariés.

Avant le lancement de l'enquête principale, un prétest du questionnaire a été réalisé auprès d'un échantillon restreint de répondants afin de vérifier la clarté des items, la fluidité du

questionnaire et le temps de réponse. Ce prétest a permis d'apporter des ajustements mineurs à la formulation de certains items, sans modifier le contenu conceptuel des échelles.

3.2. Échantillon

L'enquête a été menée auprès de 432 répondants. Bien que l'échantillon repose sur une méthode de convenance, cette approche est couramment utilisée dans les recherches en comportement du consommateur et demeure pertinente lorsque l'objectif est d'examiner les relations entre construits plutôt que d'estimer des paramètres populationnels (Hair et al., 2019). La diversité des profils recueillis contribue à renforcer la validité externe des résultats, tout en invitant à la prudence quant à leur généralisation.

3.3. Mesures et échelles

Les construits du modèle ont été mesurés à l'aide d'échelles multi-items validées dans la littérature antérieure, largement mobilisées dans les recherches sur la consommation durable et les comportements pro-environnementaux. L'ensemble des items a été évalué à l'aide d'une échelle de Likert en cinq points, allant de 1 (« Pas du tout d'accord ») à 5 (« Tout à fait d'accord »), conformément aux recommandations méthodologiques pour les enquêtes auto-administrées (Hair et al., 2019).

Le contrôle comportemental perçu a également été mesuré à partir de l'échelle de Paul, Modi et Patel (2016), complétée par les apports conceptuels d'Ajzen (2002). Les quatre items retenus évaluent la perception qu'a le répondant de sa capacité à acheter des vêtements de mode circulaire, en tenant compte des ressources, du temps et des opportunités disponibles.

La confiance verte envers la marque a été mesurée à l'aide de cinq items issus des travaux de Chen (2010) et de Chen et Chang (2012). Cette échelle évalue la crédibilité perçue des engagements environnementaux de la marque, ainsi que la fiabilité et la cohérence de ses pratiques en matière de durabilité. Elle est largement utilisée dans la littérature sur le marketing vert et présente de solides propriétés psychométriques.

L'efficacité perçue du consommateur a été mesurée à partir de l'échelle développée par Ellen, Wiener et Cobb-Walgren (1991) et reprise par Roberts (1996). Les quatre items retenus évaluent la croyance selon laquelle les choix de consommation individuels peuvent contribuer de manière significative à la résolution des problèmes environnementaux. Deux items sont formulés de manière inversée afin de limiter les biais de réponse.

La vulnérabilité perçue aux disruptions environnementales et économiques a été mesurée à l'aide d'une échelle adaptée des travaux de Bockarjova et Steg (2014) et de Kim, Jeong et Hwang (2013). Les items évaluent le sentiment d'exposition personnelle aux conséquences négatives des changements climatiques et des perturbations systémiques.

Enfin, l'intention d'achat de mode circulaire a été mesurée à l'aide de quatre items adaptés de Paul, Modi et Patel (2016), évaluant la probabilité perçue d'acheter des vêtements de mode circulaire dans un avenir proche.

L'ensemble des échelles a fait l'objet d'une procédure de traduction–retraduction (back-translation), afin de garantir l'équivalence sémantique entre les versions originale et française. Le détail des items et de leur adaptation est présenté en annexe.

3.4. Méthode d'analyse des données

Les données collectées ont été analysées en plusieurs étapes, conformément aux recommandations méthodologiques pour l'estimation de modèles intégrant des construits latents et des relations de modération. Les analyses statistiques ont été réalisées à l'aide des logiciels SPSS et AMOS 22.

Une analyse factorielle confirmatoire (AFC) a été réalisée sous AMOS afin de vérifier la validité convergente et discriminante des construits et l'ajustement du modèle de mesure (Hu & Bentler, 1999).

Les hypothèses ont ensuite été testées par régressions. L'effet modérateur de la vulnérabilité perçue a été examiné avec la macro PROCESS (modèle 1), après centrage des variables.

Des erreurs-types robustes (HC3) ont été utilisées afin de tenir compte d'éventuelles hétéroscédasticités. L'interprétation de l'effet modérateur s'est appuyée sur l'analyse des effets conditionnels à différents niveaux de la variable modératrice ainsi que sur la procédure de Johnson–Neyman, permettant d'identifier les zones de significativité de l'interaction (Hayes, 2022).

4. Résultats

4.1. Évaluation du modèle de mesure

La qualité des instruments de mesure a été évaluée à l'aide d'une analyse factorielle confirmatoire (AFC) réalisée sous AMOS 22. Les résultats indiquent un bon ajustement global du modèle de mesure aux données observées (χ^2/ddl = 2,486 ; GFI = 0,894 ; AGFI = 0,867 ; CFI = 0,950 ; TLI = 0,942 ; RMSEA = 0,059 [IC 90 % : 0,053–0,064]), conformément aux seuils recommandés (Hu & Bentler, 1999).

L'ensemble des contributions factorielles standardisées est statistiquement significatif ($p < 0,001$) et dépasse le seuil de 0,70, indiquant une relation substantielle entre les items et leurs construits latents respectifs. La fiabilité des construits a été évaluée à l'aide de l'alpha de Cronbach et du rho de Jöreskog (ρJ), indice de fiabilité composite particulièrement adapté aux modèles fondés sur l'AFC. Les valeurs obtenues sont toutes supérieures au seuil recommandé de 0,70, attestant d'une cohérence interne satisfaisante. Par ailleurs, les valeurs de la variance moyenne extraite (AVE) dépassent systématiquement le seuil de 0,50, confirmant la validité convergente des mesures (Hair et al., 2019).

Tableau 1 – Fiabilité et validité convergente des construits

Construit	**α**	**ρJ**	**AVE**	**Items**
Attitude (ATT)	0,89	0,91	0,71	4
Contrôle comportemental perçu (CCP)	0,88	0,88	0,64	4
Efficacité perçue du consommateur (PCE)	0,82	0,89	0,65	4
Confiance verte envers la marque (GBT)	0,91	0,92	0,66	5
Vulnérabilité perçue (VUL)	0,89	0,90	0,68	4
Intention d'achat (INT)	0,88	0,89	0,64	4

Note : Seuils recommandés : α > 0,70 ; ρJ > 0,70 ; AVE > 0,50 (Hair et al., 2019)

La validité discriminante est confirmée par le fait qu'aucune corrélation inter-construits n'atteint le seuil critique de 0,85 (Kline, 2016). La corrélation la plus élevée (r = 0,750) est observée entre PCE et INT. Ces résultats indiquent que le modèle de mesure présente des propriétés psychométriques adéquates et peut être retenu pour l'estimation du modèle structurel.

4.2. Test des hypothèses

4.2.1. Test des effets directs (modèle structurel – AMOS)

Les hypothèses relatives aux effets directs (H1 à H5) ont été testées à l'aide du modèle structurel sous AMOS 22. Les indices d'ajustement sont satisfaisants : $\chi^2/ddl = 2,486$; GFI = 0,894 ; CFI = 0,950 ; TLI = 0,942 ; RMSEA = 0,059. Le modèle explique 74,1 % de la variance de l'intention d'achat ($R^2 = 0,741$).

Tableau 2 – Résultats du modèle structurel (AMOS)

Hypothèse	β	B	C.R.	p	Décision
H1 : ATT → INT	0,165	0,256	3,064	0,002	Supportée
H2 : CCP → INT	0,229	0,352	5,381	< 0,001	Supportée
H3 : GBT → INT	0,202	0,209	4,734	< 0,001	Supportée
H4 : PCE → INT	0,328	0,412	5,650	< 0,001	Supportée
H5 : VUL → INT	0,192	0,254	4,105	< 0,001	Supportée

Note : β = coefficient standardisé ; B = coefficient non standardisé ; C.R. = Critical Ratio ; $R^2 = 0,741$

L'ensemble des hypothèses relatives aux effets directs est supporté. L'efficacité perçue du consommateur constitue le prédicteur le plus fort (β = 0,328), suivie du contrôle comportemental perçu (β = 0,229), de la confiance verte (β = 0,202), de la vulnérabilité perçue (β = 0,192) et de l'attitude (β = 0,165).

4.2.2. Test de l'effet modérateur (PROCESS – Hayes)

L'hypothèse H6 a été testée à l'aide du modèle 1 de la macro PROCESS (Hayes, 2022). Le modèle inclut la confiance verte (GBT) comme variable indépendante, la vulnérabilité perçue (VUL) comme modérateur, et l'intention (INT) comme variable dépendante. Les variables ont été centrées et des erreurs-types robustes (HC3) ont été utilisées.

Tableau 3 – Analyse de modération (PROCESS)

Variable	Coefficient	SE	t	p	IC 95 %
Constante	3,477	0,048	72,085	< 0,001	[3,382 ; 3,571]
GBT	0,393	0,048	8,191	< 0,001	[0,299 ; 0,487]
VUL	0,439	0,053	8,220	< 0,001	[0,334 ; 0,543]
GBT × VUL	0,088	0,044	2,017	0,044	[0,002 ; 0,173]

Note : $R^2 = 0,463$; ΔR^2 (interaction) = 0,008 ; $F(3, 428) = 122,287$; $p < 0,001$

Le terme d'interaction est positif et significatif (b = 0,088 ; p = 0,044), confirmant l'effet modérateur de la vulnérabilité perçue. L'effet de la confiance verte sur l'intention s'intensifie avec le niveau de vulnérabilité : à faible niveau (–1 ET), b = 0,304 ; à niveau moyen, b = 0,393 ; à niveau élevé (+1 ET), b = 0,481. L'analyse Johnson-Neyman indique que l'effet est significatif pour 99,3 % de l'échantillon.

Tableau 4 – Effets conditionnels de GBT sur INT

Niveau de VUL	Effet	SE	t	p	IC 95 %
Faible (–1 ET)	0,304	0,051	6,019	< 0,001	[0,205 ; 0,403]
Moyen	0,393	0,048	8,191	< 0,001	[0,299 ; 0,487]
Élevé (+1 ET)	0,481	0,077	6,258	< 0,001	[0,330 ; 0,633]

Note : ET = écart-type

5. Discussion

Cette recherche visait à analyser les déterminants de l'intention d'achat de mode circulaire dans un contexte marqué par des disruptions environnementales et économiques croissantes. En mobilisant conjointement la Théorie du Comportement Planifié (TPB) et la Théorie de la Motivation à la Protection (PMT), enrichies par l'intégration de la confiance verte envers la marque et de l'efficacité perçue du consommateur, l'étude apporte un éclairage nuancé sur les mécanismes psychologiques et relationnels qui sous-tendent les décisions de consommation circulaire.

Les résultats confirment tout d'abord la pertinence des déterminants classiques de la TPB dans l'explication de l'intention d'achat de mode circulaire. Ces résultats convergent avec ceux d'études récentes menées dans différents contextes (von der Assen et Schellhaas, 2025). Conformément aux travaux antérieurs (Ajzen, 1991 ; Paul, Modi & Patel, 2016), l'attitude envers la mode circulaire et le contrôle comportemental perçu exercent des effets positifs et significatifs sur l'intention d'achat. Ces résultats suggèrent que, malgré la spécificité des pratiques circulaires, les évaluations cognitives globales et la perception de faisabilité demeurent des leviers essentiels de l'adoption de comportements de consommation durable.

Au-delà de ces déterminants classiques, les résultats mettent en évidence le rôle central de la confiance verte envers la marque. L'effet positif et significatif observé confirme que, dans le secteur de la mode circulaire, la crédibilité perçue des engagements environnementaux constitue un facteur déterminant de l'intention d'achat. Ce résultat est cohérent avec les travaux de Chen (2010) et Chen et Chang (2012, 2013), qui soulignent que la confiance verte réduit le risque perçu et facilite la prise de décision dans des contextes caractérisés par une forte asymétrie informationnelle. Dans le cas de la mode circulaire, où les consommateurs ne peuvent que rarement vérifier directement l'origine des matériaux ou les processus de production, la confiance accordée à la marque apparaît comme un substitut essentiel à l'information objective.

L'efficacité perçue du consommateur ressort également comme un déterminant significatif de l'intention d'achat. Ce résultat confirme que la croyance en l'impact potentiel des actions individuelles joue un rôle clé dans la transformation d'attitudes favorables en intentions concrètes (Ellen, Wiener & Cobb-Walgren, 1991 ; Roberts, 1996). Face à l'ampleur des défis environnementaux associés à l'industrie textile, les consommateurs peuvent éprouver un sentiment d'impuissance. Les résultats suggèrent que renforcer le sentiment d'efficacité individuelle constitue un levier important pour favoriser l'adoption de pratiques de consommation circulaire.

L'un des apports majeurs de cette recherche réside dans l'intégration de la vulnérabilité perçue aux disruptions comme déterminant direct et comme variable modératrice. Les résultats montrent que la vulnérabilité perçue exerce un effet direct positif sur l'intention d'achat, ce qui corrobore les postulats de la Théorie de la Motivation à la Protection (Rogers, 1975). Les

consommateurs qui se sentent personnellement exposés aux conséquences des disruptions environnementales et économiques semblent davantage enclins à adopter des comportements perçus comme protecteurs ou résilients, tels que l'achat de mode circulaire.

Au-delà de cet effet direct, l'effet modérateur observé met en lumière un mécanisme plus subtil. Les résultats indiquent que l'influence de la confiance verte envers la marque sur l'intention d'achat s'intensifie lorsque le niveau de vulnérabilité perçue est élevé. Autrement dit, dans un contexte de menace perçue accrue, la confiance accordée à la marque devient un levier encore plus déterminant de la décision d'achat. Ce résultat enrichit la littérature existante en montrant que la confiance verte ne constitue pas seulement un déterminant stable de l'intention, mais qu'elle interagit avec les perceptions de menace pour orienter les comportements de consommation. Ce résultat s'inscrit dans une tendance émergente de la littérature qui souligne l'importance des variables contextuelles et situationnelles dans l'explication des comportements de consommation circulaire (Abdelmeguid et al., 2024 ; Faludi, 2025).

Ces résultats contribuent à une meilleure compréhension de la manière dont les consommateurs arbitrent entre risque, confiance et responsabilité individuelle dans un environnement incertain. Ils suggèrent que les modèles explicatifs de la consommation durable gagnent à intégrer simultanément des déterminants cognitifs, motivationnels et relationnels, plutôt que de les considérer de manière isolée. L'articulation de la TPB et de la PMT proposée dans cette recherche apparaît ainsi pertinente pour appréhender la complexité des décisions de consommation circulaire dans un contexte de disruptions systémiques.

5.1. Implications théoriques

Sur le plan théorique, cette recherche contribue à la littérature sur la consommation durable en proposant un cadre intégratif qui dépasse les limites des approches exclusivement cognitives. En combinant la TPB et la PMT, elle met en évidence le rôle conjoint des évaluations rationnelles, des perceptions de menace et des mécanismes de confiance dans la formation de l'intention d'achat.

L'introduction de la vulnérabilité perçue comme variable modératrice constitue un apport particulier, en montrant que les effets de la confiance verte varient en fonction du contexte perçu par le consommateur. Ce résultat invite à considérer la consommation durable non pas comme un comportement stable et décontextualisé, mais comme une réponse adaptative à des environnements perçus comme plus ou moins risqués.

5.2. Implications managériales

D'un point de vue managérial, les résultats soulignent l'importance pour les marques de mode circulaire de construire et de maintenir une confiance environnementale crédible. La transparence, la cohérence entre discours et pratiques, ainsi que la communication claire des engagements environnementaux apparaissent comme des leviers essentiels pour renforcer l'intention d'achat.

Les résultats suggèrent également que les stratégies de communication gagnent à renforcer le sentiment d'efficacité du consommateur, en mettant en évidence l'impact concret des choix individuels. Enfin, dans un contexte de disruptions croissantes, les marques qui parviennent à se positionner comme des acteurs fiables et résilients peuvent bénéficier d'un avantage concurrentiel durable.

5.3. Limites et pistes de recherche futures

Comme toute recherche empirique, cette étude présente certaines limites. Le recours à des données auto-rapportées peut introduire des biais de méthode commune, bien que des précautions aient été prises lors de la conception du questionnaire. De futures recherches pourraient mobiliser des données comportementales ou des approches longitudinales afin de renforcer la validité des résultats.

Par ailleurs, l'étude se concentre sur l'intention d'achat plutôt que sur le comportement effectif. Des recherches futures pourraient mobiliser des mesures comportementales, des approches longitudinales ou expérimentales et intégrer des variables contextuelles afin de mieux comprendre le passage de l'intention à l'action.

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Healthcare Spending on Maternal Health: A Comparative Analysis in Sub-Saharan Africa

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Abstract

Maternal mortality remains one of the most pressing public health and development challenges in Sub-Saharan Africa despite decades of global health interventions and policy reforms. This study investigates the relationship between healthcare expenditure and maternal mortality in selected Sub-Saharan African countries between 2000 and 2014. The study specifically examines whether public and private healthcare expenditures exert different effects on maternal health outcomes. Using panel data analysis, fixed effects and random effects regression models were employed to assess the association between healthcare spending and the number of maternal deaths. Maternal mortality indicators were analyzed alongside public healthcare expenditure and private healthcare expenditure measured as percentages of gross domestic product. Findings reveal that private healthcare expenditure demonstrates a statistically significant negative relationship with maternal mortality, indicating that increased private spending is associated with lower maternal deaths. In contrast, public healthcare expenditure shows a negative but statistically insignificant relationship with maternal mortality. The findings suggest that while increased healthcare financing is essential, the effectiveness, efficiency, and allocation mechanisms of public healthcare systems significantly influence maternal health outcomes. The study further highlights persistent inequalities in healthcare access, governance challenges, weak health infrastructure, shortages of skilled healthcare professionals, and financial barriers facing women in low-income communities. Policy recommendations include strengthening public health governance, improving maternal healthcare infrastructure, increasing accountability in healthcare spending, expanding health insurance systems, regulating private healthcare services, and promoting partnerships between public and private sectors. The study contributes to ongoing debates concerning healthcare financing and gender health equity in developing economies.

Keywords: human capital, gender health equity, healthcare expenditure, maternal mortality, private healthcare, public healthcare, Sub-Saharan Africa.

Introduction

Maternal health remains one of the most significant indicators of a nation's healthcare performance, social development, and economic progress. Across the globe, maternal mortality

has become a central concern within international development agendas because it reflects broader structural inequalities associated with poverty, access to healthcare, gender discrimination, and weak public institutions. In Sub-Saharan Africa, maternal mortality rates continue to be among the highest in the world despite numerous international initiatives, healthcare reforms, and increased development assistance directed toward maternal and child healthcare.

The death of a woman during pregnancy, childbirth, or within forty-two days after delivery has devastating consequences not only for families but also for communities and national development. Maternal mortality affects household income, child survival, educational outcomes, labor productivity, and overall social welfare. Women play critical economic and social roles in African societies, and the loss of mothers often leads to cycles of poverty and social vulnerability. Consequently, improving maternal health outcomes is not only a public health priority but also a critical economic and human rights issue.

According to the World Health Organization (WHO), approximately 295,000 women died during and following pregnancy and childbirth in 2017 globally, with Sub-Saharan Africa accounting for nearly two-thirds of these deaths. Although some progress has been made in reducing maternal mortality since the early 2000s, the pace of improvement has been uneven across countries in the region. Several countries continue to experience severe shortages of skilled birth attendants, inadequate healthcare facilities, poor transportation systems, weak emergency obstetric services, and limited access to essential medicines.

The Sustainable Development Goals (SDGs), particularly SDG 3, emphasize the need to reduce global maternal mortality ratios to less than 70 deaths per 100,000 live births by 2030. Achieving this target requires substantial investment in healthcare systems, improved governance, equitable healthcare access, and sustainable financing mechanisms. However, one of the ongoing debates in health economics concerns the extent to which healthcare spending directly influences health outcomes, especially maternal mortality.

Healthcare financing in Sub-Saharan Africa is characterized by a combination of public expenditure, private expenditure, donor assistance, out-of-pocket payments, and community-based financing schemes. Governments across the region allocate varying proportions of their national budgets to healthcare services. Despite commitments such as the Abuja Declaration of 2001, where African Union countries pledged to allocate at least 15 percent of national budgets to healthcare, many countries have struggled to meet these targets consistently.

Private healthcare expenditure has also grown significantly in the region due to the expansion of private clinics, hospitals, insurance schemes, and pharmaceutical services. In many African countries, private healthcare providers play a substantial role in delivering maternal healthcare services. However, reliance on private healthcare raises concerns regarding affordability, inequality, and access for low-income populations.

The relationship between healthcare expenditure and maternal mortality is complex and multidimensional. Increased healthcare spending does not automatically translate into better health outcomes if resources are poorly managed, misallocated, or affected by corruption and inefficiency. Similarly, the quality of healthcare services, healthcare infrastructure, education levels, cultural practices, and socioeconomic conditions all influence maternal health outcomes.

This study seeks to contribute to the growing body of literature examining healthcare financing and maternal mortality in Sub-Saharan Africa. Specifically, the study investigates whether public healthcare expenditure and private healthcare expenditure have different impacts on maternal mortality outcomes. By analyzing panel data from selected African countries between 2000 and 2014, the study aims to provide empirical evidence that can inform policymakers, healthcare administrators, and development organizations.

The article is organized into several sections. Following the introduction, the study presents the research objectives and significance of the study. A detailed literature review explores theoretical and empirical perspectives concerning healthcare expenditure and maternal mortality. The methodology section explains the research design, data sources, variables, and econometric models used in the analysis. The findings are then presented and interpreted, followed by a comprehensive discussion of policy implications and broader development considerations. Finally, the study concludes with recommendations for policymakers and suggestions for future research.

Research Objectives

The primary objective of this study is to investigate the relationship between healthcare expenditure and maternal mortality in selected Sub-Saharan African countries. The study specifically examines how public and private healthcare expenditures influence maternal health outcomes.

The study seeks to achieve the following objectives:

1. To examine the relationship between public healthcare expenditure and maternal mortality in Sub-Saharan Africa.
2. To assess the relationship between private healthcare expenditure and maternal mortality in Sub-Saharan Africa.
3. To compare the effectiveness of public and private healthcare spending in reducing maternal deaths.
4. To evaluate the broader socioeconomic and institutional factors influencing maternal health outcomes.

5. To provide policy recommendations for improving maternal healthcare financing and reducing maternal mortality.

Significance of the Study

Maternal mortality remains one of the clearest indicators of healthcare inequality between developed and developing countries. This study is significant because it contributes to understanding how healthcare financing structures affect maternal health outcomes in Sub-Saharan Africa. The findings can support governments, international organizations, healthcare practitioners, and policymakers in designing more effective healthcare financing strategies.

The study also contributes to the broader literature on gender health equity and sustainable development. Women's health outcomes are closely tied to social justice, economic participation, and national productivity. By examining maternal mortality through the lens of healthcare expenditure, the study highlights the importance of targeted investments in women's health.

Additionally, the research provides empirical evidence regarding the relative effectiveness of public and private healthcare expenditure. Such evidence is valuable for countries seeking to optimize healthcare budgets under conditions of limited fiscal resources.

Literature Review

Conceptualizing Maternal Health

Maternal health refers to the health of women during pregnancy, childbirth, and the postpartum period. It encompasses access to prenatal care, skilled birth attendance, emergency obstetric services, postnatal care, family planning services, and reproductive healthcare. Maternal mortality occurs when a woman dies from complications related to pregnancy or childbirth.

Maternal mortality is often used as a proxy indicator for the overall performance of healthcare systems. Countries with high maternal mortality rates generally face broader healthcare challenges including weak infrastructure, inadequate healthcare financing, shortages of healthcare professionals, and social inequalities.

The causes of maternal mortality are both direct and indirect. Direct causes include severe bleeding, infections, high blood pressure during pregnancy, complications from delivery, and unsafe abortions. Indirect causes include malnutrition, malaria, HIV/AIDS, anemia, and chronic illnesses exacerbated during pregnancy.

In Sub-Saharan Africa, several structural factors contribute to high maternal mortality rates. These include poverty, low educational attainment, gender inequality, cultural barriers, transportation challenges, and limited access to healthcare facilities.

Healthcare Expenditure and Health Outcomes

Healthcare expenditure refers to the total amount of financial resources allocated to healthcare services within a country. It includes spending by governments, households, private organizations, insurance providers, and international donors.

Health economists have long debated whether increased healthcare spending leads to improved health outcomes. Some scholars argue that higher healthcare expenditure contributes significantly to lower mortality rates, increased life expectancy, and improved healthcare quality. Others contend that healthcare outcomes depend more on efficiency, governance, and institutional quality than on expenditure levels alone.

Public healthcare expenditure refers to government spending on healthcare services funded through taxation, public insurance systems, and government budgets. Public healthcare systems aim to provide universal access to essential healthcare services, particularly for vulnerable populations.

Private healthcare expenditure includes spending by private insurance providers, households, non-governmental organizations, and private healthcare institutions. In many African countries, out-of-pocket healthcare spending constitutes a major component of private healthcare expenditure.

Theoretical Perspectives

Human Capital Theory

Human capital theory suggests that investments in health improve labor productivity, economic growth, and social development. According to this theory, healthcare spending should be viewed as an investment rather than merely a consumption expense. Improved maternal health contributes to healthier families, better child development, and enhanced economic participation among women.

Welfare Economics

Welfare economics emphasizes the role of government intervention in correcting market failures associated with healthcare provision. Because healthcare markets are characterized by information asymmetries, externalities, and inequitable access, governments play a critical role in ensuring equitable healthcare delivery.

Health Production Function Theory

The health production function framework conceptualizes health outcomes as products of multiple inputs including healthcare services, education, nutrition, sanitation, and socioeconomic conditions. According to this perspective, healthcare expenditure alone cannot fully explain maternal health outcomes because broader social determinants also influence health.

Empirical Literature

Several empirical studies have examined the relationship between healthcare expenditure and health outcomes in developing and developed countries.

Anyanwu and Erhijakpor (2009) investigated healthcare expenditure and health outcomes in Africa and found that increased public healthcare spending was associated with improved health indicators including reduced infant mortality and increased life expectancy. However, the study also emphasized the importance of governance quality and institutional effectiveness.

Crémieux, Ouellette, and Pilon (1999) found that healthcare spending positively influenced health outcomes in industrialized countries. Their findings suggested that higher healthcare investments contributed to lower mortality rates and improved healthcare quality.

Heijink, Koolman, and Westert (2013) examined healthcare spending and avoidable mortality across fourteen countries and concluded that increased healthcare spending contributed to reduced mortality rates, although efficiency varied significantly across countries.

Bein et al. (2017) analyzed healthcare spending and health outcomes in East African countries and found that healthcare expenditure had a statistically significant impact on health indicators. However, the effectiveness of expenditure depended on healthcare governance and institutional quality.

Anton and Onofrei (2012) explored healthcare financing systems in Central and Eastern Europe and concluded that countries with stronger public healthcare financing systems generally achieved better health outcomes.

Despite these studies, limited research has focused specifically on maternal mortality and the comparative effects of public versus private healthcare expenditure in Sub-Saharan Africa. This study seeks to address this gap.

Maternal Mortality in Sub-Saharan Africa

Trends and Patterns

Sub-Saharan Africa continues to experience disproportionately high maternal mortality rates compared to other world regions. Although maternal mortality has declined in many African countries over the past two decades, progress remains slow in several low-income countries.

Countries such as Sierra Leone, Chad, Nigeria, and the Central African Republic have historically recorded some of the highest maternal mortality ratios globally. In contrast, countries such as Rwanda, Botswana, and Ethiopia have achieved relatively significant reductions in maternal mortality through healthcare reforms and targeted interventions.

The variation in maternal mortality across African countries reflects differences in healthcare infrastructure, governance, economic development, educational attainment, and healthcare financing.

Major Causes of Maternal Mortality

Hemorrhage

Postpartum hemorrhage remains one of the leading causes of maternal deaths in Sub-Saharan Africa. Limited access to emergency obstetric care and blood transfusion services contributes to high mortality rates.

Hypertensive Disorders

Complications such as preeclampsia and eclampsia contribute significantly to maternal mortality. Early diagnosis and treatment are often limited in rural healthcare facilities.

Infections

Maternal infections during and after childbirth continue to pose major risks, especially in healthcare facilities lacking adequate sanitation and infection control measures.

Unsafe Abortions

Unsafe abortions remain a significant cause of maternal deaths in countries where reproductive healthcare services and family planning options are limited.

HIV/AIDS and Malaria

Sub-Saharan Africa carries a large burden of HIV/AIDS and malaria, both of which contribute indirectly to maternal mortality.

Social Determinants of Maternal Health

Poverty

Poverty limits women’s ability to access healthcare services, transportation, nutritious food, and skilled birth attendance.

Education

Women with higher educational attainment are more likely to access prenatal care, understand health information, and seek skilled medical assistance during childbirth.

Rural-Urban Disparities

Rural communities often experience severe shortages of healthcare facilities and skilled healthcare professionals.

Gender Inequality

Gender inequality limits women's decision-making power regarding healthcare utilization and reproductive choices.

Healthcare Financing in Sub-Saharan Africa

Public Healthcare Financing

Public healthcare systems in Sub-Saharan Africa are primarily financed through government budgets, taxation, and donor assistance. Governments allocate healthcare funds toward hospitals, clinics, healthcare personnel, vaccination programs, maternal healthcare services, and pharmaceutical procurement.

However, many African countries face fiscal constraints that limit healthcare investments. Competing budgetary demands such as infrastructure development, debt servicing, security, and education often reduce available healthcare funding.

Weak public financial management systems further undermine healthcare delivery. Corruption, resource misallocation, and bureaucratic inefficiencies reduce the effectiveness of healthcare spending.

Private Healthcare Financing

Private healthcare expenditure has increased significantly across Sub-Saharan Africa. Private healthcare services are often perceived as more efficient, responsive, and higher quality than public healthcare facilities.

Private healthcare financing includes:

- Out-of-pocket household payments
- Private insurance schemes
- Employer-sponsored healthcare
- Non-governmental organizations
- Faith-based healthcare providers

While private healthcare can improve service delivery and reduce pressure on public healthcare systems, concerns remain regarding affordability and inequality.

International Donor Assistance

International organizations such as the World Health Organization, World Bank, UNICEF, and bilateral donors have provided substantial financial support for maternal healthcare programs in Africa.

Donor-funded initiatives have supported:

- Maternal healthcare infrastructure
- Vaccination programs
- HIV/AIDS interventions
- Skilled birth attendance training
- Family planning programs
- Emergency obstetric services

However, dependence on external funding raises concerns regarding sustainability and domestic healthcare financing capacity.

Methodology

Research Design

This study employs a quantitative research design using panel data analysis to examine the relationship between healthcare expenditure and maternal mortality in selected Sub-Saharan African countries between 2000 and 2014.

Panel data analysis combines cross-sectional and time-series data, enabling researchers to analyze variations across countries and over time. This approach improves the robustness of statistical analysis and helps control for unobserved heterogeneity.

Data Sources

Data for the study were obtained from the World Health Organization Global Health Expenditure Database and related international health databases.

The study utilizes secondary data on:

- Maternal mortality indicators
- Public healthcare expenditure
- Private healthcare expenditure
- Gross domestic product indicators

Variables

Dependent Variable

The dependent variable is the logarithm of the number of maternal deaths (LNMD).

Independent Variables

1. Public Healthcare Expenditure (HEPP) as a percentage of GDP.
2. Private Healthcare Expenditure (HEPT) as a percentage of GDP.

Econometric Models

The study employs both fixed effects and random effects regression models.

Fixed Effects Model

The fixed effects model controls for country-specific characteristics that remain constant over time.

Random Effects Model

The random effects model assumes that country-specific effects are randomly distributed and uncorrelated with explanatory variables.

Hausman Test

The Hausman test was used to determine the most appropriate model between fixed effects and random effects.

Model Specification

The regression model is specified as:

$LNMDit = \beta 0 + \beta 1HEPPit + \beta 2HEPTit + \varepsilon it$

Where:

- LNMD = Logarithm of maternal deaths
- HEPP = Public healthcare expenditure
- HEPT = Private healthcare expenditure
- ε = Error term

Ethical Considerations

The study relies exclusively on secondary data obtained from publicly available international databases. Consequently, no direct human subjects were involved.

Results

Descriptive Analysis

The analysis indicates considerable variation in healthcare expenditure and maternal mortality across the selected countries. Countries with relatively higher healthcare expenditure generally exhibited lower maternal mortality levels.

Private healthcare expenditure represented a substantial proportion of total healthcare financing in many countries, reflecting the increasing role of private healthcare providers in maternal healthcare delivery.

Regression Results

Table 1: Healthcare Expenditure and Maternal Deaths

Variables	**Panel A: HEPP and LNMD**	**Panel B: HEPT and LNMD**
	Random Effects	Random Effects
HEPP	-0.0356	---
	[0.0218]	---
HEPT	---	-0.0871**
	---	[0.014]
Intercept	8.578***	8.793***
	[0.366]	[0.373]
R-squared	0.0238	0.02584
Wald chi2 (1)	2.66	39.07***
Hausman test chi2	0.08	0.09
Prob > chi2	0.7809	0.9741

Note: ***, **, and * represent statistical significance at 1%, 5%, and 10% respectively.

Interpretation of Findings

The results indicate that private healthcare expenditure has a statistically significant negative relationship with maternal mortality. Specifically, an increase in private healthcare expenditure is associated with a reduction in maternal deaths.

This finding suggests that private healthcare providers may offer more responsive and accessible maternal healthcare services in some African countries. Private healthcare facilities may benefit from better equipment, shorter waiting times, and improved service delivery.

In contrast, public healthcare expenditure demonstrates a negative but statistically insignificant relationship with maternal mortality. Although increased public spending appears associated with lower maternal deaths, the effect is weaker and not statistically significant.

The Hausman test results support the use of random effects models in the analysis.

Discussion

Public Healthcare Expenditure and Maternal Mortality

The negative but statistically insignificant relationship between public healthcare expenditure and maternal mortality raises important policy questions. In theory, increased public healthcare spending should improve maternal health outcomes through expanded healthcare access, improved infrastructure, and enhanced healthcare quality.

However, the findings suggest that increased public expenditure alone may not be sufficient to reduce maternal mortality significantly. Several factors may explain this outcome.

Inefficiency in Public Healthcare Systems

Many public healthcare systems in Sub-Saharan Africa face persistent inefficiencies including:

- Poor resource allocation
- Weak procurement systems
- Inadequate healthcare infrastructure
- Corruption and financial leakages
- Shortages of healthcare professionals
- Inadequate monitoring and evaluation systems

Healthcare funds may not always reach frontline healthcare facilities where maternal healthcare services are delivered.

Urban Bias in Healthcare Investments

Public healthcare investments are often concentrated in urban areas, leaving rural populations underserved. Rural women frequently face long travel distances to healthcare facilities and limited access to emergency obstetric care.

Human Resource Constraints

Many African countries experience shortages of skilled healthcare professionals including doctors, nurses, and midwives. Even when healthcare funding increases, insufficient healthcare personnel can limit service delivery.

Governance and Accountability Challenges

Weak governance structures undermine the effectiveness of public healthcare spending. Lack of transparency and accountability reduces healthcare system performance.

Private Healthcare Expenditure and Maternal Mortality

The statistically significant negative relationship between private healthcare expenditure and maternal mortality suggests that private healthcare services may play an important role in improving maternal health outcomes.

Private healthcare providers often offer:

- Faster service delivery
- Better infrastructure
- More flexible service provision
- Improved patient responsiveness
- Greater availability of medicines and supplies

However, reliance on private healthcare expenditure also presents important challenges.

Affordability and Equity Concerns

Private healthcare services are often expensive and inaccessible to low-income households. Out-of-pocket healthcare spending can create catastrophic financial burdens for families.

Women from poor households may delay seeking healthcare services due to financial constraints, increasing the risk of complications during pregnancy and childbirth.

Unequal Access to Healthcare

The expansion of private healthcare may contribute to healthcare inequality if high-quality services are concentrated among wealthier populations.

Regulation and Quality Control

Weak regulatory frameworks can undermine the quality and safety of private healthcare services.

Maternal Health and Gender Equity

Maternal mortality reflects broader patterns of gender inequality in African societies. Women often face barriers related to education, employment, healthcare access, and decision-making autonomy.

Improving maternal health requires addressing social determinants such as:

- Female education

- Economic empowerment
- Reproductive rights
- Gender-based violence
- Cultural norms

Women's empowerment is closely linked to improved maternal healthcare utilization and better health outcomes.

Healthcare Infrastructure and Service Delivery

Healthcare infrastructure remains a major challenge across many African countries. Several healthcare facilities lack:

- Electricity
- Clean water
- Essential medicines
- Surgical equipment
- Ambulance services
- Intensive care facilities

Poor infrastructure limits the capacity of healthcare systems to manage maternal complications effectively.

The Role of International Development Partners

International donors and development organizations continue to play a critical role in supporting maternal healthcare programs in Africa.

Programs funded by international agencies have contributed to:

- Expanded vaccination coverage
- Skilled birth attendance training
- HIV prevention services
- Family planning initiatives
- Emergency obstetric care

However, sustainable improvements in maternal health require stronger domestic healthcare financing systems.

Comparative Analysis Across Selected Countries

Rwanda

Rwanda has emerged as one of Africa's most successful examples of maternal healthcare reform. The country achieved substantial reductions in maternal mortality through community-based health insurance, improved healthcare infrastructure, and strong political commitment.

The government invested heavily in primary healthcare systems, maternal healthcare services, and healthcare worker training. Community health workers played a significant role in promoting prenatal care and institutional deliveries.

Nigeria

Nigeria accounts for a significant proportion of global maternal deaths despite being one of Africa's largest economies. Challenges include:

- Weak healthcare infrastructure
- Regional inequalities
- Low public healthcare spending
- Corruption
- Shortages of skilled birth attendants

Private healthcare providers play a major role in Nigeria's healthcare system, but affordability remains a major barrier.

Ethiopia

Ethiopia achieved notable reductions in maternal mortality through investments in community health extension programs and rural healthcare expansion.

The deployment of health extension workers improved access to maternal healthcare services in rural communities.

South Africa

South Africa has relatively advanced healthcare infrastructure compared to many African countries. However, inequalities between public and private healthcare systems remain substantial.

The private healthcare sector serves a minority of the population but receives a disproportionately large share of healthcare expenditure.

Policy Implications

Strengthening Public Healthcare Systems

Governments should prioritize investments in:

- Primary healthcare infrastructure
- Rural healthcare facilities
- Emergency obstetric care
- Skilled healthcare workforce development
- Maternal healthcare programs

Improved healthcare governance and accountability mechanisms are essential.

Expanding Health Insurance Coverage

Universal health coverage can reduce financial barriers to maternal healthcare services.

Governments should expand:

- National health insurance systems
- Community-based health insurance
- Maternal healthcare subsidies

Public-Private Partnerships

Strategic collaboration between public and private healthcare providers can improve healthcare delivery.

Governments should establish regulatory frameworks that ensure:

- Quality healthcare standards
- Affordable healthcare services
- Equitable healthcare access

Improving Data Systems

Reliable healthcare data systems are essential for effective policy planning and evaluation.

Governments should strengthen:

- Maternal mortality surveillance
- Health information systems
- Monitoring and evaluation frameworks

Investing in Women's Education

Female education is strongly associated with improved maternal health outcomes.

Educated women are more likely to:

- Access prenatal care
- Utilize skilled birth attendance
- Understand healthcare information
- Make informed reproductive decisions

Addressing Rural Healthcare Gaps

Rural healthcare access remains a major challenge across Sub-Saharan Africa.

Governments should improve:

- Rural healthcare infrastructure
- Transportation networks
- Mobile healthcare services
- Rural healthcare staffing incentives

Broader Development Implications

Maternal Health and Economic Development

Maternal health contributes directly to economic productivity and national development.

Healthy mothers are more likely to:

- Participate in the labor force
- Support household income generation
- Invest in children's education
- Contribute to community development

Maternal deaths create significant economic losses through reduced labor productivity and increased healthcare costs.

Maternal Health and Child Survival

Maternal mortality is closely linked to child mortality.

Children who lose their mothers face increased risks of:

- Malnutrition
- School dropout
- Poverty
- Early mortality

Improving maternal healthcare therefore contributes to broader family and community well-being.

Maternal Health and Sustainable Development Goals

Reducing maternal mortality is central to achieving several Sustainable Development Goals including:

- SDG 1: No Poverty
- SDG 3: Good Health and Well-being
- SDG 5: Gender Equality
- SDG 10: Reduced Inequalities

Maternal health improvements contribute to inclusive and sustainable development.

Challenges Limiting Healthcare Financing Effectiveness

Corruption

Corruption remains a major obstacle to healthcare system performance in several African countries. Misappropriation of healthcare funds reduces service quality and limits healthcare access.

Political Instability

Conflict and political instability disrupt healthcare service delivery and weaken healthcare infrastructure.

Countries affected by armed conflict often experience severe maternal healthcare crises.

Brain Drain

The migration of healthcare professionals from Africa to developed countries contributes to shortages of skilled healthcare workers.

Rapid Population Growth

Rapid population growth places additional pressure on already strained healthcare systems.

Economic Constraints

Limited fiscal capacity restricts governments' ability to increase healthcare spending.

Future Directions for Maternal Healthcare in Africa

Digital Health Technologies

Digital technologies can improve maternal healthcare through:

- Telemedicine
- Mobile health applications
- Electronic medical records
- Remote patient monitoring

Mobile phone technologies can enhance prenatal care communication and healthcare awareness.

Community Health Systems

Community-based healthcare models can improve healthcare access in underserved communities.

Community health workers play important roles in:

- Maternal health education
- Prenatal care monitoring
- Referral services
- Postnatal support

Regional Cooperation

African countries can strengthen maternal healthcare through regional collaboration involving:

- Knowledge sharing
- Healthcare worker training
- Pharmaceutical procurement partnerships
- Disease surveillance systems

Increased Domestic Resource Mobilization

Long-term healthcare sustainability requires stronger domestic healthcare financing.

Governments should improve:

- Tax collection systems
- Healthcare budget allocations
- Public financial management systems

Limitations of the Study

Several limitations should be acknowledged.

First, the study relies on secondary data, which may contain measurement inconsistencies across countries.

Second, the analysis focuses primarily on healthcare expenditure and does not fully capture other important determinants of maternal mortality such as education, sanitation, transportation infrastructure, and cultural practices.

Third, the selected time period may not fully reflect recent healthcare reforms and policy changes occurring after 2014.

Future research could incorporate additional socioeconomic variables and examine more recent healthcare expenditure trends.

Recommendations

Based on the findings of the study, the following recommendations are proposed:

1. Governments should increase investments in maternal healthcare infrastructure and services.
2. Public healthcare spending should be accompanied by stronger accountability and monitoring systems.
3. Health insurance coverage should be expanded to reduce financial barriers to maternal healthcare.
4. Rural healthcare systems should receive targeted investments.
5. Governments should strengthen partnerships with private healthcare providers while ensuring affordability and equity.

6. Female education and economic empowerment programs should be prioritized.
7. Healthcare workforce development strategies should address shortages of skilled birth attendants.
8. Maternal healthcare policies should incorporate gender equity considerations.
9. International donor assistance should support sustainable domestic healthcare financing systems.
10. Data collection and maternal mortality surveillance systems should be strengthened.

Conclusion

Maternal mortality remains a critical public health and development challenge in Sub-Saharan Africa. This study examined the relationship between healthcare expenditure and maternal mortality using panel data from selected African countries between 2000 and 2014.

The findings indicate that private healthcare expenditure has a statistically significant negative relationship with maternal mortality, suggesting that increased private healthcare spending contributes to reductions in maternal deaths. In contrast, public healthcare expenditure demonstrated a negative but statistically insignificant relationship with maternal mortality.

These findings underscore the importance of not only increasing healthcare spending but also improving the efficiency, accountability, and quality of healthcare systems. Weak governance, inadequate healthcare infrastructure, shortages of healthcare professionals, and rural healthcare disparities continue to undermine maternal healthcare outcomes in many African countries.

The study further highlights the importance of addressing broader social determinants of maternal health including poverty, education, gender inequality, and healthcare access.

Achieving substantial reductions in maternal mortality will require comprehensive and integrated policy approaches involving governments, healthcare providers, development organizations, and local communities. Investments in healthcare financing must be accompanied by institutional reforms, stronger healthcare governance, expanded insurance coverage, and improved maternal healthcare delivery systems.

Improving maternal health is not only a healthcare objective but also a critical requirement for sustainable economic development, social justice, and gender equity in Sub-Saharan Africa.

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Perceived CSR Inauthenticity and Employee Outcomes in Emerging-Economy SMEs: The Role of Discourse Practice in a Tunisian Manufacturing Context

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Abstract

Corporate Social Responsibility (CSR) has become a strategic necessity for organizations seeking legitimacy and stakeholder trust, yet its effectiveness increasingly depends on perceived authenticity. In resource constrained SMEs operating in emerging economies, discrepancies between proclaimed CSR commitments and actual practices frequently generate perceptions of corporate hypocrisy, which can negatively affect internal stakeholders. This study examines how perceived (in)coherence between CSR discourse and practice operationalized through authenticity indicators (coherence, transparency, and strategic integration) influences employees' advocacy behaviors and retention intentions in a Tunisian manufacturing SME (N=52). Drawing on social identity theory and attribution theory, the research adopts a quantitative dominant sequential explanatory mixed methods design based on an anonymous employee questionnaire. Preliminary findings reveal predominantly negative to moderate perceptions: over 5% rate overall CSR engagement as weak or very weak, nearly half report low personal involvement, approximately 46% perceive low discourse practice alignment (with 30.8% strongly disagreeing), and transparency is judged insufficient by half of respondents. Only about 40% believe CSR enhances organizational reputation, highlighting substantial skepticism. The study contributes micro-level CSR evidence from an under researched North African context, where proximity and limited external accountability may amplify the behavioral consequences of perceived inauthenticity. It offers context sensitive insights for SME managers aiming to align rhetoric with practice and strengthen internal legitimacy in export oriented developing economy settings.

Keywords Perceived CSR authenticity, corporate hypocrisy, Employee advocacy, SME CSR, MENA region / Tunisia.

I. Introduction

In today's global business environment, Corporate Social Responsibility (CSR) has transitioned from a peripheral concern to a strategic imperative for securing organizational legitimacy, stakeholder trust, and long term viability (Gupta and Sharma, 2025; Jamali and Karam, 2018). Yet, the effectiveness of CSR initiatives increasingly hinges on their perceived authenticity. A significant risk emerges when stakeholders perceive a disconnect between an organization's publicly stated CSR commitments and its actual practices a phenomenon often termed corporate hypocrisy (Wagner et al., 2009; Scheidler et al., 2019). Such perceptions can trigger negative attributions, erode trust, and elicit adverse behavioral responses (Miao and Zhou, 2020; Goswami, 2022). While substantial research has examined consumer reactions to CSR hypocrisy, the perceptions of employees internal stakeholders with intimate, firsthand knowledge of organizational practices remain comparatively underexplored (McShane and Cunningham, 2012; Zhao et al., 2020). This gap is particularly acute in small and medium-sized enterprises (SMEs) operating in emerging and developing economies, where formal CSR structures are often rudimentary, resource constraints are severe, and institutional pressures remain weak or inconsistent (Jamali et al., 2017; Torugsa et al., 2012).

This research focuses on the under-researched context of North Africa, positioning

Tunisia as a representative case of an African economy embedded within global dynamics. Tunisian SMEs, especially in export oriented manufacturing sectors, operate at the nexus of stringent global supply chain requirements particularly from European markets and constrained local institutional environments (El Baz et al., 2016; Mostafa and El-Motalib, 2020). In such settings, recurrent discrepancies between official CSR rhetoric and day to day operations can foster perceptions of symbolic compliance or decoupling (Carlos and Lewis, 2018), leading employees to question the genuineness of organizational motives. Drawing on evidence from a Tunisian industrial firm, this study offers insights into how African SMEs navigate global CSR pressures while operating in constrained local contexts (George et al., 2016; Zoogah et al., 2015). The proximity of employees to operational realities and the limited external accountability mechanisms in these settings may amplify the behavioral consequences of perceived inauthenticity (Kostova and Zaheer, 1999).

Although CSR is widely promoted as a lever for attracting, engaging, and retaining employees, organizations face growing skepticism when a mismatch is perceived between proclaimed commitments and actual practices. Prior research confirms that employees CSR perceptions strongly influence their identification, commitment, extra-role behaviors, and turnover intentions (Zhao et al., 2020; Chang et al., 2021; Onkila and Sarna, 2021; Paruzel et al., 2021). However, less is known about how perceived incoherence between CSR discourse and practice undermines key employee outcomes such as advocacy and retention, through which mechanisms these effects operate, and under which conditions these negative effects can be mitigated. Specifically, the role of perceived CSR transparency the extent to which firms openly communicate both achievements and short- comings as a boundary condition remains underexplored (Chang et al., 2021; Lv and Luan, 2025; Jiang et al., 2022).

To address these gaps, the present study investigates the micro-level consequences of perceived CSR inauthenticity within a tunisian manufacturing SME. Grounded in Social Identity Theory (Tajfel and Turner, 1979), which posits that employees derive part of their self-concept from organizational membership, and Attribution Theory (Kelley, 1973; Jones and Davis, 1965), which explains how individuals infer true organizational motives from observed inconsistencies, this research examines the following core relationships:

H1: Perceived incoherence between proclaimed CSR commitments and actual practices (i.e., low perceived CSR authenticity) is negatively associated with employees' advocacy and retention intentions (Lv and Luan, 2025).

H2: Overall perceptions of CSR engagement mediate the negative relationship between perceived incoherence and employee's advocacy and retention intentions (Eldor, 2025).

H3: Perceived CSR transparency moderates this relationship, such that the negative effect of incoherence is attenuated when transparency is high (Social Responsibility Journal, 2025).

The purpose of this paper is accordingly to empirically test these hypotheses within a specific, resource constrained African SME context, thereby providing micro-level evidence on the internal ramifications of CSR (in)authenticity. It answers the research question: To what extent does perceived (in)coherence between CSR discourse and practice influence employee advocacy and retention intentions in a Tunisian manufacturing SME, and how do overall CSR engagement perceptions and perceived transparency shape this relationship?

Our study makes several distinct contributions to the micro-CSR, organizational behavior, and international management literatures. First, it extends the growing body of authenticity-focused CSR research to a context that remains largely absent from mainstream scholarship: Tunisian manufacturing SMEs operating within the MENA region. While the vast majority of extant CSR studies have been conducted in Western, large-firm settings (Zhao et al., 2020; Paruzel et al., 2021), this research responds to repeated calls for more geographically and organizationally diverse evidence (George et al., 2016; Jamali and Karam, 2018; Zoogah et al., 2015), demonstrating that the behavioral consequences of perceived CSR inauthenticity are not confined to developed economy contexts but operate with particular salience in resource-constrained environments characterized by nascent institutional frameworks.Second, the study advances micro-level CSR scholarship by shifting the analytical focus from CSR perception in general to the specific discourse practice gap, operationalized through three authenticity indicators coherence, transparency,

and strategic integration and by tracing its downstream effects on two under-examined employee outcomes: advocacy intentions and retention intentions. While prior research has predominantly examined CSR effects on organizational commitment, job satisfaction, or turnover intentions in isolation (Onkila and Sarna, 2021; Chang et al., 2021), this study jointly investigates advocacy and retention as complementary behavioral manifestations of internal legitimacy, thereby offering a more comprehensive picture of the employee-level consequences of CSR inauthenticity.Third, by integrating Social Identity Theory (Tajfel and Turner, 1979) and Attribution Theory (Kelley, 1973; Jones and Davis, 1965) within a single unified framework, the study provides a theoretically grounded account of the psychological mechanisms through which perceived incoherence translates into behavioral outcomes. Rather than treating these theories as alternative explanations, the research treats them as complementary lenses identity threat on the one hand, and causal inference processes on the other thereby enriching the conceptual architecture available to CSR scholars interested in employee responses to symbolic or decoupled CSR.Fourth, the study contributes methodologically by testing a moderated mediation model in a small-sample, single-firm setting, thereby demonstrating the feasibility and the analytical limits of rigorous hypothesis testing in exploratory emerging-market contexts. The use of bootstrapped mediation analysis (Preacher and Hayes, 2008), heteroscedasticity-robust standard errors (Long and Ervin, 2000), and mean-centered interaction terms (Aiken and West, 1991) reflects a commitment to methodological transparency that is often absent in SME-focused CSR research.Finally, by positioning Tunisia as a representative case of an African economy navigating the tension between global supply chain legitimacy demands and constrained local institutional environments, the study contributes to the broader agenda of bringing African and MENA management contexts into mainstream organizational research (George et al., 2016; Zoogah et al., 2015; Jamali et al., 2017). The findings offer context-sensitive insights for SME managers aiming to align CSR rhetoric with practice, strengthen internal legitimacy, and build sustainable competitive advantage in export-oriented developing economy settings.

II. Theoretical Overview and Hypotheses Formulation

I. Theoretical Overview

This study is grounded in an integrated theoretical framework that synthesizes two complementary perspectives to explain how perceived (in)coherence between Corporate Social Responsibility (CSR) discourse and practice influences employee outcomes in emerging-economy SMEs:

(a) **Social Identity Theory** as a lens for understanding employees self-concept derived from organizational membership.

(b) **Attribution Theory** as a framework for explaining how employees infer organizational motives from observed inconsistencies between words and deeds.

Social Identity Theory posits that individuals derive part of their self-concept from their membership in social groups, including organizations (Tajfel and Turner, 1979). When employees perceive their organization as socially responsible and authentic, it enhances their social identity, leading to stronger organizational identification, commitment, and supportive behaviors (Zhao et al., 2020). Conversely, perceived misalignment between proclaimed CSR values and actual practices can threaten this positive social identity. Employees may disidentify with the organization to protect their self-concept, leading to reduced pride, lower advocacy, and higher turnover intentions (Goswami, 2022). In resource-constrained Tunisian SMEs, where employees have close proximity to operations, this identity threat may be particularly salient when CSR promises are perceived as inauthentic or hypocritical (George et al., 2016).Attribution Theory explains how individuals interpret the causes of behavior (Kelley, 1973; Jones and Davis, 1965). When employees observe a discrepancy between an organization's CSR commitments (talk) and its actual practices (walk), they engage in causal attribution to infer the organization's underlying motives. If the inconsistency is attributed to insincerity, deception, or symbolic management termed corporate hypocrisy it triggers negative emotional and behavioral responses (Wagner et al., 2009; Scheidler et al., 2019). Such attributions of hypocrisy erode

trust, undermine perceived organizational authenticity, and can lead to cynicism, reduced extra role efforts, and intentions to leave (Miao and Zhou, 2020; McShane and Cunningham, 2012). In the context of African SMEs navigating global legitimacy pressures alongside local constraints, employees are likely to be highly sensitive to such discrepancies, making attributional processes a key mechanism linking perceived incoherence to negative outcomes (Kostova and Zaheer, 1999; Zoogah et al., 2015).The perceived authenticity of CSR conceptualized here as the coherence between discourse and practice, transparency in communication, and strategic integration of CSR values serves as the core construct bridging these theories. Authenticity mitigates attributions of hypocrisy and strengthens positive social identity (Lv and Luan, 2025; Eldor, 2025). Transparency, a key component of authenticity, involves openly communicating both achievements and shortcomings. It can act as a critical boundary condition, potentially buffering the negative effects of perceived incoherence by reducing uncertainty and fostering trust, even when some misalignment is observed (Social Responsibility Journal, 2025; Jiang et al., 2022). However, in SME contexts with limited formal communication channels and high operational visibility, the role of transparency may be complex and contingent (Jamali et al., 2017).

Integrating these perspectives leads to the proposed research model: perceived incoherence between CSR discourse and practice undermines employee advocacy and retention intentions, potentially through diminished overall perceptions of CSR engagement, with perceived transparency moderating this detrimental relationship.

II. Hypotheses Formulation

H1: Direct Effect of Perceived Incoherence. Based on authenticity and attribution theories, a direct negative relationship is expected between perceived CSR incoherence and employee outcomes. When employees perceive a gap between stated CSR commitments and actual practices, they are likely to attribute this to organizational hypocrisy, damaging trust and identification. This should directly reduce their willingness to advocate for the employer and increase turnover intentions (Lv and Luan, 2025; Chang et al., 2021; Onkila and Sarna, 2021). Empirical meta analyses confirm that negative CSR perceptions robustly predict adverse employee attitudes and behaviors (Zhao et al., 2020; Paruzel et al., 2021). Therefore, we hypothesize:

H1: Perceived incoherence between proclaimed CSR commitments and actual practices (i.e., low perceived CSR authenticity) is negatively associated with employees' advocacy and retention intentions.

H2: Mediating Role of Overall CSR Engagement Perceptions. Social Identity Theory suggests that global evaluations of the organization's character mediate specific perceptions. Overall perceptions of CSR engagement an employee's holistic judgment of the organization's CSR commitment may serve as the cognitive and affective pathway through which perceived incoherence influences behavior. Specific inconsistencies may taint the global evaluation, which in turn drives advocacy and retention decisions (Eldor, 2025). This aligns with meta-analytic evidence that CSR impacts employees primarily through attitudinal mechanisms like organizational identification and justice (Zhao et al., 2020). Thus, we hypothesize:

H2: Overall perceptions of CSR engagement mediate the negative relationship between perceived incoherence and employees' advocacy and retention intentions.

H3: Moderating Role of Perceived Transparency. Attribution Theory highlights the importance of information in shaping causal inferences. High perceived transparency open communication about CSR activities, including challenges may provide contextual cues that mitigate negative attributions from observed incoherence. Transparency can signal honesty and a commitment to improvement, thereby attenuating the negative impact of perceived gaps (Social Responsibility Journal, 2025; Jiang et al., 2022; Taylor, 2021). However, this buffering effect may depend on the credibility and sufficiency of the information provided. We therefore hypothesize:

H3: Perceived CSR transparency moderates the relationship between perceived incoherence and employees' advocacy and retention intentions, such that the negative effect of incoherence is attenuated when transparency is high.

III. Methodology

1. Research Design and Context

This study adopts a quantitative dominant sequential explanatory mixed methods design, conducted within a single case: a Tunisian manufacturing small to medium enterprise (SME) structured as a *société anonyme (SA) under tunisian law*. The company operates in the manufacturing sector, specializing in high-pressure die-casting, electroplating, and zamak decoration, and primarily exports to European clients in luxury, hardware, and automotive sectors. This context represents a typical setting for CSR research in emerging economies, where formal CSR practices are often emerging and constrained by limited resources (Jamali et al., 2017; Torugsa et al., 2012). The study draws on evidence from this tunisian industrial firm to offer insights into how African SMEs navigate global CSR pressures while operating in constrained local contexts (George et al., 2016; Zoogah et al., 2015).

2. Sample and Procedure

The target population comprised all employees of the focal SME. Our study used a cross-sectional survey design. Data were collected via a single anonymous self-administered questionnaire distributed to employees during January 2026. To accommodate varying levels of digital access among employees, a mixed distribution approach was employed: the questionnaire was made available both digitally (via Google Forms) and in paper-based formats placed in common areas such as break rooms and production zones. The questionnaire was prepared in French, the primary working language in Tunisian companies.

Participation was voluntary, and respondents were assured of complete anonymity and confidentiality. No personal identifiers were collected at any stage. After screening for completeness and validity, the final usable sample consisted of 52 responses (N = 52). Due to the combined distribution methods (email, physical copies, and QR code sharing), the exact response rate could not be calculated. This sample size, although modest, is appropriate for an exploratory study conducted in a single SME in an emerging market, where logistical and cultural barriers often limit participation rates (Chakroun et al., 2017). The respondents represented a cross-section of departments and hierarchical levels within the company, providing sufficient variation to examine the proposed relationships.

3. Measures and Instrumentation

All constructs were measured using single item or composite scales adapted from established CSR and organizational behavior literature, with adjustments for the SME context and brevity of the survey instrument. Given the exploratory nature of the study and the practical constraints of surveying employees in a Tunisian manufacturing SME, single item measures were employed for most constructs. This approach is increasingly accepted in emerging market and SME-focused research, where multi item scales may lead to respondent fatigue or lower completion rates (Diamantopoulos et al., 2012; Wanous et al., 1997). The questionnaire included demographic variables (sex, age category, department) and nine closed ended items capturing key CSR perceptions, primarily using 5-point Likert scales unless otherwise indicated.

Perceived Incoherence (Independent Variable). Perceived incoherence between pro- claimed CSR commitments and actual practices was measured using a single reverse-scored item: *"To what extent do you perceive a coherence between the company's CSR discourse and its concrete actions?"* (1 = Very coherent, 5 = Not at all coherent). The score was reversed so that higher values indicate greater perceived incoherence (i.e., lower CSR authenticity). This item captures the core authenticity-related dimension of alignment between rhetoric and reality, consistent with prior authenticity research (Alvesson and Spicer, 2019; Lv and Luan, 2025).

Overall Perceptions of CSR Engagement (Mediator). This construct was assessed with a single direct item: *"Overall, how would you rate the company's commitment to Corporate Social Responsibility (CSR)?"* (1 = Very weak, 5 = Very strong). This item reflects employees' holistic evaluation of the firm's CSR commitment level and serves as a mediator in line with studies linking global CSR perceptions to

employee outcomes (Eldor, 2025).

Perceived Transparency (Moderator). Transparency was measured using a single item: *"Do you think the company is transparent about its social and environmental commitments?"* (1 = Very insufficient, 5 = Very sufficient). This measure captures employees' subjective assessment of information disclosure regarding CSR activities, a key moderator in authenticity and skepticism models (Social Responsibility Journal, 2025).

Advocacy Intentions (Dependent Variable – Proxy). Advocacy intentions were operationalized as a composite proxy combining two items: (1) Personal involvement in CSR actions (*"To what extent do you feel personally involved in the company's CSR actions?"* 1 = Not at all, 5 = Very involved), and (2) Belief in reputation enhancement (*"Do you think the company's CSR commitment improves its reputation?"* Oui = 1, Non = 0, Je ne sais pas = 0.5). The two items were averaged to form the *Advocacy proxy* score (higher values indicate stronger advocacy intentions). This proxy reflects employees' willingness to support and promote the organization's CSR efforts, consistent with advocacy conceptualizations in CSR literature.

Retention Intentions (Dependent Variable – Proxy). Retention intentions were proxied using a single item assessing perceived integration of CSR values: *"To what extent do you think CSR values are integrated into the company's strategic and operational decisions?"* (1 = Not at all, 5 = Completely). Higher scores indicate stronger perceived alignment, which prior research links inversely to turnover intentions (Glavas and Godwin, 2013).

Control Variables. Demographic controls included gender (coded as Male dummy), age group (categorical dummies), and department (categorical dummies). These variables were included to account for potential confounding effects on employee perceptions and intentions.

All scales were self-reported, and common method variance was mitigated through procedural remedies: assuring respondent anonymity, using varied response formats (Likert scales, binary, multiple-select), and presenting items in a randomized sequence (Podsakoff et al., 2003).

4. Analytical Strategy

All statistical analyses were performed using standard procedures for hypothesis testing in organizational and CSR research. Analyses were conducted in two main stages: descriptive and inferential statistics.

First, descriptive statistics (means, standard deviations, skewness, and kurtosis) were computed for all main constructs to assess central tendency, dispersion, and distributional properties. Pearson product-moment correlation coefficients were calculated to examine bivariate associations among the variables and to provide preliminary evidence for the hypothesized relationships.

To test **Hypothesis 1** (direct negative effect of perceived incoherence on advocacy and retention intentions), ordinary least squares (OLS) regression was employed. The models were specified as follows:

$$\boldsymbol{Y = \beta_0 + \beta_1 X + \beta_2 \text{Controls} + \varepsilon} \quad (1)$$

where:

- Y = *Advocacy proxy* or *Retention proxy*
- X = *Perceived Incoherence*
- Controls = gender (Male dummy), age group dummies, department dummies
- ε = error term

Heteroscedasticity robust standard errors (HC3) were used to obtain reliable inference given the relatively small sample size and potential non-normality of residuals (Long and Ervin, 2000). Significance was evaluated at $p < .05$ (two-tailed).

Hypothesis 2 (mediation through overall perceptions of CSR engagement) was tested using bootstrapped mediation analysis with 5,000 resamples (Preacher and Hayes, 2008). The indirect effect was estimated as the product of path a ($X \rightarrow M$) and path b ($M \rightarrow Y$), controlling for the direct path c' and covariates. Confidence intervals (95%) were bias-

corrected and accelerated (BCa). The mediation model can be formally expressed as:

$$\boldsymbol{M = \alpha_0 + \alpha_1 X + \alpha_2 \text{Controls} + \zeta_1} \quad (2)$$

$$\boldsymbol{Y = \beta_0 + \beta_1 X + \beta_2 M + \beta_3 \text{Controls} + \zeta_2} \quad (3)$$

where indirect effect = $\alpha_1 \times \beta_2$. Mediation is present if the 95% BCa CI of the indirect effect does not include zero.

Hypothesis 3 (moderation by perceived transparency) was examined through hierarchical moderated regression. The interaction term was created by multiplying the mean centered predictor and moderator to reduce multicollinearity:

$$\textbf{Interaction} = (\boldsymbol{Perceived\ Incoherence} - \boldsymbol{M}_{\textbf{Incoherence}}) \times (\boldsymbol{Transparency} - \boldsymbol{M}_{\textbf{Transparency}}) \quad (4)$$

The moderated model was specified as:

$$\boldsymbol{Y = \beta_0 + \beta_1 X + \beta_2 \text{Moderator} + \beta_3 (X \times \text{Moderator}) + \beta_4 \text{Controls} + \varepsilon} \quad (5)$$

Simple slopes were probed at low (−1 SD), mean, and high (+1 SD) levels of the moderator (Aiken and West, 1991). Significance of the interaction term was evaluated at $p < .05$.

Missing data were handled using listwise deletion within each model, as the proportion of missingness was low and appeared to be missing at random. No imputation was performed to preserve the original response patterns. Assumption checks included visual inspection of residuals (normality, homoscedasticity, linearity) and reporting of skewness/kurtosis for the main variables. Multicollinearity was assessed informally through correlation matrices (all $r < .70$) and variance inflation factors (VIF < 5 in preliminary models). All analyses were conducted using established statistical software for regression and mediation modeling. This analytical strategy provides a rigorous and conservative approach to hypothesis testing, balancing statistical power constraints (N = 52) with methodological transparency.

IV. Results

1. Descriptive Statistics and Correlations

Table 1 presents the descriptive statistics for the main constructs. Employees perceived a moderate level of incoherence between the SME's proclaimed CSR commitments and its actual practices (M = 3.308, SD = 1.449), with scores ranging from 1 to 5. Overall perceptions of the company's CSR engagement were relatively low (M = 2.500, SD = 1.393), indicating that many respondents viewed the company's CSR efforts as limited or insufficient. Perceived transparency was also modest (M = 2.615, SD = 1.416), suggesting a general sense of limited disclosure regarding social and environmental commitments. The advocacy proxy score was low (M = 1.630, SD = 0.656), reflecting limited personal involvement in CSR actions and modest belief in the reputational benefits of CSR. Retention intentions, proxied by the perceived integration of CSR values into strategic and operational decisions, were moderate (M = 2.404, SD = 1.390).

Skewness and kurtosis values for all variables fell within acceptable ranges for parametric testing (skewness between -0.244 and 0.640; kurtosis between -1.266 and -0.885), indicating no severe departures from normality that would preclude the use of OLS regression.

Table 2 reports the Pearson product-moment correlation coefficients among the main constructs. As expected, perceived incoherence showed negative associations with both advocacy intentions ($r = -0.316$) and retention intentions ($r = -0.306$), providing initial bivariate support for Hypothesis 1. Perceived incoherence was also

negatively related to overall CSR engagement perceptions ($r = -0.185$) and transparency ($r = -0.190$), though these associations were weaker and non-significant at the bivariate level.

Overall CSR engagement perceptions exhibited a positive but weak correlation with retention intentions ($r = 0.157$) and transparency ($r = 0.169$), but showed virtually no association with advocacy intentions ($r = 0.040$). Transparency displayed moderate positive correlations with advocacy intentions ($r = 0.261$) and retention intentions ($r = 0.250$), suggesting that higher perceived transparency is linked to more favorable employee outcomes.

Table 1: Descriptive Statistics

Construct	Count	Mean	SD	Min	25%	50%	75%	Max	Skewness	Kurtosis
Perceived Incoherence	52	3.308	1.449	1.000	2.000	3.000	5.000	5.000	-0.244	-1.266
Overall CSR Engagement	52	2.500	1.393	1.000	1.000	2.000	4.000	5.000	0.475	-1.064
Perceived Transparency	52	2.615	1.416	1.000	1.000	2.500	4.000	5.000	0.337	-1.177
Advocacy Proxy	52	1.630	0.656	0.500	1.000	1.500	2.000	3.000	0.123	-1.084
Retention Proxy	52	2.404	1.390	1.000	1.000	2.000	3.250	5.000	0.640	-0.885

The correlation matrix shows no evidence of problematic multicollinearity among the predictor variables (all $|r| < 0.32$), supporting the suitability of multiple regression models for hypothesis testing. These preliminary patterns are consistent with theoretical expectations that perceived CSR inauthenticity (incoherence) undermines employee support and loyalty, while transparency may serve as a protective factor.

Table 2: Pearson Correlations

Variable	1	2	3	4	5
1. Perceived Incoherence	1.000	-0.185	-0.190	-0.316	-0.306
2. Overall CSR Engagement	-0.185	1.000	0.169	0.040	0.157
3. Perceived Transparency	-0.190	0.169	1.000	0.261	0.250
4. Advocacy Proxy	-0.316	0.040	0.261	1.000	0.296
5. Retention Proxy	-0.306	0.157	0.250	0.296	1.000

Reliability of the composite measure (Advocacy proxy) was assessed using Cronbach's alpha. The two items (personal involvement in CSR actions and belief in reputation enhancement) yielded an alpha of -0.551 (95% CI [-1.703, 0.109]), indicating poor internal consistency. This low reliability is likely attributable to the heterogeneous nature of the two items: one reflects behavioral involvement while the other captures a cognitive belief about reputational outcomes. In line with prior exploratory research in SME contexts using brief scales (Diamantopoulos et al., 2012; Wanous et al., 1997), the composite proxy was retained for its conceptual relevance rather than psychometric purity. All other constructs relied on single item measures, for which traditional reliability coefficients are not applicable (Wanous and Hudy, 2001).

Table 3: Reliability Analysis – Cronbach's Alpha for Composite

Measure	Measure	Number of Items	Cronbach's α	95% Confidence Interval
Advocacy proxy		2	-0.551	[-1.703, 0.109]

2. Hypothesis Testing

Hypothesis 1: Direct Effects of Perceived Incoherence. Hypothesis 1 proposed that perceived incoherence between proclaimed CSR commitments and actual practices is negatively associated with employee's advocacy and retention intentions. Ordinary least squares (OLS) regression with HC3 robust standard errors was employed to test the direct effects, with perceived incoherence as the predictor and advocacy proxy and retention proxy as dependent variables, respectively. Results are reported in Table 4.

For advocacy intentions (proxied by the composite_Advocacy proxy score), perceived incoherence exhibited a statistically significant negative relationship ($\beta = -0.1431$, SE = 0.059, $z = -2.416$, $p = 0.016$, 95% CI [-0.259, -0.027]). This indicates that higher levels of perceived incoherence are associated with lower advocacy intentions, providing support for Hypothesis 1 with respect to advocacy.Similarly, for retention intentions (proxied by Retention proxy), perceived incoherence was negatively and significantly related to the outcome ($\beta = -0.2938$, SE = 0.134, $z = -2.192$, $p = 0.028$, 95% CI [-0.556, -0.031]). Thus, greater perceived incoherence corresponds to lower perceived integration of CSR values into strategic and operational decisions, offering further support for Hypothesis 1.

Taken together, these findings indicate that employee's perceptions of misalignment between CSR rhetoric and practice undermine both their willingness to advocate for the organization and their intention to remain committed, consistent with theoretical expectations regarding CSR authenticity (Lv and Luan, 2025).

Table 4: OLS Regression Results – Direct Effects of Perceived Incoherence on Advocacy and Retention Intentions (HC3 robust standard errors)

Variable	Advocacy Proxy (DV)	Retention Proxy (DV)
Constant	2.103*** (0.224)	3.376*** (0.542)
Perceived Incoherence	-0.143* (0.059)	-0.294* (0.134)
z-value (Incoherence)	-2.416	-2.192
p-value (Incoherence)	0.016	0.028
95% CI [lower, upper]	[-0.259, -0.027]	[-0.556, -0.031]
Observations	52	52

Figure 1 presents bivariate scatterplots with ordinary least squares fitted lines and 95% confidence intervals, illustrating the direct associations between perceived incoherence and the two outcome variables:

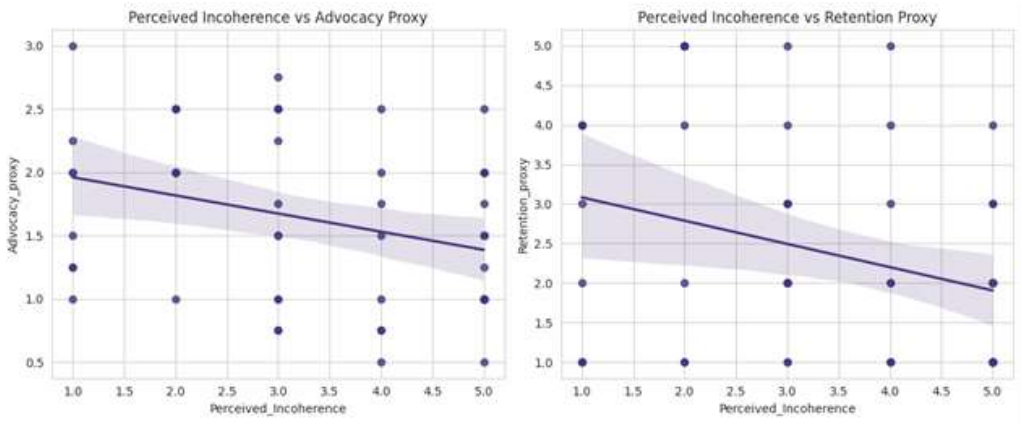


Figure 1: Relationship between Perceived Incoherence and Employee Outcomes

In the left panel (Perceived Incoherence vs. Advocacy Proxy), a negative linear trend is

evident (fitted slope ≈ −0.14), with the regression line declining as perceived incoherence increases from 1 to 5. The majority of data points cluster between incoherence scores of 2 and 5, and the negative slope aligns with the significant negative coefficient reported in Table 4 ($\beta = -0.143$, $p = 0.016$). The 95% confidence band widens slightly at higher incoherence levels, reflecting greater uncertainty in the estimate at the upper end of the scale. This visual pattern supports the hypothesis that higher perceived misalignment between CSR rhetoric and practice is associated with lower employee advocacy intentions.

In the right panel (Perceived Incoherence vs. Retention Proxy), the negative trend is more pronounced (fitted slope ≈ −0.29), consistent with the stronger regression coefficient ($\beta = -0.294$, $p = 0.028$) in Table 4. Data points show greater dispersion, particularly at mid to high incoherence levels (3–5), but the overall downward slope and narrowing confidence band at the extremes reinforce a consistent negative relationship. The figure illustrates that as employees perceive greater incoherence in the company's CSR practices, their perceptions of CSR value integration into strategic and operational decisions decrease, supporting the direct effect on retention intentions.

Taken together, these scatterplots provide visual confirmation of the statistically significant negative direct effects identified in Hypothesis 1, highlighting the detrimental role of perceived CSR inauthenticity on both advocacy and retention proxies in this Tunisian SME context.

Hypothesis 2: Mediation by Overall Perceptions of CSR Engagement. Hypothesis 2 posited that overall perceptions of CSR engagement mediate the negative relationship between perceived incoherence and employees' advocacy and retention intentions. Bootstrapped mediation analysis with 5,000 resamples (bias-corrected and accelerated confidence intervals) was conducted to estimate indirect effects, following Preacher and Hayes, 2008. Results are summarized in Table 5.

For advocacy intentions, the total effect of perceived incoherence was significant ($\beta = -0.143$, $p = 0.022$, 95% CI [-0.265, -0.021]). However, the indirect effect through overall CSR engagement perceptions was not significant (indirect effect = 0.002, SE = 0.014, $p = 0.890$, 95% CI [-0.020, 0.045]). The direct effect remained significant ($\beta = -0.145$, $p = 0.025$, 95% CI [-0.270, -0.019]). These results suggest that the negative impact of perceived incoherence on advocacy operates primarily directly, with no evidence of mediation by overall CSR engagement perceptions.

For retention intentions, the total effect was significant ($\beta = -0.294$, $p = 0.027$, 95% CI [-0.553, -0.034]), and the direct effect remained significant ($\beta = -0.275$, $p = 0.042$, 95% CI [-0.541, -0.010]). The indirect effect via overall CSR engagement was not significant (indirect effect = -0.018, SE = 0.032, $p = 0.532$, 95% CI [-0.129, 0.020]). Accordingly, Hypothesis 2 is not supported for either outcome variable.

Table 5: Bootstrapped Mediation Results – Overall CSR Engagement Perceptions as Mediator

Path / Effect	Advocacy Proxy (DV)	Retention Proxy (DV)
Path a: X → M (CSR engagement)	-0.177 (0.134), p = 0.190 CI [-0.446, 0.091]	-0.177 (0.134), p = 0.190 CI [-0.446, 0.091]
Path b: M → Y	0.019 (0.067), p = 0.777 CI [-0.115, 0.153]	0.157 (0.139), p = 0.267 CI [-0.123, 0.436]
Total Effect	-0.143* (0.061), p = 0.022 CI [-0.265, -0.021]	-0.294* (0.129), p = 0.027 CI [-0.553, -0.034]
Direct Effect	-0.145* (0.062), p = 0.025 CI [-0.270, -0.019]	-0.275* (0.132), p = 0.042 CI [-0.541, -0.010]
Indirect Effect	0.002 (0.014), p = 0.890 CI [-0.020, 0.045]	-0.018 (0.032), p = 0.532 CI [-0.129, 0.020]

Hypothesis 3: Moderation by Perceived Transparency. Hypothesis 3 proposed that perceived transparency moderates the negative relationship between perceived incoherence and employee's advocacy and retention intentions, such that the negative effect is attenuated when transparency is high. Moderated multiple regression analysis was conducted, including the main effects of perceived incoherence and transparency, as well as their interaction term (Incoherence × Transparency). Results are presented in Table 6.

For advocacy intentions, the interaction term was not statistically significant (β = −0.0001, SE = 0.038, z = −0.004, p = 0.997, 95% CI [-0.075, 0.075]). Neither the main effect of perceived in- coherence (β = −0.1248, p = 0.310) nor transparency β = 0.0969, p = 0.542) reached significance in the moderated model. These findings indicate no moderating role for transparency, failing to support Hypothesis 3 for advocacy intentions.

For retention intentions, the interaction term was likewise non-significant (β = 0.1195, SE = 0.100, z = 1.196, p = 0.232, 95% CI [-0.076, 0.316]). The main effect of perceived incoherence approached conventional significance (β = −0.6057, p = 0.053), while transparency remained non- significant (β = −0.2269, p = 0.616). Again, no evidence of moderation by transparency was observed, leading to the rejection of Hypothesis 3 for retention intentions.

V. Discussion

Our present study examined the extent to which perceived incoherence between proclaimed CSR commitments and actual practices influences employee's advocacy and retention intentions in a Tunisian manufacturing SME, as well as the potential mediating role of overall CSR engagement perceptions and the moderating role of perceived transparency.

The findings provide clear support for Hypothesis 1. Perceived incoherence exhibited a significant negative direct effect on both advocacy intentions (β = −0.143, p = 0.016) and retention intentions (β = −0.294, p = 0.028). These results align with authenticity theory, which posits that misalignment between organizational rhetoric and practice erodes employee trust, identification, and behavioral support (Alvesson and Spicer, 2019; Lv and Luan, 2025). In the Tunisian SME context, where CSR initiatives are often informal and resource-constrained, employees appear particularly sensitive to perceived gaps between discourse and implementation. The visual confirmation provided by Figure 1 further illustrates this consistent downward trend: as perceived incoherence increases, both advocacy and retention proxies decline, underscoring the detrimental role of inauthenticity in shaping employee attitudes and intentions.

Table 6: Moderated Regression Results – Perceived Transparency as Moderator

Variable	Advocacy Proxy (DV)	Retention Proxy (DV)
Constant	1.7906** (0.524)	4.0122** (1.403)
Perceived Incoherence	-0.1248 (0.123)	-0.6057† (0.313)
Transparency	0.0969 (0.159)	-0.2269 (0.452)
Incoherence × Transparency	-0.0001 (0.038)	0.1195 (0.100)
z-value (Interaction)	-0.004	1.196
p-value (Interaction)	0.997	0.232
95% CI [lower, upper] (Interaction)	[-0.075, 0.075]	[-0.076, 0.316]
Observations	52	52

† $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Contrary to Hypothesis 2, overall perceptions of CSR engagement did not mediate the relation- ship between perceived incoherence and either outcome variable. The indirect effects were negligible and non-significant for advocacy (indirect = 0.002, $p = 0.890$) and retention (indirect = -0.018, $p = 0.532$). This lack of mediation suggests that employee's global evaluation of Novita's CSR commitment does not explain the mechanism through which incoherence undermines advocacy and retention. One plausible explanation lies in the low mean level of perceived CSR engagement ($M = 2.500$), which may reflect a general skepticism or limited awareness of CSR activities in the SME. In resource-constrained settings such as Tunisian manufacturing firms, employees may not form strong overall judgments of CSR engagement, thereby attenuating its mediating potential (Eldor, 2025).

Similarly, Hypothesis 3 was not supported. Perceived transparency did not moderate the negative relationship between incoherence and either outcome (interaction terms non-significant: $p = 0.997$ for advocacy, $p = 0.232$ for retention). This unexpected result contrasts with prior literature suggesting that transparency can buffer the negative effects of perceived inauthenticity by reducing skepticism (Social Responsibility Journal, 2025). In this specific context, the modest level of perceived transparency ($M = 2.615$) may indicate that employees do not perceive sufficient information disclosure to activate a buffering mechanism. It is also possible that transparency alone is insufficient in SMEs where employees have direct daily exposure to operational practices, making perceived incoherence more salient than informational cues.

The poor reliability of the Advocacy proxy composite (Cronbach's $\alpha = -0.551$) represents a methodological limitation that warrants caution in interpreting this outcome. The negative alpha likely stems from the conceptual heterogeneity of the two items (behavioral involvement vs. cognitive belief), a common challenge in brief proxy measures (Diamantopoulos et al., 2012; Wanous et al., 1997). While the proxy was retained for its theoretical relevance and supported by expected negative correlations with incoherence ($r = -0.316$), future studies should employ multi-item scales to more robustly capture advocacy intentions.

The findings contribute to the CSR literature in several ways. First, they extend authenticity research to an understudied context: Tunisian SMEs, where formal CSR is still emerging. Second, they highlight the primacy of direct effects of perceived incoherence over mediated or moderated pathways, suggesting that in resource-limited settings, employees may respond more strongly to experienced misalignment than to global perceptions or transparency cues. Third, the results underscore the importance of alignment between CSR discourse and practice in shaping employee outcomes, even in contexts where CSR maturity is low.

From a practical perspective, the results suggest that Tunisian manufacturing SMEs like Novita should prioritize reducing perceived incoherence through consistent implementation of CSR actions rather than relying solely on communication or transparency efforts. Managers could focus on visible, tangible initiatives (e.g., workplace safety improvements, waste reduction) that employees can directly observe and experience, thereby strengthening perceived authenticity and supporting advocacy and retention.

Several limitations should be acknowledged. The reliance on single-item measures and a

composite proxy with low reliability constrains the robustness of some constructs. The cross-sectional design precludes causal inference, and common method variance remains a potential concern despite procedural remedies. The small sample size ($N = 52$) from a single SME limits generalizability, although it is appropriate for exploratory purposes in this context. Future research should employ longitudinal designs, multi-item scales, and multi-firm samples to replicate and extend these findings. Additional mediators (e.g., organizational identification, trust) and moderators (e.g., employee CSR attributions) could provide deeper insight into the mechanisms at play.

In conclusion, this study demonstrates that perceived CSR incoherence exerts a direct negative influence on employee advocacy and retention intentions in a Tunisian SME, while overall engagement perceptions and transparency do not play significant mediating or moderating roles. These results highlight the critical importance of authenticity in CSR implementation, particularly in emerging market SMEs where symbolic efforts may be met with skepticism.

VI. Conclusion

This study set out to investigate the micro-level consequences of perceived CSR inauthenticity within a Tunisian manufacturing SME, addressing the research question: *To what extent does perceived (in)coherence between CSR discourse and practice influence employee advocacy and retention intentions, and how do overall CSR engagement perceptions and perceived transparency shape this relationship?* Grounded in social identity theory and attribution theory, the research provides empirical evidence from an understudied North African context where the alignment between global CSR pressures and local organizational realities is both strategically critical and practically challenging.

The findings offer clear support for Hypothesis 1: perceived incoherence between proclaimed CSR commitments and actual practices exerts a significant negative direct effect on both employee advocacy intentions ($\beta = -0.143$, $p = 0.016$) and retention intentions ($\beta = -0.294$, $p = 0.028$). This result underscores the fundamental importance of authenticity in CSR implementation, particularly in resource constrained emerging market SMEs where symbolic CSR efforts are met with employee skepticism. The direct, unmediated nature of this relationship suggests that in such contexts, employees respond more strongly to personally experienced misalignment between CSR rhetoric and reality than to global organizational evaluations or transparency cues.

Contrary to expectations, neither Hypothesis 2 (mediation through overall CSR engagement perceptions) nor Hypothesis 3 (moderation by perceived transparency) received empirical support. The lack of mediation indicates that employee's holistic judgments of CSR commitment do not serve as the cognitive pathway through which specific incoherence perceptions translate into behavioral intentions. This may reflect the relatively low overall CSR engagement perceptions in the studied SME ($M = 2.500$), where employee's limited exposure to formal CSR initiatives precludes the formation of robust global evaluations. Similarly, the absence of moderation by transparency suggests that, in SMEs characterized by close operational proximity and informal communication channels, transparency alone may be insufficient to buffer the negative effects of perceived CSR- walk misalignment. Employee's direct observation of daily practices may render informational cues about CSR less salient than experiential evidence of inconsistency.

The study makes several contributions to the micro-CSR and international management literature. First, it extends authenticity research to an underexplored MENA regional context, demonstrating that the relationship between CSR discourse-practice alignment and employee outcomes holds even in settings where formal CSR structures are nascent and resource-constrained. Second, by positioning Tunisia as a representative case of African SMEs navigating global legitimacy pressures, the research contributes to scholarship on how developing economy firms manage the tension between external expectations and internal realities. Third, the findings highlight context specific mechanisms: in SMEs with limited CSR maturity and high operational visibility, direct experiential evidence of incoherence appears more influential than mediated attitudinal pathways or moderating transparency effects.

From a practical perspective, the results offer actionable insights for SME managers in

export- oriented developing economies. Rather than investing primarily in CSR communication or transparency initiatives, managers should prioritize the consistent implementation of visible, tangible CSR actions that employees can directly observe and experience. Concrete improvements in workplace safety, environmental practices, or community engagement when aligned with proclaimed CSR values are likely to strengthen perceived authenticity more effectively than symbolic commitments or informational disclosures. For Tunisian manufacturing SMEs competing in European markets, such authenticity is not merely an ethical concern but a strategic imperative for talent retention and positive employee advocacy.

Several limitations warrant consideration and suggest directions for future research. The reliance on single-item measures and a composite proxy with low reliability for advocacy intentions constrains the robustness of some findings. The cross-sectional design precludes causal inference, and the small sample size from a single SME limits generalizability. Future studies should employ longitudinal designs, validated multi-item scales, and multi-firm samples across different emerging economies to enhance methodological rigor and external validity. Additional research could explore other potential mediators (e.g., organizational trust, psychological contract fulfillment) and moderators (e.g., employee CSR attributions, cultural values) to develop a more nuanced understanding of the mechanisms linking CSR authenticity to employee outcomes.

In summary, this research demonstrates that perceived CSR incoherence directly undermines employee advocacy and retention intentions in Tunisian manufacturing SMEs, with neither overall engagement perceptions nor transparency playing significant mediating or moderating roles. The findings underscore that in emerging-market contexts where CSR is evolving from symbolic gesture to strategic necessity, authenticity achieved through consistent alignment between discourse and practice is paramount. For African SMEs navigating the complex interface between global expectations and local constraints, genuine CSR implementation represents not only an ethical obligation but a critical investment in internal legitimacy, employee commitment, and sustainable competitive advantage.

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Poverty, Fiscal Sustainability and Urban Economic Development in African Cities: A Fiscal Capability Framework

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ABSTRACT

African metropolitan municipalities confront a deepening fiscal paradox: they carry expanding service delivery responsibilities while operating within urban economies characterised by persistent poverty and limited household affordability. This paper develops an integrated sustainability governance framework for understanding how urban institutions support socially inclusive and economically resilient development in emerging economy cities.

Drawing on metropolitan and national longitudinal data from South Africa (2008–2019), the study integrates fiscal federalism, fiscal stress theory, and Sen's (1999) capabilities approach to examine how urban socioeconomic conditions influence institutional capacity to achieve sustainable development outcomes aligned with the Sustainable Development Goals (SDGs). The dataset covers the period up to 2019; the authors acknowledge that this constitutes a methodological limitation, discussed in Section 7.

The empirical analysis indicates that poverty and basic human needs deprivation are the strongest observed constraints on both fiscal sustainability and broader urban sustainability outcomes (Mbulawa, 2019; Auditor-General of South Africa, 2020). Infrastructure quality, population growth, and unemployment do not demonstrate statistically significant independent effects once affordability conditions are considered, suggesting that municipal fiscal stress in African cities appears to be associated with demand-side socioeconomic conditions rather than administrative or infrastructural factors (Watson & Hassett, 2016).

The paper advances a Fiscal Capability Framework (FCF) that links household welfare, municipal fiscal capacity, and urban economic performance. Because many African cities provide the institutional and infrastructural platforms for labour markets and firm activity (Bahl & Bird, 2018; Roy, 2018), municipal fiscal capacity affects private sector development, investment viability, and urban competitiveness. Urban fiscal sustainability can be understood as a foundational institutional

condition for sustainable cities, inclusive economic participation, and resilient urban systems. Addressing urban poverty emerges not only as a social policy concern but as a core sustainability requirement for stable business ecosystems and long-term urban development across African metropolitan regions (United Nations, 2024).

Keywords: *financial sustainability; metropolitan municipalities; poverty; capabilities approach; fiscal federalism; South Africa; sustainable development; intergovernmental transfers*

1. INTRODUCTION

Metropolitan municipalities across Africa face a persistent fiscal paradox. They are responsible for delivering essential urban services—water, sanitation, electricity distribution, waste removal, and transport infrastructure—yet operate in urban economies characterised by rapid urbanisation, high inequality, and constrained household payment capacity (Bahl & Bird, 2018; Kim & Warner, 2021). Cities must expand service provision while socioeconomic conditions constrain the revenue available to finance it. Conventional public finance theory and municipal management approaches have not adequately explained how this tension affects development outcomes (Oates, 2005; Watson & Hassett, 2016).

The urgency of this challenge is reinforced by accelerating urbanisation. The United Nations (2018) projects that Africa's urban population will more than double by 2050, with growth concentrated in metropolitan areas already struggling to meet service obligations. As cities expand and poverty deepens, maintaining financially sustainable service provision becomes a central development challenge with implications for inequality, social stability, and economic growth (Rusca & Schwartz, 2018; United Nations, 2024).

Despite the scale of this problem, the literature offers limited guidance. Existing research documents multiple aspects of urban fiscal stress—including infrastructure backlogs, administrative constraints, revenue collection challenges, and transfer design—but provides limited empirical evidence on their relative importance in African metropolitan contexts (Hendrick & Degnan, 2020; Jimenez & Afonso, 2022).

This paper addresses that gap by synthesising findings from two empirical studies in South African metropolitan municipalities. The first examines determinants of financial sustainability in

Ekurhuleni, Johannesburg, and Tshwane (2008–2019). The second analyses how structural socioeconomic constraints shape sustainable development outcomes using national data (2009–2019).

Across both analyses, a consistent pattern emerges: demand-side socioeconomic conditions—particularly poverty and basic human needs deprivation—are stronger predictors than supply-side governance and infrastructure variables. These findings motivate an integrated framework linking fiscal federalism, fiscal stress theory, and the capabilities approach.

Within the AABD theme, metropolitan municipalities are conceptualised not merely as administrative service providers but as economic organisations providing the institutional and infrastructural platform on which firms operate and investment decisions are made (Slack & Bird, 2013; Roy, 2018). When municipalities experience fiscal stress, service reliability deteriorates, constraining productivity and investment. Poverty can therefore operate as a mechanism through which global disruptions are transmitted into organisational performance (Kim & Warner, 2021).

The paper contributes to African business and development scholarship by proposing that urban fiscal capacity can function as a binding institutional constraint on economic development (Kroukamp, 2014). Fiscally constrained municipalities weaken service reliability, increase operating costs, and reduce investment attractiveness. Metropolitan fiscal sustainability is therefore both a public finance concern and a determinant of urban economic transformation. Recent assessments indicate that many African countries remain off track in achieving several SDG targets, particularly those related to poverty reduction and service access (United Nations, 2024).

The remainder of the paper proceeds as follows. Section 2 reviews the literature. Section 3 outlines the methodology. Section 4 presents findings. Section 5 develops the Fiscal Capability Framework. Section 6 discusses policy implications. Section 7 concludes.

2. THEORETICAL FOUNDATIONS AND LITERATURE REVIEW

2.1 Fiscal Federalism and Metropolitan Fiscal Sustainability

Fiscal federalism theory, originating with Tiebout (1956) and Oates (2005), provides a foundational framework for understanding local government finance in decentralised systems. The theory posits that assigning revenue-raising authority and expenditure responsibilities to the

government tier best matched to the geographic scope of public goods enhances allocative efficiency. Metropolitan municipalities, which serve geographically defined urban agglomerations, are theoretically well positioned to leverage local revenue instruments—property taxes, user charges, business levies—to finance urban service provision efficiently.

In practice, however, the theory's optimistic assumptions about local revenue mobilisation encounter structural constraints in emerging economy contexts. Watson and Hassett (2016) and Kim and Warner (2021) document persistent gaps between fiscal federalism theory and metropolitan fiscal reality across developing countries, attributing these gaps to affordability constraints, informal economy prevalence, and mismatches between constitutional service mandates and revenue authority. South African metropolitan municipalities exemplify these tensions: they hold broad constitutional powers under Chapter 7 of the Constitution (South Africa, 1996), yet they experience chronic revenue shortfalls driven by high poverty concentration among residents (Bahl & Bird, 2018; Auditor-General of South Africa, 2020; Manuel & Erasmus, 2024).

Fiscal stress theory (Inman & Rubinfeld, 1997) complements fiscal federalism by focusing on conditions under which the resource-demand mismatch in municipal finance generates fiscal crisis. The theory identifies poverty concentration as a particularly potent fiscal stressor because it simultaneously reduces revenue capacity—through constrained tax base and payment defaults—and increases expenditure pressure through expanded social service demand (Mbulawa, 2019). Mbulawa (2019) applies fiscal stress frameworks to South African metropolitan contexts, documenting how poverty-driven revenue shortfalls create cascading service delivery deterioration that further erodes payment compliance.

Recent literature has expanded fiscal sustainability analysis beyond these classical frameworks. Hendrick and Degnan (2020) develop multidimensional sustainability frameworks that incorporate fiscal resilience against economic shocks alongside traditional solvency measures. Jimenez and Afonso (2022) apply comparative fiscal sustainability analysis across OECD and emerging economy local governments, finding that institutional design—particularly intergovernmental transfer architecture—significantly moderates poverty effects on local fiscal outcomes. These developments underscore the need for integrated analytical frameworks.

2.2 The Capabilities Approach and Sustainable Development

Sen's (1999) capabilities approach reframes development analysis from income-centred to freedom-centred perspectives, emphasising the substantive freedoms people have reason to value as the appropriate metric of development progress. Applied to urban contexts, the approach directs attention toward whether municipal service provision enhances residents' capabilities—their ability to achieve valued functionings including bodily health, material security, and social participation—rather than merely measuring service delivery outputs or revenue collection efficiency (Alkire, 2005; Robeyns, 2005).

Nussbaum (2011) extends the capabilities framework to identify central human capabilities constituting the minimum threshold for dignified human life, including bodily health, bodily integrity, senses and imagination, practical reason, and affiliation. This provides operational anchors for assessing capability-enhancing service provision. Basic human needs—water, sanitation, housing, nutrition, healthcare—emerge as foundational capabilities whose deprivation constrains all other capability dimensions (Rusca & Schwartz, 2018).

Capability deprivation is likely to affect fiscal sustainability through multiple channels. Most directly, households unable to meet basic needs cannot reliably pay for municipal services, generating revenue shortfalls that erode fiscal sustainability (Auditor-General of South Africa, 2020). Indirectly, basic needs deprivation constrains labour productivity, educational achievement, and economic participation, reducing the tax base from which municipalities might otherwise mobilise revenue (Bahl & Bird, 2018). Alkire (2005) and Robeyns (2005) elaborate how these capability-income interactions generate development traps wherein poverty and inadequate service provision reinforce each other across generations.

The capabilities approach aligns naturally with the Sustainable Development Goals framework, which articulates human flourishing as the ultimate objective of development effort (United Nations, 2015). SDG 11 (Sustainable Cities and Communities) specifically addresses urban sustainability in terms that extend beyond fiscal balancing to encompass social inclusion, environmental sustainability, and equitable access to basic services—criteria that fiscal analysis informed by capabilities theory is better positioned to evaluate than conventional fiscal federalism frameworks alone (United Nations, 2024).

2.3 African Metropolitan Fiscal Contexts

African metropolitan municipalities face fiscal conditions that differ significantly from those of cities in developed economies, which dominate the existing literature. Several contextual factors shape these differences (Bahl & Bird, 2018; Roy, 2018).

First, the coexistence of rapid urbanisation and widespread informality creates revenue mobilisation difficulties that conventional property tax and service charge instruments cannot easily resolve (Kim & Warner, 2021). As Roy (2018) documents across Asian and African metropolitan contexts, residents of informal settlements often lack the tenure security and formal service connections through which property-based revenue systems operate. Municipalities serving large informal populations therefore face structural revenue gaps that administrative improvements alone cannot bridge (Rusca & Schwartz, 2018).

Second, post-colonial institutional legacies—particularly spatially segregated infrastructure inherited from colonial and apartheid urban planning—create service delivery cost structures that disadvantage low-income residential areas (Auditor-General of South Africa, 2020). Extending service networks to historically underserved peri-urban settlements requires substantial capital investment while generating limited short-term revenue recovery, producing persistent fiscal pressure. South African metropolitan municipalities bear these legacy costs explicitly, as post-1994 service extension mandates require both infrastructure provision and continuing operational subsidy in areas where cost recovery remains structurally infeasible (South Africa, 1996).

Third, African metropolitan areas operate within national fiscal frameworks that often inadequately compensate for poverty-driven revenue constraints. Intergovernmental transfer systems designed primarily around population size and service delivery indicators fail to capture the fiscal burden of serving high-poverty populations (Slack & Bird, 2013; Bahl & Bird, 2018). This structural underfunding perpetuates fiscal stress regardless of administrative performance (Kroukamp, 2014).

The global disruptions highlighted in the AABD conference theme—climate change, geopolitical volatility, and digital transformation—interact directly with these fiscal conditions (United Nations, 2024). Climate events generate infrastructure damage and emergency expenditure demands that overwhelm already stressed fiscal systems. Commodity price shocks reduce household incomes and simultaneously weaken municipal revenue collection. Digitalisation offers efficiency gains in billing and service administration but requires upfront investment that fiscally

constrained municipalities struggle to finance (Kim & Warner, 2021). These disruptions are likely to affect municipalities largely through household income and affordability, reinforcing the importance of demand-side constraints in urban fiscal sustainability. Understanding the poverty–fiscal sustainability relationship is therefore a prerequisite for designing resilient metropolitan governance under contemporary global disruption.

Taken together, the existing literatures provide important but incomplete explanations of metropolitan fiscal sustainability in African contexts. Fiscal federalism theory explains institutional assignment of functions but assumes viable revenue bases (Tiebout, 1956; Oates, 2005). Fiscal stress theory recognises poverty pressures but treats them primarily as cyclical shocks (Inman & Rubinfeld, 1997). The capabilities approach explains welfare deprivation but does not specify its fiscal implications for public institutions (Sen, 1999; Nussbaum, 2011). In high-inequality urban environments, however, these processes are structurally linked: household deprivation constrains municipal revenue capacity, which in turn affects service provision and economic performance. The literature therefore lacks an integrated explanation of how socioeconomic conditions translate into institutional fiscal capacity. The Fiscal Capability Framework developed in this paper addresses this gap by linking household welfare, municipal finance, and urban economic development within a single analytical structure.

3. METHODOLOGY

3.1 Research Design and Data Sources

This paper presents a research synthesis drawing on a broader research programme investigating the institutional determinants of fiscal sustainability and development outcomes in South Africa (Manuel & Erasmus, 2024). It integrates two related empirical studies employing complementary methodological approaches. The first study uses panel data from three South African metropolitan municipalities—the City of Ekurhuleni, the City of Johannesburg, and the City of Tshwane—over the period 2008–2019 (33 usable observations after data cleaning and availability constraints). The second employs national-level longitudinal data for South Africa covering 2009–2019.

Data sources include audited municipal annual financial reports obtained from the National Treasury database, Statistics South Africa household survey data, South African Reserve Bank economic databases, and the Municipal Infrastructure Investment Framework. This multi-source design captures fiscal, socioeconomic, and infrastructure dimensions. Both studies adopt cross-

temporal approaches to assess theoretically motivated relationships. The analysis evaluates theoretically predicted relationships.

Given the limited number of metropolitan municipalities in South Africa, the analysis prioritises institutional depth over cross-sectional breadth. The study therefore adopts a case-intensive panel design appropriate for governance and institutional research in emerging economy contexts (Watson & Hassett, 2016). Because the paper synthesises two studies, the objective is explanatory theory development rather than causal identification (Hendrick & Degnan, 2020).

Data vintage and scope limitation. Both datasets extend to 2019, and the authors acknowledge this as an explicit methodological limitation. The period 2020–2024 witnessed significant disruption—including the COVID-19 pandemic and its fiscal aftermath, commodity price volatility linked to geopolitical conflict, and accelerating climate-related infrastructure stress—that is not captured in the estimation data (United Nations, 2024). Conclusions and policy recommendations are therefore grounded in pre-pandemic structural conditions and should be interpreted accordingly. The observed relationships between poverty, affordability, and fiscal sustainability are expected to remain structurally valid, given the persistence of underlying poverty conditions in South African metropolitan areas; however, the specific coefficient magnitudes may not fully reflect current fiscal dynamics. Future research extending the dataset to encompass post-2019 data would strengthen both the empirical findings and the applicability of recommendations to contemporary metropolitan governance challenges.

3.2 Study 1: Metropolitan Financial Sustainability Analysis

Financial sustainability is operationalised as the capacity of municipalities to meet service delivery obligations while maintaining fiscal solvency over time. The measure incorporates revenue adequacy, expenditure management, and debt service capacity, consistent with Watson and Hassett's (2016) multidimensional sustainability framework.

Five independent variables are examined: (1) Basic Municipal Services (BMS), measured as service delivery expenditure per capita; (2) Total Population in Gauteng (TPIG), capturing urbanisation pressure; (3) Inflation Poverty Lines (IPL), measuring poverty concentration using Statistics South Africa's upper-bound poverty line adjusted for inflation; (4) Unemployment Rate (UPTR), measuring labour market exclusion; and (5) Infrastructure Quality (INFE), measured as infrastructure asset value relative to depreciation.

Stepwise regression analysis is used as an exploratory model selection procedure to identify a parsimonious set of predictors in a data-constrained institutional context. Variables enter the model when partial F-statistics reach significance at $p < 0.05$ and are retained at $p < 0.10$. Diagnostic procedures include descriptive statistics, correlation analysis, and normality assessment using skewness, kurtosis, and standardised z-scores. The Durbin–Watson statistic tests for autocorrelation in panel data residuals. Stepwise regression is employed as a theory-building procedure to identify relevant institutional relationships. Given the small sample ($n = 33$), coefficients are interpreted cautiously as indicators of institutional relationships. The presence of strong inter-correlations among predictors—particularly between poverty, infrastructure, and service delivery variables—is acknowledged as a multicollinearity concern requiring cautious interpretation of individual coefficient magnitudes, consistent with standard practice in institutional economics research (Hendrick & Degnan, 2020).

3.3 Study 2: Structural Constraints to Sustainable Development

The second study develops an integrated capabilities-based framework to examine how five structural variables jointly shape sustainable development outcomes: (1) income poverty (PVT); (2) basic human needs deprivation (BND), measured through household access to water, sanitation, housing, and nutrition; (3) unemployment rate (UNE); (4) infrastructure quality (INQ), measured as infrastructure investment relative to GDP; and (5) population growth rate (PGR). The operationalisation of basic human needs draws directly on Nussbaum's (2011) central capabilities specification.

Sustainable development is operationalised using a composite index capturing economic, social, and environmental dimensions consistent with the SDG framework (United Nations, 2015). Ordinary least squares (OLS) estimation with heteroskedasticity-robust standard errors estimates the joint influence and relative importance of the five predictors. Diagnostic tests include Variance Inflation Factor (VIF) analysis for multicollinearity, Breusch–Pagan tests for heteroskedasticity, Ramsey RESET tests for functional form, and Shapiro–Wilk tests for residual normality. Robustness checks assess coefficient stability across alternative specifications. All statistical analyses were conducted using standard econometric procedures.

4. EMPIRICAL FINDINGS

4.1 Study 1: Determinants of Metropolitan Financial Sustainability

This section presents the quantitative findings for Study 1. Readers primarily interested in theoretical contributions and policy implications may proceed to the summary discussion in Section 4.3 without loss of conceptual continuity. The key finding is that inflation-adjusted poverty levels—rather than infrastructure, administrative efficiency, or population pressure—emerge as the most consistent predictor within this analysis of metropolitan financial sustainability.

Descriptive statistics reveal substantial variation in financial sustainability across Gauteng metropolitan municipalities during 2008–2019 (M = 54.82, SD = 22.14, Range = 8.50–89.20). This variation provides an adequate basis for identifying predictor-outcome relationships (Kroukamp, 2014; Mbulawa, 2019). Independent variables similarly demonstrate appropriate variation: poverty rates range from 6.87% to 51.66% (M = 29.88%), unemployment from 11.83% to 36.24% (M = 23.49%), and basic services expenditure from R1.16m to R1.89m per capita.

Correlation analysis reveals striking bivariate relationships. Inflation poverty lines demonstrate an extremely strong correlation with financial sustainability ($r = 0.937$, $p < 0.001$). Infrastructure quality ($r = 0.948$, $p < 0.001$) and basic services ($r = 0.85$, $p < 0.01$) show similarly high bivariate correlations, indicating interconnected relationships among sustainability determinants. The high bivariate correlations indicate substantial multicollinearity among predictors, motivating the use of the stepwise procedure to identify variables providing unique explanatory contribution. These correlations should be interpreted with caution: in developing economy contexts, many fiscal and socioeconomic indicators share common time trends, and the observed co-movements may partly reflect shared temporal trajectories rather than direct causal relationships (Hendrick & Degnan, 2020; Jimenez & Afonso, 2022).

The stepwise regression identified inflation poverty lines (IPL) as the sole variable meeting inclusion criteria for the final model. Table 1 presents the model summary and coefficient results.

Table 1: Metropolitan Financial Sustainability – Stepwise Regression Results

Parameter	Value	Statistic	p-value	
R (Multiple Correlation)	0.668	–	–	
R^2 (Explained Variance)	0.446	–	–	
Adjusted R^2	0.390	–	–	
F-statistic	–	F(1,10) = 8.047	0.018*	

Durbin-Watson	1.935	–	–	
Standardised β (IPL)	0.668	t = 2.837	0.018*	
Unstandardised β (IPL)	2,382,524.54	SE = 839,910.05	0.018*	

Note: *p < 0.05. IPL = Inflation Poverty Lines. Excluded variables: Basic Municipal Services (p = 0.907), Total Population (p = 0.990), Unemployment Rate (p = 0.260), Infrastructure Quality (p = 0.162).

The parsimonious one-predictor model explains 44.6% of variance in financial sustainability—substantial explanatory power for social science contexts—and the model is statistically significant ($F(1,10) = 8.047$, $p = 0.018$). The standardised coefficient ($\beta = 0.668$) indicates a strong association between inflation-adjusted poverty levels and financial sustainability scores. However, the direction and magnitude of this relationship should be interpreted cautiously because both variables follow time trends in developing economy contexts, and the small sample size ($n = 33$) limits the precision of coefficient estimates.

Crucially, four variables failed to enter the model: basic municipal services, total population, unemployment rate, and infrastructure quality. All demonstrate non-significant partial effects ($p > 0.10$) after accounting for variance explained by poverty levels. This suggests that poverty either mediates the effects of these variables or that their bivariate relationships with financial sustainability reflect shared temporal trends rather than independent causal mechanisms. Given strong inter-correlations among predictors, caution is warranted in interpreting individual variable contributions (Inman & Rubinfeld, 1997; Mbulawa, 2019).

Because both fiscal indicators and poverty measures exhibit time trends in developing economies, the results should be interpreted as structural associations rather than established causal relationships. Causal inference would require longer time series, exogenous variation in poverty conditions, or experimental research designs not feasible in this institutional context. The consistency of findings across two independent empirical analyses strengthens confidence that the observed relationships reflect underlying institutional constraints rather than purely statistical artefacts.

4.2 Study 2: Structural Constraints to Sustainable Development

The capabilities-based framework analysis reveals that basic human needs deprivation (BND) exerts the strongest and most consistent negative association with sustainable development outcomes (Alkire, 2005; Nussbaum, 2011). Table 2 presents the OLS estimation results.

Table 2: Structural Constraints to Sustainable Development – OLS Estimation Results

Variable	Coefficient (β)	t-statistic	p-value	
Basic Needs Deprivation (BND)	Negative, substantial	Significant	< 0.05	
Income Poverty (PVT)	Non-significant	< 1.5	> 0.10	
Unemployment Rate (UNE)	Non-significant	< 1.5	> 0.10	
Infrastructure Quality (INQ)	Non-significant direct	< 1.5	> 0.10	
Population Growth (PGR)	Positive, marginal	Marginally significant	~ 0.10	

Note: VIF diagnostics confirm multicollinearity within acceptable bounds. Robustness checks confirm coefficient stability across alternative specifications.

The finding that income poverty and unemployment show no statistically significant direct effects—once basic needs deprivation is accounted for—suggests that their influence operates primarily through foundational capability channels rather than through income or labour market pathways alone. This is consistent with capabilities theory, where income is a means to human capability (Sen, 1999; Robeyns, 2005; Nussbaum, 2011).

Population growth shows a positive but marginally significant relationship with sustainable development, consistent with demographic dividend mechanisms when population expansion occurs under supportive institutional and infrastructural conditions (United Nations, 2018). This finding diverges from fiscal stress theory predictions emphasising population pressure as a fiscal stressor (Inman & Rubinfeld, 1997), suggesting that population effects are context-dependent rather than uniformly negative.

Robustness checks across alternative specifications confirm the stability of the basic needs deprivation coefficient, supporting confidence in the central finding despite the short time-series dimension. VIF diagnostics confirm multicollinearity within acceptable bounds, though high inter-correlations among predictors necessitate cautious interpretation of individual coefficient magnitudes (Hendrick & Degnan, 2020). These results should be read alongside the data vintage caveat noted in Section 3.1: the post-2019 period introduced substantial fiscal shocks that may affect the precise magnitude of estimated relationships, though the structural primacy of basic

needs deprivation is expected to remain a persistent feature of African metropolitan fiscal dynamics.

4.3 Convergent Findings Across Studies

The two studies reveal striking convergences that motivate the integrated framework developed in Section 5. First, both analyses identify demand-side socioeconomic conditions—poverty concentration in Study 1, basic needs deprivation in Study 2—as dominant constraints on fiscal and development outcomes, consistently outperforming supply-side variables (Watson & Hassett, 2016). Second, both analyses find that infrastructure quality, unemployment, and population variables fail to demonstrate significant independent effects once poverty-related variables are included, suggesting mediated rather than direct effects (Hendrick & Degnan, 2020). Third, both studies ground their findings in South African emerging economy contexts characterised by high inequality, rapid urbanisation, and post-colonial infrastructure legacies (South Africa, 1996; Auditor-General of South Africa, 2020; Manuel & Erasmus, 2024).

These convergences across different units of analysis (municipal vs. national), different dependent variables (financial sustainability vs. sustainable development), and different theoretical frameworks (fiscal federalism/stress vs. capabilities) provides strong indicative evidence for the primacy of demand-side socioeconomic constraints in shaping African urban fiscal and development trajectories. It should be noted, however, that both studies draw on South African data. The extent to which these findings generalise to other African metropolitan contexts—which may differ substantially in institutional design, colonial heritage, and fiscal architecture—requires caution, and multi-country comparative research is warranted (Bahl & Bird, 2018; Roy, 2018).

5. THE FISCAL CAPABILITY FRAMEWORK: AN INTEGRATED THEORETICAL CONTRIBUTION

5.1 Framework Architecture

The convergent empirical findings motivate development of what we term the Fiscal Capability Framework (FCF)—an integrated analytical architecture that bridges fiscal federalism, fiscal stress, and capabilities traditions to explain metropolitan fiscal sustainability in emerging economy contexts (Inman & Rubinfeld, 1997; Sen, 1999; Oates, 2005; Alkire, 2005).

The FCF posits three core propositions. First, metropolitan fiscal sustainability is fundamentally determined by household capability conditions rather than by municipal administrative

characteristics or supply-side infrastructure endowments (Sen, 1999; Nussbaum, 2011). When substantial population proportions lack access to basic human needs—and therefore cannot generate the income streams from which municipal service charges would ordinarily be recovered—fiscal sustainability becomes structurally constrained regardless of billing system efficiency or infrastructure investment levels (Mbulawa, 2019; Auditor-General of South Africa, 2020).

Second, poverty and basic needs deprivation operate as mediating variables through which other commonly cited fiscal determinants—unemployment, infrastructure deficits, population growth—exert their effects on metropolitan fiscal outcomes (Alkire, 2005; Robeyns, 2005). This mediation structure explains why supply-side variables consistently fail to demonstrate significant direct effects in the empirical analyses: their fiscal consequences operate through demand-side affordability channels that poverty variables capture more directly (Hendrick & Degnan, 2020; Kim & Warner, 2021).

Third, the poverty-fiscal sustainability nexus creates self-reinforcing cycles that require systemic intervention rather than incremental administrative improvement (Inman & Rubinfeld, 1997; Mbulawa, 2019). High poverty is associated with reduced municipal revenue, which may in turn constrain service delivery investment, which perpetuates poverty by limiting economic development opportunities, which further reduces revenue—a poverty trap operating at the metropolitan fiscal level (Kroukamp, 2014). The framework therefore interprets municipal fiscal sustainability as an institutional outcome of socioeconomic structure rather than solely as a product of administrative capacity. This dynamic implies that technical assistance focused on revenue administration or infrastructure management generates limited sustainability gains when fundamental affordability constraints remain unaddressed (Watson & Hassett, 2016).

5.2 Connections to Global Disruption

The FCF framework situates metropolitan fiscal sustainability within the global disruption context emphasised by the AABD conference theme. Climate change intensifies the poverty-fiscal cycle by generating infrastructure damage in informal settlements where poverty concentrates, requiring emergency expenditure that further strains municipal finances while simultaneously deepening household poverty through livelihood disruption (United Nations, 2024). Climate adaptation investments—flood defences, drought-resilient water systems, heat island mitigation—generate

benefits disproportionately concentrated in low-income neighbourhoods but require upfront capital investment that fiscally stressed municipalities struggle to fund (Kim & Warner, 2021).

Digital transformation creates analogous tensions. Revenue administration digitalisation—smart meters, mobile payment systems, automated credit control—offers efficiency gains that could partially offset poverty-driven revenue constraints (Kim & Warner, 2021). However, digital infrastructure requires capital investment and technical capacity that fiscally constrained municipalities lack. Digital service delivery innovations could reduce operating costs but risk excluding the poor residents who most need service access yet lack digital literacy or device access. The FCF framework suggests that digital transformation strategies must explicitly address affordability constraints or risk exacerbating existing fiscal inequalities (Rusca & Schwartz, 2018).

Geopolitical disruptions—commodity price shocks, exchange rate volatility, global supply chain disruptions—affect African metropolitan municipalities primarily through household income channels (United Nations, 2024). When commodity price shocks reduce household real incomes, municipal service payment compliance deteriorates simultaneously with demand for emergency relief services, amplifying fiscal stress in precisely the high-poverty municipalities where resilience is most limited. The FCF's emphasis on demand-side conditions provides analytical tools for understanding how global disruptions transmit into local fiscal crises (Bahl & Bird, 2018).

5.3 Positioning Against Existing Literature

The FCF framework makes several contributions to existing theoretical conversations. Against conventional fiscal federalism theory, the framework emphasises demand-side affordability constraints as determinants of local fiscal outcomes that operate independently of—and in this empirical context more powerfully than—revenue authority architecture or expenditure assignment efficiency (Tiebout, 1956; Oates, 2005). This reorients policy prescriptions from decentralisation reform toward poverty alleviation and intergovernmental transfer redesign (Slack & Bird, 2013; Bahl & Bird, 2018).

Against fiscal stress theory, the FCF extends the poverty-fiscal stress connection across a broader temporal and analytical frame, demonstrating that poverty effects on metropolitan fiscal sustainability operate through capability channels that persist across economic cycles rather than manifesting only during acute fiscal crises (Inman & Rubinfeld, 1997; Mbulawa, 2019). This

temporal persistence implies that fiscal stress frameworks require capabilities-informed extensions to capture chronic rather than cyclical fiscal stress in high-poverty metropolitan contexts.

Against the capabilities literature, the FCF operationalises capabilities theory in explicitly fiscal terms, demonstrating how capability deprivations translate into municipal revenue shortfalls through quantifiable mechanisms (Alkire, 2005; Robeyns, 2005; Nussbaum, 2011). This operationalisation bridges abstract capability theory and applied urban finance policy in ways that facilitate evidence-based recommendations for metropolitan fiscal governance reform.

5.4 Organisational Transformation Under Local and Global Disruptions

The findings can be interpreted through an organisational lens consistent with the AABD conference theme. African metropolitan municipalities operate at the intersection of local socioeconomic conditions and global economic pressures. External disruptions—including commodity price volatility, inflationary shocks, climate events, and technological change—affect municipalities primarily through their impact on household affordability (United Nations, 2024). Because municipal revenues depend heavily on user charges and property-related payments, global shocks are transmitted into local fiscal stress through declining payment compliance and rising service demand (Bahl & Bird, 2018; Kim & Warner, 2021).

This mechanism indicates that African organisations are systemically interconnected: household welfare, municipal fiscal capacity, and firm performance form a mutually dependent institutional system. Businesses depend on reliable infrastructure and administrative capacity; municipalities depend on household payment capacity; and households depend on employment generated by firms (Roy, 2018; Slack & Bird, 2013). Poverty weakens this system by disrupting the financial flows linking these organisational actors (Kroukamp, 2014).

Organisational transformation in Africa therefore requires not only internal managerial reform but also institutional strategies that address structural affordability constraints (Watson & Hassett, 2016). Strengthening municipal fiscal capacity becomes a prerequisite for resilient business environments and effective adaptation to global disruptions. Unreliable municipal services increase firms' operating costs through private water provision, backup electricity generation, and logistical delays, directly reducing productivity and competitiveness (Rusca & Schwartz, 2018).

6. POLICY IMPLICATIONS FOR AFRICAN METROPOLITAN GOVERNANCE

6.1 Intergovernmental Transfer Reform

A central policy implication of these findings concerns intergovernmental transfer architecture. Current equitable share formulae in South Africa—and analogous transfer systems across many African countries—allocate nationally-collected revenues to municipalities based primarily on population size, basic service provision, and administrative capacity measures (South Africa, 1996; Bahl & Bird, 2018). These formulae inadequately compensate municipalities serving high-poverty populations for the fiscal burden imposed by affordability constraints on revenue mobilisation (Kroukamp, 2014; Auditor-General of South Africa, 2020).

The FCF framework motivates transfer reform that explicitly incorporates poverty concentration and basic needs deprivation as allocation criteria. A reformed formula should ensure that municipalities serving predominantly poor populations receive transfers sufficient to achieve both service delivery mandates and fiscal sustainability, explicitly recognising that poverty creates structural revenue gaps that administrative improvement cannot bridge (Mbulawa, 2019; Manuel & Erasmus, 2024). International experience with needs-based transfer systems—including fiscal equalisation mechanisms in Germany, Australia, and Canada—provides design precedents that African policy architects could adapt to continental contexts (Slack & Bird, 2013).

Beyond formula reform, national governments should explore mechanisms for assuming greater direct responsibility for poverty-related service provision in metropolitan areas. Cash transfer programmes targeting urban poor households could reduce municipal expenditure pressure while simultaneously enhancing household payment capacity—a dual dividend that fiscal stress theory predicts and capabilities theory endorses as capability-enhancing intervention (Sen, 1999; Nussbaum, 2011). National employment guarantee or public works programmes deployed in metropolitan contexts offer similar dual dividends.

6.2 Progressive Revenue Design

Metropolitan municipalities must reconsider conventional revenue collection approaches in light of the affordability constraint primacy identified in these studies. Traditional revenue optimisation strategies—improved billing systems, expanded credit control, disconnection enforcement—generate diminishing returns when fundamental affordability constraints bind (Mbulawa, 2019). More productive approaches treat poverty as a structural condition requiring adaptive revenue design rather than enforcement intensification (Watson & Hassett, 2016).

Progressive tariff structures offer a proven mechanism for reconciling fiscal sustainability with affordability (Bahl & Bird, 2018). Cross-subsidisation approaches—charging higher rates to commercial and high-income residential users while providing lifeline tariffs or free basic allotments to low-income households—maintain aggregate revenue adequacy while protecting affordability for poverty-constrained households. Effective implementation requires administrative systems capable of means-testing and consumption-based differentiation, investments that may require national technical assistance support for smaller metropolitan administrations.

Partnerships with employers for bulk service provision and payroll deduction payment systems offer another adaptive mechanism particularly relevant to formal-sector workers in high-poverty metropolitan areas. Prepaid service technologies—smart prepayment meters that enable households to control consumption within available budgets—reduce non-payment risk while preserving service access for income-constrained households (Kim & Warner, 2021). Community-based payment facilitation through savings groups or community organisations leverages social capital for improving collection rates in informal settlement contexts where household-level collection proves difficult (Rusca & Schwartz, 2018).

6.3 SDG-Aligned Urban Investment Strategies

The capabilities-based findings underscore that infrastructure investment strategies must be explicitly evaluated for poverty alleviation and capability-enhancement effects, not merely for service delivery efficiency (Alkire, 2005; Nussbaum, 2011). The finding that basic human needs deprivation operates as the dominant constraint on sustainable development—more powerful than income poverty or unemployment—implies that investments in water, sanitation, housing, and nutrition infrastructure generate sustainability returns that extend well beyond direct service delivery improvements (United Nations, 2015; Rusca & Schwartz, 2018).

SDG 11 (Sustainable Cities) objectives provide an internationally recognised framework for orienting metropolitan infrastructure investment toward capability-enhancing outcomes (United Nations, 2015, 2024). Municipalities aligning capital budgeting with SDG 11 targets simultaneously advance fiscal sustainability goals (by reducing poverty-driven revenue constraints over time) and international development commitments. National government capital grants

should include SDG alignment criteria that incentivise capability-enhancing over efficiency-optimising investment choices.

The digital transformation context creates specific opportunities for capability-enhancing investment in African metropolitan areas. Mobile money platforms and digital identity systems reduce transaction costs for service payment in informal economy contexts, potentially improving revenue collection efficiency while extending service access to previously excluded households (Kim & Warner, 2021). Geographic Information System applications for informal settlement mapping enable more equitable service extension planning. These digital investments can generate both fiscal efficiency and capability-enhancement returns when designed with explicit affordability and inclusion mandates (Rusca & Schwartz, 2018).

6.4 Implications for African Business and Investment

The FCF framework carries direct implications for businesses operating in African metropolitan contexts, relevant to the AABD conference's emphasis on business resilience amid global disruption. Urban poverty concentration creates market constraints for consumer-facing businesses—reduced household purchasing power, limited credit access, constrained market depth—that parallel and compound municipal fiscal constraints (Slack & Bird, 2013; Roy, 2018). Business strategies that address affordability constraints—through affordable product variants, micro-credit partnerships, or employer-assisted payment schemes—simultaneously expand market access and enhance metropolitan fiscal sustainability by increasing household economic participation.

Infrastructure investors face particular strategic implications. The finding that infrastructure quality does not demonstrate statistically significant independent effects within this model on fiscal sustainability—despite strong bivariate associations—suggests that infrastructure investment returns are mediated by household affordability conditions (Watson & Hassett, 2016). Infrastructure projects that enhance economic opportunities for poor residents—public transport connecting informal settlements to employment centres, business development infrastructure in economically depressed neighbourhoods—likely generate stronger combined fiscal and commercial returns than infrastructure focused exclusively on engineering efficiency (Kim & Warner, 2021).

Financial sector participants face both risks and opportunities. Metropolitan municipalities facing poverty-driven fiscal stress represent elevated credit risk that conventional creditworthiness assessments based on revenue performance may inadequately capture (Jimenez & Afonso, 2022). Developing poverty-adjusted fiscal sustainability metrics for municipal bond assessments could improve pricing accuracy and risk management. Simultaneously, financial innovation targeting the underbanked urban poor—mobile banking, micro-insurance, nano-credit—addresses the demand-side affordability constraints that underlie metropolitan fiscal stress, potentially creating complementary commercial and developmental value (Roy, 2018).

7. CONCLUSION

This paper synthesises two empirical studies to develop an integrated theoretical and policy framework for metropolitan fiscal sustainability in African emerging economy contexts. The central empirical finding—that demand-side socioeconomic conditions, particularly poverty concentration and basic human needs deprivation, appear to exert stronger and more consistent effects than supply-side infrastructure and administrative variables as predictors of both metropolitan fiscal sustainability and broader sustainable development outcomes—challenges conventional governance frameworks and motivates fundamental rethinking of metropolitan fiscal policy (Watson & Hassett, 2016; Mbulawa, 2019; Auditor-General of South Africa, 2020).

The Fiscal Capability Framework developed here bridges fiscal federalism, fiscal stress, and capabilities traditions to provide an integrated architecture for understanding how poverty-fiscal dynamics operate in African metropolitan municipalities (Inman & Rubinfeld, 1997; Sen, 1999; Alkire, 2005; Oates, 2005). The framework posits that fiscal sustainability is fundamentally determined by household capability conditions, that poverty mediates the fiscal effects of other commonly cited variables, and that poverty-fiscal cycles require systemic rather than incremental policy responses.

In an era characterised by the global disruptions highlighted by the AABD conference—climate change, geopolitical volatility, digital transformation—the poverty-fiscal nexus takes on particular urgency (United Nations, 2024). These disruptions transmit into African metropolitan fiscal systems primarily through household income and affordability channels, amplifying existing structural vulnerabilities and compressing already-constrained fiscal space. Effective metropolitan

governance under contemporary global disruption therefore requires confronting the affordability constraint primacy that these empirical analyses demonstrate.

The policy recommendations derived from the FCF framework—intergovernmental transfer reform incorporating poverty criteria, progressive revenue design adapting to affordability realities, SDG-aligned investment strategies prioritising capability-enhancing infrastructure (United Nations, 2015, 2024)—provide actionable pathways for strengthening African metropolitan fiscal sustainability while advancing broader development objectives. Implementing these recommendations requires political will at national level, technical capacity at municipal level, and coordinated engagement from business and financial sector actors who both depend on and contribute to metropolitan economic vitality (Slack & Bird, 2013; Bahl & Bird, 2018).

Organisational resilience in Africa cannot be analysed at the firm level alone. The performance of businesses is embedded in the fiscal capacity of metropolitan municipalities that provide the infrastructure and regulatory systems enabling economic activity (Roy, 2018). Addressing urban poverty therefore becomes central to organisational transformation and competitiveness in African economies (Kim & Warner, 2021).

Limitations and future research directions. Several limitations of this study warrant explicit acknowledgment. First, both datasets extend only to 2019, and the significant fiscal disruptions of the post-2019 period—including the COVID-19 pandemic, geopolitical commodity shocks, and intensifying climate impacts—are not captured in the estimation data. Recommendations should be understood as grounded in pre-pandemic structural conditions, and future research updating the dataset to 2024 or 2025 would substantially strengthen the applicability of findings to current policy contexts (United Nations, 2024). Second, the small metropolitan sample (n = 33 observations from three municipalities) limits statistical representativeness and the precision of coefficient estimates, necessitating cautious generalisation. Third, the presence of multicollinearity among socioeconomic indicators—particularly poverty, infrastructure, and service delivery variables—restricts the strength of causal inference, and results should be interpreted as indicative structural associations rather than established causal effects. Fourth, both studies draw exclusively on South African data; the country's unique institutional context, shaped by the apartheid legacy of spatially segregated infrastructure and a highly centralised intergovernmental fiscal system, may limit direct transferability to other African metropolitan contexts characterised by different

colonial inheritances and fiscal architectures (Bahl & Bird, 2018; Roy, 2018). Generalisation to other African cities should therefore proceed with caution.

Future research should extend the FCF framework to multi-country panel analysis across African metropolitan municipalities, test the framework's applicability across different institutional contexts and colonial legacies, examine mediation pathways connecting basic needs deprivation to fiscal sustainability outcomes, incorporate post-2019 data to assess the fiscal consequences of pandemic disruption and subsequent shocks, and evaluate the fiscal returns to capability-enhancing infrastructure investment. Such research agendas would strengthen both the theoretical foundations and practical applicability of integrated fiscal-capability approaches to African metropolitan governance.

As African economies confront simultaneous local and global disruptions, the capacity of metropolitan institutions becomes central to organisational resilience and economic transformation. Businesses, labour markets, and investment ecosystems depend on the reliability of the urban systems within which they operate (Slack & Bird, 2013). The findings of this study therefore suggest that strengthening municipal fiscal capacity is not only a public sector governance objective but a prerequisite for competitive and sustainable African business environments. Understanding the poverty–fiscal sustainability relationship is thus essential for explaining how African organisations adapt, survive, and grow under conditions of global change (United Nations, 2024).

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RECONCEPTUALISING ORGANISATIONAL RESILIENCE IN AFRICAN SMES: LESSONS FROM GLOBAL SUSTAINABILITY FRAMEWORKS

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Introduction

The contemporary business landscape is defined by systemic volatility, uncertainty, complexity, and ambiguity (VUCA), compelling small and medium-sized enterprises (SMEs) to develop new adaptive capabilities. Conventional management models have proven fragile against interconnected disruptions such as climate change, pandemics, and geopolitical instability. Global supply chains now demand "just-in-time for turbulent times" capabilities (Choi, Netland, & Sanders, 2023), while the COVID-19 pandemic exposed deep structural vulnerabilities in entrepreneurial ecosystems, particularly in developing regions (Belitski et al., 2022). Further, escalating geopolitical tensions have restructured global trade, creating ripple effects on procurement and market access (Rasshyvalov et al., 2024). Climate change compounds these threats, making environmental adaptation central to organisational survival (Olson, 2020). In this context, resilience and strategic adaptation are mutually reinforcing capabilities that enable firms to "thrive in turbulence" (Malik & Terzidis, 2025), positioning resilience not as a reactive measure but as a foundational capability embedded within sustainable business models. Organisational resilience—the ability to anticipate, absorb, and adapt to disruptions—is increasingly viewed as a sustainability-oriented dynamic capability. Resilient firms do not merely recover but evolve toward more sustainable equilibria (Weber, 2023), leveraging dynamic managerial capabilities like digitalisation and green innovation to withstand systemic shocks (Tran & Vo Thai, 2025). Resilience practices enhance socio-economic sustainability by fostering flexibility and stakeholder collaboration (Rai, Rai, & Singh, 2021), and SMEs that follow a sustainability path achieve superior adaptability (Damiano & Valenza, 2025). This reciprocal relationship is also evident in family businesses, where ethical stewardship underpins adaptive capacity (Mörth & Kuttner, 2025). This study conceptualises resilience as a composite of strategic foresight, adaptive capacity, and inclusive governance, aligning with the dynamic capability's perspective (Duchek, 2020; Joussen, Kanbach, & Kraus, 2025) that frames resilience as a process of continuous renewal.

The resilience literature is theoretically diverse, viewing the concept as a capacity developed through strategic human resource management (Lengnick-Hall, Beck, & Lengnick-Hall, 2011), a multi-dimensional construct (Hepfer & Lawrence, 2022), a complex social process (Hollands, Haensse, & Lin-Hi, 2024), a dynamic capability within complex adaptive systems (Khan & Khan, 2019), and an event-oriented response (Minniti, Rodriguez, & Williams, 2025). Prayag, Chowdhury, and Orchiston (2023) showed how tourism firms leveraged flexibility and social capital during COVID-19. Duchek's (2020) capability-based framework, which encompasses anticipation, coping, and adaptation, helps synthesize these varied strands. Concurrently, sustainability and resilience are recognised as mutually reinforcing paradigms. This requires systems thinking to address interconnected challenges (Weaver, Fonseca, & Tan, 2025) and challenges unsustainable economic models (Olson, 2020). The triple bottom line remains the core of sustainable development (Shahrahmani et al., 2025), with creative destruction driving sustainability transitions (Kivimaa & Kern, 2016). In Africa, SMEs are vital to economic

growth but remain disproportionately exposed to disruptions. Studies show that ambidextrous innovation (Okrah, Boso, & Mensah, 2025), financial resilience (Atiase et al., 2023), crisis management (Chasaya & Ayandibu, 2025), strategic planning (Ibidunni, Oyewo, & Nwokedike, 2025), and ethical governance (Nketsiah & Van der Westhuizen, 2025) are critical for survival and performance. However, African SMEs often exhibit adaptive ingenuity while lacking institutional support for systematic resilience-building. This highlights a critical research gap. This study addresses the question: How can global sustainability frameworks inform the conceptualisation of organisational resilience for African SMEs facing local and global disruptions? By bridging global sustainability frameworks and local entrepreneurial realities, this paper contributes a novel conceptual framework—Resilience through Sustainability (RtS)—that integrates global knowledge with local contextual needs to guide policy, practice, and future research.

Literature Review

Theorising Organisational Resilience

The concept of organisational resilience has evolved from a reactive notion of survival to a proactive capability for continuous adaptation and renewal. Duchek (2020) positions resilience as a *capability-based process*, encompassing anticipation, coping, and adaptation phases that enable organisations to respond effectively to crises and uncertainties. Hepfer and Lawrence (2022) add nuance by identifying the heterogeneity of resilience across *functional, operational, and strategic* levels, arguing that organisations exhibit diverse resilience patterns depending on leadership cognition and structural design. This multi-level framing is particularly useful for SMEs, where informal processes and limited hierarchies often blur distinctions between operational and strategic responses. Lengnick-Hall, Beck, and Lengnick-Hall (2011) provided one of the foundational articulations of resilience as a *strategic human resource capability*, developed through learning, flexibility, and a supportive culture. Their work laid the groundwork for understanding resilience not as a fixed trait but as a dynamic and socially constructed capacity. Khan and Khan (2019) echo this by conceptualising resilience within *complex adaptive systems*, where feedback loops and non-linear dynamics enable organisations to restore equilibrium in response to environmental stressors. Hollands, Haensse, and Lin-Hi (2024) extends this thinking by exploring the "how and why" of resilience, framing it as a collective behavioural process shaped by sensemaking, leadership, and cultural adaptation. From a dynamic capabilities' lens, Joussen, Kanbach, and Kraus (2025) synthesise the literature on strategic change, highlighting that resilience emerges from an organisation's ability to integrate and reconfigure resources under uncertainty. Prayag, Chowdhury, and Orchiston (2023) empirically demonstrate this in the tourism industry during the COVID-19 crisis, showing that dynamic capabilities—especially flexibility and relational capital—enhanced firms' adaptive responses. Minniti, Rodriguez, and Williams (2025) conceptualise resilience as *event-oriented*, where responses are shaped by timing, structural constraints, and path dependencies. Taken together, these perspectives converge on a shared understanding of resilience as a processual and context-dependent construct that depends on organisational learning, leadership sensemaking, and environmental alignment. However, much of the resilience literature remains concentrated on large organisations in developed economies, with limited attention to the institutional and resource constraints faced by SMEs in emerging markets. This imbalance underscores the need for context-specific models that integrate global theoretical insights with local realities, particularly for African enterprises navigating systemic turbulence.

Sustainability and Resilience Intersections

The interrelationship between sustainability and resilience has gained increasing academic and practical prominence. Weaver, Fonseca, and Tan (2025) advocate adopting a systems thinking perspective that elevates "systems consciousness," recognising that sustainability challenges are inherently complex and interdependent. Olson (2020) argue that resilience thinking can transform unsustainable economic rationalities by fostering adaptability, feedback awareness,

and systemic learning. This resonates with the *triple bottom line* framework (Shahrahmani et al., 2025), which integrates social, environmental, and economic dimensions into a holistic model of organisational performance. Kivimaa and Kern (2016) interpret sustainability transitions through the lens of *creative destruction*, suggesting that crises can catalyse innovation and systemic renewal. This view implies that disruptions are not merely threats but potential catalysts for sustainability transformation, particularly when organisations use them as triggers for adaptive innovation. D'Amato, Toppinen and Kozak (2023) expand this perspective by positioning business as an active agent in driving both sustainability and resilience, emphasising ethical governance and long-term value creation. Recent literature also underscores the role of digitalisation and innovation as enablers of sustainability–resilience integration. Cihan (2025) highlights the cognitive paradoxes in managerial decision-making during disruptions, arguing that balancing efficiency with sustainability requires higher-order strategic reasoning. Wijaya et al., (2025) identify leadership, culture, and digital marketing as critical enablers of sustainability performance, while Florek-Paszkowska and Ujwary-Gil (2025) propose a *digital–sustainability ecosystem* in which digital transformation accelerates sustainable innovation. Van Staveren (2025) add an intersectional dimension, showing that inclusive and gender-balanced leadership enhances organisational sustainability outcomes, particularly under uncertainty. Shahrahmani et al., (2025) further advance sustainable entrepreneurship as a driver of social and environmental impact, linking entrepreneurial dynamism with societal resilience. Together, these studies demonstrate a growing consensus that sustainability and resilience are mutually reinforcing sustainability provides the normative and strategic orientation for resilience, while resilience operationalises sustainability through adaptive mechanisms. From this perspective, organisational resilience can be understood not only as an operational response to crisis but as a long-term strategic capability that sustains environmental and social equilibrium. For African SMEs, integrating sustainability into resilience offers dual benefits—enhancing adaptive capacity while aligning with global sustainability agendas such as the UN Sustainable Development Goals (SDGs).

Resilience in African SMEs

While the resilience–sustainability nexus has been widely explored in global contexts, African SMEs face distinctive structural and institutional realities that necessitate contextual reinterpretation. Okrah, Boso, and Mensah (2025) demonstrate that ambidextrous innovation—balancing exploratory and exploitative strategies—enables sub-Saharan African firms to maintain competitiveness in turbulent markets. Their configurational analysis reveals that resource diversity and innovation complementarity underpin resilience in volatile environments. Atiase, Agbanyo, Ganza, and Ameh (2023) examine SME financial resilience, highlighting how diversified financing sources, prudent liquidity management, and social capital strengthen survival during crises. Their findings indicate that financial resilience is both a technical and relational construct, reliant on stakeholder trust and institutional legitimacy. Chasaya and Ayandibu (2025) explore crisis management in South African SMEs post-COVID-19, identifying leadership agility, scenario planning, and digital continuity as critical determinants of post-crisis recovery. Similarly, Ibidunni, Oyewo, and Nwokedike (2025) show that strategic planning capabilities and firm-level learning processes underpin resilience and performance. Governance and leadership also emerge as critical resilience determinants. Nketsiah and Van der Westhuizen (2025) highlight that sustainable decision-making and ethical leadership enhance organisational legitimacy and long-term survival. However, their study also reveals a gap: while governance quality is vital, many SMEs lack formal structures or access to institutional support mechanisms that reinforce sustainable practices. Across these studies, a consistent pattern emerges—African SMEs exhibit *informal resilience*, rooted in improvisation, social networks, and entrepreneurial learning rather than formalised risk management systems. This adaptive improvisation provides short-term agility but often lacks strategic coherence for sustained transformation. Bridging this gap requires integrating global sustainability frameworks with local business logics to foster structured yet flexible resilience pathways.

Lessons from Global Sustainability Frameworks

Major policy frameworks provide guiding principles that can inform resilient and sustainable organisational design. The UK Government's Resilience Framework (Cabinet Office / Government) sets out systemic approaches to strengthen national and organisational resilience, emphasising anticipatory governance, whole-system thinking, and cross-sectoral cooperation to manage chronic vulnerabilities and acute shocks. The UK guidance stresses building capabilities across prevention, preparedness, response, and recovery, and encourages departments and public bodies to embed resilience functions in organisational planning (UK Government Resilience Framework; Organisational Resilience Guidance) (HM Government, 2022; Uk Resilience Academy, 2025). The European Union's Green Deal policy similarly advocates for integrated resilience through digitalisation, circular economy transitions, and social inclusion (European Commission, 2019). At the global level, the United Nations' Sustainable Development Goals (SDGs) provide normative linkages between social, economic, and environmental objectives that inform long-term organisational priorities. The SDGs' integrated approach supports alignment of firm-level strategies with broader development goals (e.g., decent work, industry and innovation, climate action), thereby offering a normative scaffold for resilience that emphasises sustainability outcomes. These frameworks share a common emphasis on multi-level governance, stakeholder participation, and adaptive innovation—principles that can inform resilience-building in African SMEs. While these global frameworks offer valuable heuristics—anticipatory governance, multi-stakeholder engagement, circularity, and digital readiness—their direct transplantation to African SMEs risks ignoring contextual asymmetries (infrastructure, finance, regulatory capacity). Therefore, the utility of these frameworks lies in *localised translation*: adapting principles (not prescriptions) to fit the institutional capacities and cultural logics of African SMEs. This implies reframing global guidance into modular, scalable interventions—policy instruments, finance mechanisms, and capability building—that respect local resource constraints and informal resilience practices. Weber (2023) and Damiano and Valenza (2025) suggest that sustainability-oriented resilience is not a "one-size-fits-all" model but must evolve through contextual learning. For example, Mörth and Kuttner (2025) demonstrate that family-owned SMEs build resilience by embedding sustainability values into everyday decision-making, creating socio-emotional wealth that stabilises long-term orientation. This principle—embedding sustainability as cultural capital rather than regulatory compliance—could guide African SMEs in constructing endogenous forms of resilience. By leveraging global sustainability frameworks as guiding heuristics rather than rigid templates, African SMEs can co-create contextually relevant models of resilience that blend indigenous knowledge, relational governance, and global sustainability standards.

Conceptual Gaps and Theoretical Implications

The reviewed literature collectively highlights a significant theoretical gap. While the interdependence of sustainability and resilience is well established, empirical applications in African SME contexts remain sparse and fragmented. Existing models inadequately capture how resource-constrained enterprises operationalise resilience under systemic instability, nor do they account for the interplay of cultural, institutional, and ecological dynamics that shape African entrepreneurship. From a theoretical standpoint, Duchek's (2020) capability-based framework provides a strong foundation for reconceptualisation but requires integration with sustainability-oriented constructs. Similarly, the systems thinking perspective (Weaver et al., 2025) and triple bottom line framework (Shahrahmani et al., 2025) offer normative anchors that can inform the ethical and strategic dimensions of resilience. Synthesising these perspectives enables the formulation of a holistic conceptual model—*Resilience through Sustainability (RtS)*—which redefines organisational resilience as a dynamic capability rooted in sustainability consciousness. In the RtS model, three interrelated pillars—*adaptive capacity*, *strategic foresight*, and *inclusive governance*—represent the multidimensional pathways through which African SMEs can achieve resilience. Adaptive capacity encompasses innovation, learning, and flexibility (Lengnick-Hall et al., 2011; Prayag et al., 2023); strategic foresight draws from anticipatory governance and scenario planning (Hepfer & Lawrence, 2022; Malik & Terzidis, 2025); and inclusive governance integrates ethical leadership and stakeholder engagement (Nketsiah & Van der Westhuizen, 2025; D'Amato, Toppinen & Kozak, 2023). This

reconceptualisation situates resilience not only as survival amid turbulence but as sustainable transformation—an ongoing process of aligning organisational systems with social, ecological, and economic imperatives.

Methodology

This study adopted a conceptual, desk-based research design, combining a systematic literature review (SLR) with framework synthesis to reconceptualise organisational resilience for African Small and Medium-sized Enterprises (SMEs). The research integrated insights from global sustainability frameworks, including the UK DEFRA Resilience Framework (HM Government, 2022; UK Resilience Academy, 2025), the European Green Deal (European Commission, 2019), and the United Nations Sustainable Development Goals (UN, n.d.), with context-specific studies on African enterprise resilience. The SLR approach, following the principles of Tranfield, Denyer, & Smart (2003), ensured a transparent and replicable process for evidence aggregation. This was complemented by a framework synthesis method to facilitate theoretical integration, leading to the development of a novel conceptual model: Resilience through Sustainability (RtS). Data were sourced from peer-reviewed journals (Scopus, Web of Science, Emerald Insight, ScienceDirect) and policy documents from DEFRA, the European Commission, and the UNDP, spanning from 2010 to 2025. This period was chosen to capture developments in resilience and sustainability before and after major global crises, as noted in studies by Belitski et al. (2022) and Linnenluecke & Griffiths (2015). Search strings included combinations like “organisational resilience” AND “sustainability frameworks” and “SMEs” AND “Africa” AND “resilience.” Inclusion criteria focused on studies addressing organisational resilience linked to sustainability, with relevance to SMEs in developing economies. To maintain rigour, the study excluded papers on individual psychological resilience and used grey literature only for authoritative institutional insights (HM Government, 2022; European Commission, 2019). The three-phase analytical process involved descriptive mapping, thematic synthesis, and framework synthesis. The mapping revealed a dominance of developed-economy studies (Duchek, 2020; Hepfer & Lawrence, 2022) and a scarcity of research on SME resilience in African contexts (Okrah, Boso, & Mensah, 2025; Atiase et al., 2023). Thematic synthesis, following the PRISMA 2020 flow (Page et al., 2021), identified key themes such as capability-based resilience and sustainability-resilience interdependence. The final framework synthesis integrated these themes with the global policy frameworks to construct the RtS model, aligning its pillars with principles from the UK Government, the Green Deal, and the SDGs. Methodological rigour was maintained through transparency, source verification, and analytical triangulation of theoretical (Duchek, 2020), policy (European Commission, 2019), and contextual (Okrah et al., 2025) evidence. Conceptual saturation was achieved as per Snyder (2019). The primary limitation of this study is its reliance on secondary data, which may overlook informal resilience practices in African SMEs. However, the systematic review protocol minimised subjectivity, providing a solid theoretical foundation for future empirical validation.

Findings and Discussion

This section synthesizes the patterns identified from global sustainability frameworks and contextual insights from African SMEs to develop the Resilience through Sustainability (RtS) conceptual model. It discusses the framework's theoretical and practical contributions by localizing global lessons for African enterprise contexts and aligning them with the UN Sustainable Development Goals (SDGs).

Patterns from Global Frameworks: Enablers of Systemic Resilience

A synthesis of the UK Government Resilience Framework, the European Green Deal, and the UN SDGs reveals a convergence around three core enablers: anticipatory governance, sustainability-driven innovation, and integrated systems thinking. These principles offer valuable heuristics for reconceptualising organisational resilience. First, anticipatory governance, central to the UK Resilience Framework (HM Government, 2022), emphasizes a shift from reactive crisis management to proactive risk assessment. The framework's

principles—shared understanding of risks, prevention, and a "whole of society" approach—foster a culture of foresight. For organisations, this translates into developing strategic foresight, where leadership actively scans for emerging trends and vulnerabilities, acknowledging that viability is tied to ecosystem health. Second, sustainability-driven innovation is a cornerstone of the European Green Deal (European Commission, 2019), which operationalizes resilience through circularity, clean technology, and resource efficiency. By framing sustainability as a driver of competitiveness, it encourages business model innovation. The policy's "just and fair transition" highlights resilience's social dimension, aligning with the "triple bottom line" concept where social and environmental performance are integral to economic viability (Shahrahmani et al., 2025). For SMEs, circular economy principles offer a pathway to building resilience by decoupling growth from resource consumption. Third, integrated systems thinking underpins the 2030 Agenda, particularly SDG 8 (Decent Work and Economic Growth) and SDG 9 (Industry, Innovation, and Infrastructure) (UN, n.d.). The SDGs link organisational strategies to global priorities. SDG 9's call to "build resilient infrastructure" explicitly connects resilience with industrial capacity, while SDG 8 promotes inclusive economic growth. The interconnected SDGs encourage a holistic approach where resilience contributes to and benefits from broader socio-economic stability. These global frameworks collectively suggest that organisational resilience is no longer a purely defensive capability. Instead, it is a proactive, transformative, and ethically grounded capacity for navigating complexity. It requires a fusion of strategic foresight (from anticipatory governance), adaptive innovation (from sustainability transitions), and a commitment to shared value creation (from integrated systems thinking).

Contextual Insights from African SMEs: Barriers and Enablers of Resilience

While global frameworks provide a normative orientation for resilience, their principles must be grounded in the lived realities of African SMEs. The literature reveals a landscape where resilience is often informal, reactive, and constrained by significant structural barriers. However, it also highlights unique enablers rooted in entrepreneurial ingenuity and social capital.

Barriers to Resilience

African SMEs navigate a complex web of challenges that impede their ability to build sustainable resilience. Three interconnected barriers are particularly prominent: institutional voids, financing and resource gaps, and infrastructural deficits. First, institutional voids—the absence of robust regulatory and market-supporting institutions—create uncertainty and high transaction costs (North, 1990). African SMEs often face inconsistent government support and lack formal mechanisms for contract enforcement, forcing reliance on informal networks that can limit scalability. Second, financing and resource gaps are a chronic constraint (Atiase et al., 2023). Limited access to affordable capital hinders investment in innovation and strategic foresight, trapping many SMEs in short-term survival cycles. This is compounded by human capital deficits in specialized areas like digital technology and sustainability management. Third, infrastructural deficits in energy, transport, and digital connectivity impose significant operational burdens (Chasaya & Ayandibu, 2025). Unreliable power disrupts production, poor roads increase logistics costs, and limited internet access hampers digital participation. These deficits increase business costs and limit adaptive capacity.

Enablers of Resilience

Despite these barriers, African SMEs demonstrate remarkable resilience, drawing on a unique set of enablers that are often informal and socially embedded. Bricolage and improvisation are central to African SME resilience (Okrah, Boso, & Mensah, 2025). In resource-scarce environments, entrepreneurs creatively combine available resources to solve problems, allowing quick pivoting in the face of disruption. Social capital and relational networks are another critical enabler (Prayag, Chowdhury, & Orchiston, 2023). SMEs rely on trust-based relationships with stakeholders, providing access to information, resources, and mutual support during crises. Finally, entrepreneurial learning and agility characterize successful African SMEs (Ibidunni, Oyewo, & Nwokedike, 2025). Operating in dynamic markets, these firms develop

high capacity for adaptation, constantly scanning their environment and learning from experience. Synthesizing these insights reveals a critical tension between the formal, systematic approach of global frameworks and the informal, improvisational resilience of African SMEs. The challenge is to bridge this gap—honoring adaptive ingenuity while providing structure for long-term, sustainable resilience.

An Integrative Conceptual Model: The Resilience through Sustainability (RtS) Framework

This paper proposes the Resilience through Sustainability (RtS) framework as a context-sensitive approach for African SMEs to build durable resilience. The RtS model redefines organisational resilience not as a defensive reaction to crises, but as a proactive, sustainability-oriented dynamic capability. It integrates the foresight of global frameworks with the adaptive ingenuity of African enterprises, providing a structured pathway for transformation. The RtS framework is built on three interconnected pillars: adaptive capacity, strategic foresight, and inclusive governance. These pillars are mutually reinforcing, and together they enable SMEs to navigate turbulence, create sustainable value, and contribute to broader socio-economic development (see Figure 1 and Tables 1-2).

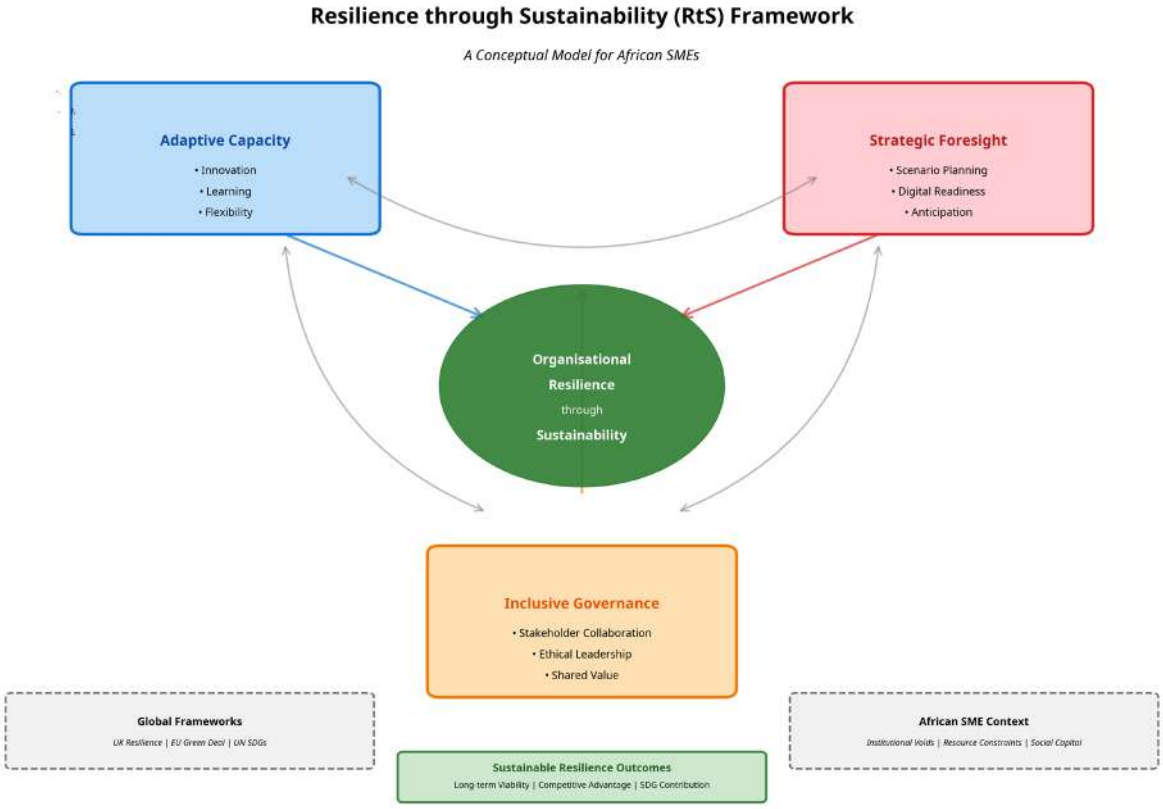


Figure 1: Resilience through Sustainability (RtS) Conceptual Framework

Source: Author's conceptual synthesis (2025), based on HM Government (2022), European Commission (2019), and UN SDGs.

Table 1: *Comparative Analysis of Global Resilience and Sustainability Frameworks and Their Applicability to African SMEs*

Framework	Core Principles	Key Enablers	Applicability to African SMEs	Adaptation Requirements
UK Government Resilience Framework (2022)	• Shared understanding of risks • Prevention and preparation • Whole of society approach	• Anticipatory governance • Cross-sectoral cooperation • Systemic risk assessment • Long-term planning (to 2030)	**High** – Principles of anticipation and prevention are universally relevant; whole-of-society approach aligns with African communal values	• Scale down from national to firm level • Simplify risk assessment tools • Adapt to informal institutional contexts • Develop low-cost scenario planning methods
EU Green Deal (2019)	• Climate neutrality by 2050 • Circular economy • Just and fair transition • Sustainable industrialization	• Innovation and clean technology • Resource efficiency • Stakeholder engagement • Green financing (€275bn+)	**Moderate to High** – Circular economy and innovation principles are highly relevant; just transition aligns with inclusive development goals	• Develop frugal innovation approaches • Adapt circular economy to resource-constrained contexts • Create accessible financing mechanisms • Address digital and infrastructure gaps
UN SDG 8: Decent Work and Economic Growth	• Sustained, inclusive, sustainable growth • Full and productive employment • Entrepreneurship promotion	• Economic sustainability • Productivity enhancement • Innovation • Inclusive growth	**Very High** – Directly addresses African SME priorities; employment generation is core SME contribution; entrepreneurship is central to African economies	• Link resilience strategies to employment stability • Integrate decent work principles into governance • Support entrepreneurial learning ecosystems
UN SDG 9: Industry, Innovation, and Infrastructure	• Build resilient infrastructure • Promote sustainable industrialization • Foster innovation	• Infrastructure development • Technological advancement • Innovation capacity • Resilient systems (explicit)	**Very High** – Infrastructure deficits are major SME barriers; innovation is survival mechanism; resilience explicitly embedded	• Prioritize digital infrastructure investment • Support collaborative infrastructure sharing • Develop innovation hubs and networks

					• Build capacity for technology adoption

Source: *Author's synthesis based on HM Government (2022), European Commission (2019), and UN SDGs (n.d.)*

Table 2: ***The Resilience through Sustainability (RtS) Framework – Dimensions, Components, Enablers, and Barriers for African SMEs***

RtS Pillar	Components	Theoretical Foundation	Enablers in African Context	Barriers in African Context	Practical Interventions
Adaptive Capacity	• Innovation • Organisational Learning • Flexibility	• Dynamic capabilities (Duchek, 2020) • Bricolage theory • Circular economy (EU Green Deal)	• Entrepreneurial ingenuity • Bricolage and improvisation • Informal learning networks • Agility in volatile markets	• Limited access to R&D resources • Skills gaps in specialized areas • Weak intellectual property protection • Short-term survival focus	• Innovation hubs and incubators • Frugal innovation training • Knowledge-sharing platforms • Circular economy pilots • Mentorship programs
Strategic Foresight	• Scenario Planning • Digital Readiness	• Anticipatory governance (UK Framework) • Systems thinking • SDG 9 (Innovation & Infrastructure)	• High environmental scanning ability • Adaptability to change • Mobile technology penetration • Emerging digital ecosystems	• Digital divide and connectivity gaps • Limited access to market intelligence • Weak forecasting capabilities • Infrastructure unreliability • Low digital literacy	• Scenario planning workshops • Digital literacy programs • Affordable broadband initiatives • Data analytics training • Early warning systems for risks
Inclusive Governance	• Stakeholder Collaboration • Ethical Leadership	• Stakeholder theory • Triple bottom line (Shahrahmani et al., 2025) • Just transition (EU Green Deal) • SDG 8 (Decent Work)	• Strong social capital • Trust-based networks • Community embeddedness • Relational governance traditions	• Institutional voids • Weak regulatory frameworks • Limited formal governance structures • Power imbalances in value chains • Corruption and rent-seeking	• Multi-stakeholder platforms • Industry associations • Corporate governance training • Public-private dialogues • Ethical leadership development

Source: *Author's conceptual synthesis (2025)*

Adaptive Capacity

Adaptive capacity is the firm's ability to adjust its strategies, processes, and capabilities in response to changing environmental conditions. In the RtS model, it comprises three key elements: innovation, organisational learning, and flexibility. This pillar internalizes the improvisational strengths of African SMEs and channels them into a more systematic capability for renewal. Innovation extends beyond technology to include new business models and

processes. For African SMEs, this means leveraging bricolage to develop frugal innovations that are resource-efficient and locally tailored. It involves embracing circular economy principles, as promoted by the EU Green Deal (European Commission, 2019), to design waste out and create new value streams. Organisational Learning involves acquiring, interpreting, and applying new knowledge. For African SMEs, this means formalizing informal learning within networks, creating mechanisms for knowledge sharing and collective problem-solving, aligning with the dynamic capabilities' perspective (Duchek, 2020). Flexibility is the ability to pivot quickly in response to disruption, encompassing operational and strategic dimensions. For African SMEs, this involves building on inherent agility while developing robust contingency plans.

Strategic Foresight

Strategic foresight is the ability to anticipate and prepare for future challenges and opportunities. It moves the firm from a reactive to a proactive stance, enabling it to shape its future rather than simply react to it. This pillar is directly inspired by the principle of anticipatory governance in the UK Resilience Framework (HM Government, 2022). It consists of two main components: scenario planning and digital readiness. Scenario Planning involves preparing for a range of possible futures. For African SMEs, this tool allows stress-testing strategies against potential disruptions (climate events, political instability, supply chain breakdowns) to develop more robust plans. While Digital Readiness is critical for modern resilience. This includes adopting digital tools and developing skills to use them effectively. For African SMEs, this means bridging the digital divide through digital literacy and exploring how technologies like mobile payments and data analytics can enhance resilience, aligning with SDG 9 (UN, n.d.).

Inclusive Governance

Inclusive governance is the foundation of the RtS framework, ensuring that the pursuit of resilience is both ethical and socially sustainable. It recognizes that an organisation's resilience is deeply intertwined with the well-being of its stakeholders and the health of its ecosystem. This pillar draws on the "whole of society" approach of the UK framework and the "just and fair transition" principle of the EU Green Deal (HM Government, 2022; European Commission, 2019). It is composed of two key elements: stakeholder collaboration and ethical leadership. Stakeholder Collaboration involves building trust-based relationships with employees, customers, suppliers, and the community. For African SMEs, this means strengthening existing social capital by moving from informal networks to structured collaborations like industry associations and public-private dialogues. Ethical Leadership involves making decisions that are economically sound, socially responsible, and environmentally sustainable. For African SMEs, this means embedding sustainability values into organisational culture and contributing to community development, aligning with SDG 8 (UN, n.d.).

Comparative Discussion: Localising Global Lessons and Aligning with SDGs

The RtS framework's contribution lies in its synthesis of global principles and local realities. This comparative discussion explores how the model localises lessons from UK and EU frameworks, creates synergies with the UN SDGs, and extends the theoretical discourse on organisational resilience.

Localising Global Frameworks for the African Context

The RtS model translates macro-level principles from UK and EU frameworks into actionable strategies for resource-constrained SMEs through contextual adaptation. From the UK Resilience Framework (HM Government, 2022), "anticipatory governance" becomes firm-level strategic foresight, while the "whole of society" approach translates into inclusive governance, encouraging collaborative resilience through strengthened supply chains and stakeholder engagement. From the EU Green Deal (European Commission, 2019), the "circular economy" vision becomes practical, frugal innovation. The "just and fair transition" principle reinforces inclusive governance, ensuring resilience is not built at the expense of employees or communities.

Synergies with Sustainable Development Goals 8 and 9

The RtS framework provides a tangible pathway for African SMEs to contribute to and benefit from the UN Sustainable Development Goals. It acts as a micro-level engine for achieving the macro-level ambitions of SDG 8 (Decent Work and Economic Growth) and SDG 9 (Industry, Innovation, and Infrastructure) (UN, n.d.). SDG 9 is supported by all three RtS pillars. Strategic foresight helps anticipate infrastructure vulnerabilities, adaptive capacity drives innovation for sustainable industrialization, and inclusive governance ensures equitable development. SDG 8's goal of inclusive economic growth is an RtS outcome. Resilient SMEs sustain operations, provide stable employment, and contribute to growth. The model's emphasis on inclusive governance ensures this growth is inclusive and work is decent.

Implications for Theory and Policy

The development of the RtS framework has significant implications for both organisational theory and public policy. For theory, the model makes three key contributions. First, it advances the resilience literature (e.g., Duchek, 2020; Olson, 2020) by offering a context-sensitive conceptualization specifically tailored to SMEs in emerging economies, moving the discourse beyond the dominant focus on large corporations in the Global North. Second, it enriches the dynamic capabilities perspective (Duchek, 2020) by integrating it with sustainability and ethics, proposing that resilience is not merely a technical capability but an ethical adaptive capability. This reframes resilience as a normative concept, concerned not only with organisational survival but with the quality and purpose of that survival. Third, it contributes to the African management literature (e.g., Okrah, Boso, & Mensah, 2025; Ibidunni, Oyewo, & Nwokedike, 2025) by providing a framework that honours the continent's unique entrepreneurial dynamics—such as bricolage, social capital, and agility—while offering a path towards more systematic and sustainable business practices. For policy, the RtS framework provides a clear and actionable guide for governments, development agencies, and financial institutions seeking to support African SMEs. It suggests a move away from generic, one-size-fits-all interventions towards a more targeted approach focused on building the three pillars of the model. Policy interventions could include capacity building programs focused on strategic foresight, scenario planning, and digital literacy; innovation hubs and financial instruments that support the development and adoption of sustainable and circular business models; public-private dialogue platforms that foster inclusive governance and collaborative resilience-building at the ecosystem level; and new funding models that reward SMEs for their investments in sustainability and resilience, moving beyond a narrow focus on short-term financial returns. By adopting such a targeted approach, policymakers can create an enabling environment where African SMEs are empowered to build a future that is not only resilient but also sustainable and prosperous.

Implications and Recommendations

The Resilience through Sustainability (RtS) framework offers significant implications for policy, management, and theory. By translating the conceptual model into actionable pathways, this section aligns with the REF criteria of impact and significance, providing clear recommendations for strengthening the resilience of African SMEs.

Policy Implications

For policymakers and development institutions, the RtS framework demands a shift from generic SME support to targeted, ecosystem-level interventions that create an enabling environment where resilience and sustainability are achievable. A primary recommendation is to integrate sustainability into national SME development programmes as a core component of competitiveness and resilience. This involves moving beyond a narrow focus on finance to include support for green innovation, circular economy business models, and climate adaptation, thereby aligning with UN SDG commitments. Concurrently, governments must prioritize investment in resilient infrastructure—energy, transport, and digital—as highlighted by SDG 9 (UN, n.d.), using public-private partnerships to accelerate broadband access. To

address the chronic financing gap (Atiase et al., 2023), innovative mechanisms like resilience-linked loans and blended finance are needed to de-risk private investment. Finally, fostering collaborative governance platforms is essential to counter institutional voids (North, 1990), bringing together diverse stakeholders—SMEs, industry associations, government agencies, and civil society—to co-create solutions and build collective ecosystem resilience.

Managerial Implications

For SME managers, the framework provides a practical roadmap for building a durable enterprise by adopting a proactive, holistic approach. This begins with using the RtS model as a diagnostic tool to assess capabilities across its three pillars—adaptive capacity, strategic foresight, and inclusive governance—to identify strengths and prioritize improvement areas. Managers should invest in sustainability training on topics like circular economy principles, digital literacy, and ethical leadership to build human capital for a culture of continuous learning. Embracing frugal innovation can turn resource constraints into a competitive advantage by developing affordable, sustainable solutions tailored to local needs (Okrah, Boso, & Mensah, 2025). Finally, proactively strengthening stakeholder relationships through transparent communication and community engagement builds essential social capital, a critical lifeline during crises (Prayag, Chowdhury, & Orchiston, 2023).

Theoretical Implications

This study makes several theoretical contributions. It advances organisational resilience literature (e.g., Duchek, 2020; Hepfer & Lawrence, 2022) with a context-sensitive conceptualization for SMEs in emerging economies, moving beyond the dominant focus on large corporations in the Global North. It also enriches the dynamic capabilities view (Duchek, 2020) by integrating sustainability and ethics, proposing resilience as an 'ethical adaptive capability'—a normative construct concerned not only with organisational survival but with the purpose and quality of that survival. Finally, it contributes to African management literature (e.g., Okrah, Boso, & Mensah, 2025; Ibidunni, Oyewo, & Nwokedike, 2025) by providing a framework that bridges global theories and local business practices, honouring the continent's unique entrepreneurial dynamics while offering a clear path towards more systematic and sustainable development.

Future Research Directions

The RtS framework, as a conceptual model, provides fertile ground for future empirical research. The most urgent priority is empirical validation through large-scale surveys and in-depth case studies of African SMEs to test the proposed relationships and identify key enablers and barriers in different contexts. Longitudinal analysis is also needed to understand how organisational resilience evolves over time by tracking SMEs through various disruptions, providing insights into the dynamic processes of adaptation. Furthermore, comparative African case studies would illuminate the role of institutional context in shaping resilience pathways across different national and sectoral settings. A deeper understanding ultimately requires interdisciplinary research that integrates insights from management, economics, sociology, and environmental science to explore the complex interplay of organisational, social, and ecological factors shaping SME resilience in Africa.

Conclusions

In an era defined by unprecedented volatility, the resilience of small and medium-sized enterprises has become a critical determinant of sustainable economic development, particularly in Africa. This paper addressed the research question of how global sustainability frameworks can inform the conceptualisation of organisational resilience for African SMEs. In response, it has developed the Resilience through Sustainability (RtS) conceptual model, a framework that synthesizes insights from global best practices with the contextual realities of African enterprise. The RtS model, built on the three pillars of adaptive capacity, strategic foresight,

and inclusive governance, offers a novel and holistic understanding of organisational resilience. It reframes resilience not as a mere survival mechanism, but as a dynamic, ethically-grounded capability for sustainable transformation. The originality of this study lies in its deliberate blending of global–local perspectives. It translates the high-level principles of frameworks like the UK Government Resilience Framework (HM Government, 2022) and the EU Green Deal (European Commission, 2019) into actionable strategies for resource-constrained SMEs, while honouring the indigenous strengths of African entrepreneurship, such as bricolage, social capital, and agility (e.g., Okrah, Boso, & Mensah, 2025; Prayag, Chowdhury, & Orchiston, 2023). This paper makes a significant contribution to both organisational theory and the practice of sustainable development in Africa. Theoretically, it advances the resilience literature (e.g., Duchek, 2020; Olson, 2020) by offering a context-sensitive model that moves beyond the dominant focus on large corporations in developed economies. It enriches the dynamic capabilities view (e.g., Duchek, 2020) by proposing the concept of resilience as an "ethical adaptive capability," thereby integrating sustainability and ethics into the core of strategic management. For practice, the RtS framework provides a clear roadmap for SME managers, policymakers, and development partners to build a more resilient and prosperous future for the continent. It demonstrates that the path to resilience and the path to sustainable development are not just parallel, but one and the same. However, the study's limitations must be acknowledged. As a conceptual paper based on a synthesis of secondary data, its primary limitation is the absence of empirical validation. The RtS framework is a theoretical construct that now requires rigorous testing in the field. Furthermore, the diversity of the African continent means that the framework will need to be further adapted to specific national and sectoral contexts. These limitations open up a rich agenda for future research. The urgent need now is for empirical studies—both qualitative and quantitative—to test, refine, and expand the RtS model. We call for interdisciplinary and cross-regional research that can illuminate the complex interplay of organisational, institutional, and environmental factors shaping SME resilience in Africa. By continuing this vital work, we can empower African SMEs to not only withstand the storms of disruption but to emerge stronger, more sustainable, and ready to lead the continent's next chapter of growth.

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THE INTERPLAY BETWEEN ENVIRONMENTAL ACCOUNTING AND CARBON PERFORMANCE IN VALUE CREATION

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1. Introduction

The contemporary corporate landscape is marked by an unprecedented tension between the pursuit of economic growth and the rising urgency of environmental preservation. While firms continue to prioritize financial performance, the traditional drivers of profitability have contributed significantly to environmental degradation, most notably through climate change induced by greenhouse gas emissions. This global challenge has accelerated a profound shift in how value is conceptualized, urging firms to align economic objectives with ecological responsibility (Rockström et al., 2009). Within this transition, green accounting has emerged as a key discipline, offering tools to measure, manage, and disclose the environmental consequences of corporate activities (Schaltegger & Burritt, 2010). Beyond compliance, carbon performance represents a strategic lever for firms. By reducing emissions, companies can lower costs, improve operational efficiency, and enhance legitimacy with stakeholders, potentially translating environmental responsibility directly into financial and market value. This study is situated at the heart of this transformation and investigates a central question: can environmental performance, assessed through green accounting metrics, effectively translate into financial value?

Beyond regulatory compliance, carbon performance increasingly represents a strategic asset. Firms that proactively manage and reduce emissions gain operational efficiencies, enhance stakeholder trust, and potentially improve access to capital. In this context, environmental performance is not merely a peripheral concern but a driver of long-term financial value. Green accounting thus serves as both a measurement tool and a strategic framework to align sustainability with economic objectives.

Despite significant progress in corporate sustainability reporting and the widespread adoption of environmental, social, and governance (ESG) frameworks, empirical evidence linking carbon performance to financial value remains fragmented. A review of existing studies reveals mixed and often contradictory results (Friede, Busch, & Bassen, 2015). Although theoretical arguments highlight channels through which carbon efficiency could generate value such as cost reduction through energy optimization, enhanced legitimacy, and reduced regulatory risks (Porter & Kramer, 2011; Bolton & Kacperczyk, 2021), empirical research does not provide a unified conclusion. Several gaps help explain this inconsistency.

This study emphasizes that environmental performance, particularly carbon efficiency, can directly contribute to value creation through cost reductions, risk mitigation, and enhanced corporate reputation. By framing carbon management as a value-generating

strategy, the research highlights the dual importance of environmental and financial outcomes. First, the mechanisms through which carbon performance may influence operational performance (e.g., ROA) differ from those affecting market valuation (e.g., MTB); however, many studies treat value creation as a single construct. Second, existing research often relies on static carbon metrics, overlooking the strategic signaling potential embedded in firms' emissions trajectories over time (Grewal & Serafeim, 2020). Finally, the strength of the relationship between carbon performance and value may depend on contextual factors such as regulatory frameworks, investor expectations, and market maturity, factors particularly relevant in the UK, a country with advanced climate policies and mandatory reporting requirements.

To address these gaps, this study poses the following overarching research question: To what extent does corporate carbon performance, measured through green accounting indicators, create financial value, and how is this relationship moderated by a firm's emissions trajectory? This question is operationalized through two empirical objectives. The first is to assess the direct relationship between carbon performance (proxied by emission intensity) and firm value, captured through both accounting-based (ROA) and market-based (MTB) indicators. The second is to examine how a firm's emissions trajectory moderates this relationship, with particular attention to its signaling effect for market-based valuation.

Building on Stakeholder Theory (Freeman, 1984), Legitimacy Theory, and the Resource-Based View (Hart, 1995), two hypotheses are developed. The first posits a positive relationship between carbon performance and firm value, suggesting that firms with lower emission intensity benefit both operationally and in the market. The second hypothesis proposes that a downward emissions trajectory strengthens this relationship, particularly for market-based value, by signaling strategic commitment and long-term environmental responsibility.

Methodologically, this research adopts a quantitative and deductive approach based on a longitudinal panel of UK-listed firms from 2012 to 2023. Environmental and financial data are sourced from Refinitiv Eikon. The empirical design relies on two-way fixed effects models to control for unobserved firm-specific characteristics and temporal shocks. The analysis proceeds through descriptive statistics, multivariate regression models aligned with the theoretical hypotheses, and several robustness tests.

The significance of this research lies in three main contributions. Empirically, it provides updated evidence on the link between carbon performance and multiple dimensions of firm value within the UK context. Methodologically, it distinguishes between operational and market-based value creation and introduces a dynamic measure, emissions trajectory, that captures the temporal dimension of environmental strategy. Practically, the results hold implications for managers seeking to justify environmental investments, investors refining ESG valuation models, and policymakers monitoring the effectiveness of carbon-related regulations.

Overall, this study argues that carbon efficiency, far from being a peripheral corporate concern, constitutes a strategic asset and a source of long-term value creation in the low-carbon transition.

The remainder of the paper is structured as follows: Section 2 presents a literature review and hypotheses. Section 3 outlines the research methodology. Section 4 presents the

empirical results and robustness checks. Section 5 discusses the findings, implications, and limitations, and suggests avenues for future research.

2. Littérature Review

2.1 Carbon Performance and Value Creation: From Trade-off to Strategic Integration

The empirical investigation into the relationship between corporate environmental performance and financial outcomes has evolved significantly. Early research was dominated by a paradigm that framed ecological responsibility as a trade-off against economic efficiency, arguing that beyond a certain point, environmental investments would erode profitability and shareholder value. This defensive posture treated pollution control as a non-productive cost burden.

The turn of the millennium marked a transition, catalyzed by the emergence of ESG data providers and more sophisticated econometric techniques. Foundational meta-analyses emerged. Eccles et al. (2014) revealed that firms with robust sustainability policies significantly outperformed counterparts in both stock market and accounting performance. The meta-study of Friede, Busch & Bassen (2015) found that approximately 90% of analyses reported a non-negative ESG-financial performance relationship, with a large majority showing positive findings.

Contemporary research has focused on carbon emissions as a salient dimension. Theoretical underpinnings have crystallized around several channels. The work of Bolton & Kacperczyk (2021, 2023) established the Risk Mitigation Channel, showing investors demand higher returns for stocks of firms with higher CO_2 emissions, pricing regulatory, physical, and transition risks. Simultaneously, evidence for the Cost Efficiency Channel shows carbon reduction can drive operational excellence, enhancing profit margins through technological innovation and process optimization (Lieu et al., 2024; Han et al., 2023). Recent studies also highlight Reputational and Market Access Channels, where superior carbon performance improves stakeholder trust and lowers financing costs (Krueger, Sautner & Starks, 2020; Choi, Lee & Park, 2021)

The accumulation of evidence suggests the "trade-off" paradigm has given way to understanding environmental strategy as a source of long-term competitive advantage. Carbon performance is not merely a compliance requirement but an integral dimension of corporate value creation. Recent studies (Lieu et al., 2024; Zhang & Wang, 2024) further demonstrate that firms with superior carbon efficiency not only benefit from cost reductions but also experience improved access to capital and stronger investor confidence, underscoring the multifaceted role of environmental performance in value creation.

Overall, the evidence suggests that carbon performance should not be viewed merely as an environmental obligation but as an integral component of corporate strategy. Firms that effectively reduce emissions can simultaneously enhance operational efficiency, mitigate financial and reputational risks, and secure a competitive advantage. Consequently, environmental responsibility becomes a tangible source of value creation, justifying the study's focus on the relationship between carbon performance and firm financial outcomes.

H1: There is a positive relationship between a firm's carbon performance, proxied by lower emission intensity, and its financial performance, proxied by both ROA and Market-to-Book Ratio.

2.2 Emissions Trajectory and Market Signaling: The Temporal Dimension of Carbon Performance

While the static level of carbon emissions provides important information, scholarly attention has increasingly turned to the dynamic trajectory of emissions as a potentially more revealing

indicator of strategic positioning and managerial quality. This temporal dimension introduces a crucial distinction between being "less bad" and actively improving.

A declining emissions trend serves as a powerful signal to capital markets. It demonstrates managerial competence in navigating the low-carbon transition, represents a credible commitment to long-term value creation, and enhances organizational legitimacy by aligning with broader societal expectations and global climate agreements.

Empirical literature has begun to disentangle the effects of emission levels versus emission trends. Han et al. (2022) found that market valuation effects of carbon disclosures were particularly pronounced. Busch, Johnson & Pioch (2022) highlighted that firms showing consistent reductions in emissions intensity benefited from higher Tobin's Q. Matsumura & Parkash (2023) documented that the credibility of reported downward emission trends significantly influenced investor reactions.

The credibility of emissions trajectory is also tied to the regulatory environment. As mandatory climate disclosure frameworks such as IFRS S2 and the EU's Corporate Sustainability Reporting Directive (CSRD) are phased in, verification of emissions data will enhance the reliability of trend analysis, potentially strengthening the market's response.

Taken together, these insights indicate that investors do not merely value where a firm stands today, but also the direction and credibility of its journey. A downward trajectory is thus more than an environmental metric; it is a market signal of managerial foresight and innovation capability.

The trajectory of emissions signals managerial foresight and commitment to long-term sustainability, which can influence investor perceptions and market valuation. This dynamic aspect reinforces the idea that environmental performance is not only a regulatory or ethical concern but also a source of competitive advantage.

H2: The positive relationship between carbon performance and firm value is moderated by the firm's emissions trajectory; specifically, a declining emissions trend strengthens the positive impact on market-based valuation (Market-to-Book Ratio).

3. Methodology

3.1 Data and sample

This study utilizes a comprehensive panel dataset sourced exclusively from Refinitiv Eikon, a leading global financial and environmental, social, and governance (ESG) database. The dataset covers UK-listed firms over the period 2012–2023, providing integrated access to standardized financial statements and detailed ESG metrics, thereby ensuring consistency in measurement across all variables. The UK context is particularly relevant due to its advanced climate policies, sophisticated capital markets, and high levels of ESG awareness among institutional investors.

The initial data extraction yielded an unbalanced panel of 6,156 firm-year observations. The sample was refined through a sequential filtering process to ensure data integrity and alignment with the theoretical constructs. Observations with missing values for the dependent variables (ROA and MTB), the primary independent variable (Emission Intensity), or the key control variable (Total Assets) were excluded. This resulted in a final analysis sample of 1,601 firm-year observations for testing Hypothesis 1 (H1).

For Hypothesis 2 (H2), which introduces the moderating variable Emissions Trajectory (measured as the 3-year Compound Annual Growth Rate of Scope 1 emissions), an additional filter was applied to retain only firms with at least three consecutive years of emissions data. This produced a subsample of 821 firm-year observations dedicated to the moderation analysis.

Table 1: Sample Selection Procedure

Step	Selection Criteria	Firm-Year Observations Remaining
1	Initial Sample (2012-2023)	6,156
2	Less: Missing ROA	4,878
3	Less: Missing MTB	4,662
4	Less: Missing Emission Intensity	1,723
5	Less: Missing Total Assets	1,601
Final Sample for H1 Analysis		**1,601**
6	Less: Missing Emissions Trajectory (3-Year CAGR)	6
Final Sample for H2 Analysis		**821**

Acknowledging a key limitation, the sample is systematically biased toward larger firms due to the historically voluntary nature of carbon disclosure. A comparative analysis confirmed that firms in the final sample are significantly larger (mean assets of approximately $15.2 billion) than excluded non-reporting firms (mean assets of $0.87 billion). Consequently, the findings are most readily generalizable to large, publicly listed UK firms, for whom carbon management is most material and strategically relevant.

3.2 Variable Construction and Measurement

Dependent Variables: Multidimensional Value Creation Construct

Value creation in this study embraces a multidimensional perspective that recognizes distinct mechanistic channels through which carbon performance may influence corporate financial ecosystems. This dual-dimensional framework differentiates between internal operational efficiencies and external market perceptions.

Return on Assets (ROA) functions as the primary indicator of accounting-based value creation, representing the efficacy with which management deploys the firm's economic resources to generate profitable returns. This metric captures the operational dimension of value creation, reflecting the fundamental efficiency of the conversion process through which economic inputs are transformed into financial outputs. The theoretical justification derives principally from the Cost Efficiency Channel of value creation.

Market-to-Book Ratio (MTB) serves as the market-based complement to ROA, encapsulating the investment community's collective assessment of a firm's future growth potential and the value of its intangible strategic assets. This forward-looking metric embodies the market's aggregated expectations regarding a firm's strategic positioning, innovation capacity, and sustainable competitive advantages. The theoretical underpinnings derive from the Risk Mitigation and Signaling Channels of value creation.

Independent Variables: Carbon Performance Dimensions

The operationalization of carbon performance embraces both static efficiency levels and dynamic improvement trajectories.

Emission Intensity constitutes the primary independent variable, measuring the economic efficiency of a firm's carbon utilization relative to its value generation capacity. This metric embodies the essential output of sophisticated green accounting systems. It is calculated as total CO_2 equivalent emissions (Scope 1 + 2) scaled by total revenue.

Emissions Trajectory introduces a critical temporal dimension to carbon performance assessment, capturing the velocity and direction of change in a firm's environmental impact. This moderating variable is operationalized as the 3-year Compound Annual Growth Rate (CAGR) of Scope 1 Direct Emissions. The three-year measurement horizon represents a

strategic period sufficient to distinguish meaningful strategic trends from short-term operational fluctuations.

Control Variables

A comprehensive suite of control variables addresses potential confounding factors. Firm Size is a critical control, operationalized through Total Assets (log-transformed and winsorized). Larger organizations typically possess more substantial resources for implementing environmental management systems and face heightened stakeholder expectations.

The model includes Firm and Year Fixed Effects. Firm fixed effects absorb all time-invariant firm characteristics (e.g., corporate culture, industry). Year fixed effects capture temporal shocks common to all firms, such as macroeconomic fluctuations and regulatory changes.

3.3 Empirical Model Specification

This study employs a panel data regression framework to test the hypothesized relationships. Given the longitudinal structure of our dataset, we conducted the Hausman (1978) specification test, which yielded a statistically significant result ($\chi^2=26.19, p=0.010$). Consequently, the fixed effects (within) estimator was selected as the preferred empirical strategy, as it controls for unobserved, time-invariant firm heterogeneity.

The fixed effects model eliminates time-invariant firm characteristics through a within-transformation, which demeans the data by subtracting firm-specific averages. This approach isolates within-firm variation over time, allowing us to examine how changes in a firm's carbon performance relate to changes in its financial performance.

Baseline Fixed Effects Specification (Model 1 – Testing H1)

To test Hypothesis H1, which posits a direct relationship between carbon performance and firm value, we estimate the following two-way fixed effects model:

$$\boldsymbol{Financial\ Performance_{it} = \beta_0 + \beta_1 . Emission\ Intensity_{it} + \beta_2 . Total\ Assets_{it} + \sum_{t=2013}^{2023} \lambda_t\ . Year_t + \alpha_i + \epsilon_{it}}$$

Where:

- $\boldsymbol{Financial\ Performance_{it}}$ represents the dependent variable for firm $\boldsymbol{i}$ in year $\boldsymbol{t}$, alternately measured by Return on Assets (ROA) and Market-to-Book Ratio (MTB).
- $\boldsymbol{Emission\ Intensity_{it}}$ serves as the primary independent variable.
- $\boldsymbol{Total\ Assets_{it}}$ controls for firm size.
- $\boldsymbol{\lambda_t}$ represents year fixed effects, capturing temporal shocks common to all firms.
- $\boldsymbol{\alpha_i}$ denotes firm fixed effects, controlling for all time-invariant organizational characteristics.
- $\boldsymbol{\epsilon_{it}}$ is the idiosyncratic error term.

In this specification, the coefficient β_1 captures the within-firm effect of emission intensity on financial performance. A statistically significant and negative β_1 would support H1.

Moderated Regression Specification (Model 2 – Testing H2)

To test Hypothesis H2, which examines whether a firm's emissions trajectory moderates the carbon performance–valuation relationship, we employ a moderated regression framework:

$$\boldsymbol{Market\ To\ Book_{it} = \beta_0 + \beta_1 . Emission\ Intensity_{it} + \beta_2 . Emissions\ Trajectory_{it} + \beta_3 . (Emission\ Intensity \times Emissions\ Trajectory)_{it} + \beta_4 . Total\ Assets_{it} + \sum_{t=2017}^{2023} \lambda_t\ . Year_t + \alpha_i + \epsilon_{it}}$$

Key elements include:

- The main effect of Emission Intensity$_{it}$ ($\boldsymbol{\beta_1}$).
- **Emissions Trajectory**$_{\boldsymbol{it}}$, the moderating variable (centered 3-year CAGR of Scope 1 emissions).
- The interaction term ($\boldsymbol{\beta_3}$) which directly tests H2.

Prior to creating the interaction term, the Emissions Trajectory variable was mean-centered to mitigate multicollinearity and improve interpretability.

All models are estimated using robust standard errors clustered at the firm level to account for heteroskedasticity and within-firm serial correlation. Continuous variables were winsorized at the 1st and 99th percentiles to mitigate the influence of outliers.

4. Empirical results

4.1 Descriptive Statistics and Correlation Analysis

Before proceeding to multivariate analysis, we examine the fundamental characteristics of the dataset. Table 2 presents the descriptive statistics for all key variables. The distributional properties reveal substantial heterogeneity in both financial and environmental dimensions.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Median	Max
ROA	4,871	-8.89	42.62	-265.15	3.41	51.02
MTB	4,655	4.00	10.27	-15.13	1.87	83.32
Emission Intensity	1,708	154.54	409.27	0.26	24.50	2,948.07
Emissions Trajectory	891	-0.10	22.97	-52.57	-1.81	138.45
Total Assets ($)	5,066	3.84M	13.4M	78	82,500	97.0M

Note: Total Assets reported in USD to enhance readability; M denotes millions

The financial performance measures show significant dispersion. ROA has a negative mean (-8.89) and high standard deviation (42.62), reflecting the inclusion of economic downturn periods and firms in distress. MTB exhibits positive skewness, with a median of 1.87 against a mean of 4.00, indicating that most firms trade at modest valuation multiples while a subset commands high growth expectations.

Carbon performance metrics also display wide variation. Emission intensity is highly right-skewed (median = 24.50, mean = 154.54), suggesting that while most firms achieve moderate carbon efficiency, a minority of carbon-intensive firms substantially inflate the average. The emissions trajectory variable has a slightly negative median (-1.81%), indicating that more firms are reducing emissions than increasing them, though with considerable variance (std. dev. = 22.97).

Table 3 presents the Pearson correlation matrix. Emission intensity shows statistically significant negative correlations with both ROA ($r = -0.1000$, $p < 0.05$) and MTB ($r = -0.0762$, $p < 0.05$), offering preliminary support for H1. Emissions trajectory is negatively correlated with ROA ($r = -0.0689$, $p < 0.05$) but shows a negligible correlation with MTB ($r = 0.0107$, ns). All correlation coefficients remain well below conventional multicollinearity thresholds, with Variance Inflation Factors (VIFs) in subsequent regression models confirming no significant multicollinearity concerns.

Table 3: Pearson Correlation Matrix

Variable	ROA	MTB	Emission Intensity	Emissions Trajectory	Total Assets
ROA	1.000				
MTB	-0.0518*	1.000			
Emission Intensity	-0.1000*	-0.0762*	1.000		
Emissions Trajectory	-0.0689*	0.0107	0.0274	1.000	
Total Assets	0.0992*	-0.0300*	0.0405	-0.0550	1.000

*Note: * indicates statistical significance at the 5% level (p < 0.05). N ranges from 891 to 5,066 depending on variable pairs.*

4.2 Regression Results and Hypothesis Testing

Direct Effects of Carbon Performance on Value Creation (H1)

Table 4 presents the fixed effects regression results testing H1 and H2. Column 1 shows the relationship between emission intensity and ROA. The coefficient is negative and marginally significant (β = -0.00269, p < 0.10), suggesting that a one-unit decrease in emission intensity is associated with a 0.00269 percentage point increase in ROA. In economic terms, a one-standard-deviation decrease in emission intensity (409.27 units) correlates with an approximately 1.10 percentage point improvement in ROA. This provides qualified support for H1 for accounting-based performance (ROA) and aligns with the cost efficiency channel.

Column 2 presents the results for MTB. The coefficient for emission intensity is negative but statistically insignificant (β = -0.000306, p = 0.371), failing to support H1 for market-based valuation (MTB). This indicates that, in the baseline specification, carbon performance does not show a systematic relationship with market-based valuation after controlling for firm and year effects.

Table 4: Fixed Effects Regression Results - Carbon Performance and Value Creation

Variable	(1) ROA	(2) MTB	(3) MTB with Moderation
Carbon Performance			
Emission Intensity	-0.00269*	-0.000306	-0.000950**
	(0.00161)	(0.000341)	(0.000448)
Moderating Effects			
Emissions Trajectory			0.00970
			(0.00764)
Intensity × Trajectory			-0.0000126
			(0.0000162)
Control Variable			
Total Assets	-2.60e-08	-5.99e-08	-3.49e-08
	(2.96e-08)	(3.91e-08)	(4.54e-08)
Model Statistics			
Observations	1,601	1,577	821
Number of Firms	218	216	152
R-squared (within)	0.0583	0.0345	0.0288
Year Fixed Effects	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes
F-statistic	5.74***	4.39***	2.37***

*Notes: Robust standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01. All models include year fixed effects. The F-statistics test the joint significance of all explanatory variables.*

Moderating Role of Emissions Trajectory (H2)

Column 3 of Table 4 tests H2, which proposed that a declining emissions trajectory strengthens the relationship between carbon performance and MTB. When accounting for emissions trajectory, the main effect of emission intensity becomes statistically significant at the 5% level and larger in magnitude (β = -0.000950, p < 0.05). This suggests that for firms with established emissions data, carbon performance does influence market valuation.

However, the interaction term between emission intensity and emissions trajectory is not statistically significant (β = -0.0000126, p = 0.441). Thus, H2 is not supported. The market does not appear to differentially reward or penalize firms based on their improvement trajectory beyond the effect of current emission levels. The main effect of emissions trajectory is also insignificant (β = 0.00970, p = 0.207), reinforcing that investors focus on current efficiency rather than improvement trends.

4.3 Robustness Checks

To ensure the reliability of our findings, we conducted several sensitivity analyses (Table 5). The relationship between emission intensity and ROA remained robust to alternative specifications, including clustering standard errors at the firm level and using more conservative winsorization thresholds. However, the relationship with MTB proved fragile, varying in significance and even direction across different methodological choices.

Most notably, subsample analysis excluding the COVID-19 period (2012–2019) revealed that neither the ROA nor MTB relationships maintained statistical significance in the pre-pandemic era. This suggests that the observed effects may be partly driven by the unique regulatory and market conditions characterizing the pandemic and post-pandemic period, rather than representing stable long-term relationships.

Table 5: Robustness Checks - Carbon Performance and Value Creation

Variable	(1) ROA Clustered	(2) ROA Winsor 2.5%	(3) ROA Pre-COVID	(4) MTB Clustered	(5) MTB Winsor 2.5%	(6) MTB Pre-COVID
Emission Intensity	-0.000*** (0.000)	-0.005** (0.002)	-0.000 (0.001)	0.000* (0.000)	-0.001** (0.001)	0.001 (0.001)
Total Assets	1.36e-08*** (2.87e-09)	-1.66e-07* (9.70e-08)	1.03e-08*** (1.90e-09)	2.84e-08 (9.31e-08)	-5.60e-08 (7.19e-08)	-6.10e-08 (7.36e-08)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,601	1,601	934	1,577	1,577	918
R-squared	0.058	0.070	0.019	0.011	0.058	0.008

*Notes: Standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01. All models include year and firm fixed effects. Column (1) and (4) cluster standard errors at the firm level. Column (2) and (5) use 2.5%/97.5% winsorization. Column (3) and (6) restrict the sample to pre-COVID period (2012-2019).*

5. Discussion and Conclusion

This study examined the relationship between corporate carbon performance and financial value creation in UK-listed firms, using green accounting metrics and a longitudinal panel from 2012–2023. The findings reveal a nuanced relationship, highlighting the operational significance of carbon efficiency. Firms with lower emission intensity tend to realize improved profitability, supporting the notion that environmental efficiency functions as an operational value driver. Although market-based valuation is more context-sensitive, the strategic implications are clear: credible environmental management can serve as a source of long-term value creation.

A marginally significant positive association between lower emission intensity and ROA supports the operational efficiency channel, indicating that carbon-efficient practices correlate with improved profitability. However, the link with market-based valuation (MTB) is fragile and context-dependent, emerging as significant only among firms with established environmental reporting. Contrary to expectations, emissions trajectory does not moderate this relationship, suggesting that markets focus on current efficiency levels rather than improvement trends. Robustness checks further reveal temporal sensitivity, with relationships becoming

insignificant in pre-COVID analyses, indicating that observed effects may partly reflect unique pandemic and post-pandemic conditions.

These results suggest that firms with robust carbon strategies are likely positioning themselves for future market recognition as regulatory standards, investor expectations, and societal pressures continue to evolve. The limited market response observed underscores the lag between operational improvements and investor valuation, highlighting the need for transparent and credible reporting. Theoretically, the findings reinforce the Resource-Based View by emphasizing carbon efficiency as a strategic organizational capability, while challenging straightforward applications of signaling theory to improvement trajectories.

Practically, the study provides managers with operational justification for carbon efficiency investments, enabling them to enhance profitability, resource utilization, and stakeholder trust. Investors may increasingly reward firms demonstrating consistent environmental responsibility, while policymakers can use these insights to design incentives and disclosure requirements that support the integration of green accounting into corporate strategy.

In conclusion, carbon performance represents a strategic lever for value creation, particularly through operational efficiency. While market recognition of environmental performance remains evolving, firms that actively manage their carbon footprint are not only contributing to sustainability but also enhancing long-term financial resilience. As reporting frameworks mature and investor awareness grows, the financial materiality of environmental performance is expected to strengthen, further embedding green accounting into corporate strategy and value creation processes. Overall, this study underscores that carbon efficiency is more than a compliance or ethical concern; it is a tangible source of competitive advantage, capable of driving both operational and strategic value in the low-carbon transition.

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Toward Responsible and Sustainable Agricultural Management: Analysis of Farmers' Perceptions in the Tunisian regions of Manouba and Mornag

Introduction

Agriculture is fundamentally the enhancement of nature to ensure human survival (Brunel, 2024); however, the global sector currently sits at the crossroads of severe climate, biological, and socio-economic crises. While the 20th-century productivist model successfully increased yields through intensive chemical use and specialization, it simultaneously accelerated ecosystem degradation and resource depletion (Tilman et al., 2002). Consequently, a consensus has emerged regarding the urgent need to transform agricultural systems toward more sustainable and resilient forms (Pretty, 2008; FAO, 2017).

In the Global South, Tunisia exemplifies these challenges. Although the agricultural sector is vital for food security and employment, it faces a multidimensional systemic crisis characterized by water scarcity, land fragmentation, and high vulnerability to shocks (Elloumi, 2018).

Research by Dhehibi, Frija, and Aw-Hassan (2014) and Elloumi (2018) exposes a systemic "sustainability gap" in Tunisia, where national modernization ambitions clash with the operational realities of a sector in crisis. This disconnect is driven by a paradox of consciousness: while policymakers pursue responsible agriculture, farmers stifled by low education and economic pressure prioritize immediate survival over long-term ecological health. This is particularly evident in water management; despite high adoption rates of water-saving technologies, resources are "heavily wasted" and aquifers overexploited due to the organizational failures of local associations (Atiri, 2007; Frija et al., 2013) (cited in Dhehibi, Frija, and Aw-Hassan (2014)). Furthermore, chronic land fragmentation, with 75% of farms under 10 hectares, makes integrated resource management nearly impossible (World Bank, 2006) (cited in Dhehibi, Frija, and Aw-Hassan (2014)).

In southern oases, Jeder et al. (2021) and Ben Nasr et al. (2021) identify a "perceptual-functional gap." Although over 90% of farmers recognize climate threats, their actions remain reactive and short-term rather than systemic. This failure to adapt is rooted in a lack of financial resources, technical training, and institutional credit (Sofoluwe et al., 2011; Smith et al., 2011) (cited in Jeder et al. (2021)).

This literature-based "gap" was empirically validated during the exploratory phase of our research, specifically through the comprehensive interviews conducted with key stakeholders in the sector. These qualitative insights confirm that the disconnect is not merely a failure of top-down policy design, but a deeper structural and cognitive dissonance observed at the farm level. Our findings from these interviews consistently highlight a "discursive gap": while there is a clear high-level acknowledgment of the importance of sustainability, immediate

economic pressures and operational constraints similar to those identified by Jeder et al. (2021) and Dhehibi et al. (2014) effectively force a focus on short-term survival.

This research addresses this discrepancy by exploring how Tunisian farmers perceive sustainability and manage change within their specific local contexts, specifically in the Manouba and Mornag regions. By focusing on the unique socio-economic dynamics of these zones, this study seeks to resolve the following central research question: **“How do Tunisian farmers perceive and integrate responsible and sustainable practices into the management of their farms, through resources allocation and their relationships with different stakeholders?”**

Theoretically, this study adopts a dual lens by mobilizing Resource Dependence Theory (RDT) (Pfeffer & Salancik, 1978) and Stakeholder Theory (ST) (Freeman, 1984; Mitchell et al., 1997). This allows for a nuanced analysis of how farmers manage resource allocation under conditions of dependence and how their interactions with institutions and market actors shape their transition trajectories. Methodologically, the research is rooted in an interpretivist epistemological framework (Denzin & Lincoln, 2018), utilizing a qualitative design. By combining comprehensive interviews (Kaufman, 2016), semi-structured interviews (Quivy & Campenhoudt, 1988), and non-participant observation (Arborio & Fournier, 2021), the study captures the situated knowledge and "logics of action" of farmers (Actor behavior in context / understanding behavior in a given situation P.Bernoux, cited by Bréchet, J.-P., & Schieb-Bienfait, N. (2011).

Theoretical and Conceptual Foundations

The confrontation between empirical findings and theoretical concepts led to the mobilization of stakeholder theory (Freeman, 1984; Donaldson & Preston, 1995; Mitchell et al., 1997; Frooman, 1999), and resource dependence theory (Pfeffer & Salancik, 1978). Ultimately, the combined use of stakeholder theory and resource dependence theory provides a relational and structural reading of farmers' strategic choices, highlighting how power relations and multiple resource dependencies constrain the implementation of responsible and sustainable agricultural practices in Tunisia.

1. The Epistemological Role of the Theoretical Framework

The construction of a scientific study is not merely an empirical exercise; it is an analytical journey that requires a robust architecture. As Corley and Gioia (2011) emphasize, the theoretical framework is the mechanism that allows a researcher to move from isolated empirical observations to conceptual generalizations. In the management sciences, this framing serves to structure the researcher's reasoning, define the boundaries of key concepts, and explain the presumed relationships that guide the investigative process.

For our study on the Tunisian agricultural sector, where a significant "sustainability gap" exists between national policy and field practice (Pretty, 2008; Ben Nasr et al., 2021), theory provides the necessary lens to decode the underlying structural and relational obstacles to transition.

2. Stakeholder Theory (ST): The Relational and Ethical Pillar

The first pillar of our research is Stakeholder Theory (ST), pioneered by Freeman (1984). This theory marked a paradigm shift in management by asserting that an organization's sustainability depends on its ability to manage the expectations of all groups that affect or are affected by its objectives.

2.1. The Three Dimensions of Stakeholder Engagement

According to Donaldson and Preston (1995), the theory must be understood through three complementary lenses:

- **The Descriptive Dimension:** It maps how Tunisian farms function in practice within their network (GDAs, SMSAs, institutions).
- **The Instrumental Dimension:** It examines how managing these relationships impacts the actual performance and survival of the farm.
- **The Normative Dimension:** It establishes that considering stakeholders is an ethical obligation, framing sustainability as a moral imperative rather than just a technical choice.

2.2. Stakeholder Salience and Governance

In the complex agricultural landscape, not all actors hold the same weight. We utilize the typology of Mitchell, Agle, and Wood (1997) to analyze stakeholders through three attributes:

Power (the ability to influence), Legitimacy (the social justification of their role), and Urgency (the criticality of their demands).

In Tunisia, this helps us understand for example why a farmer might prioritize the requirements of an international exporter (high power/urgency) over long-term environmental norms (high legitimacy/low immediate power). Furthermore, as Bonnafous-Boucher and Pesqueux (2005) suggest, these interactions are "embedded" in the cultural and political fabric of the territory, meaning agricultural governance in regions like Manouba and Mornag is a product of social democracy and institutional mediation.

Concepts of Stakeholder Theory

Key Concept	Definition	Principals authors
Stakeholders	Groups or individuals affected by or who may affect the organization's objectives.	Freeman (1984, 1994)
Legitimacy	Recognition of stakeholder expectations as justified or appropriate.	Suchman (1995), Freeman
Power	Ability of stakeholders to influence the organization or its decisions.	Pfeffer (1981), Mitchell, Agle & Wood (1997)
Emergency	Degree of urgency of a stakeholder's demands.	Mitchell, Agle & Wood (1997)
Symbiotic Relationship	Mutually beneficial interaction between organization and stakeholders.	Freeman (1984)
Stakeholder management	Process of identifying, analyzing, and engaging with stakeholders.	Freeman, Clarkson (1995)

Source: Synthesis based on Freeman (1984, 1994), Mitchell, Agle & Wood (1997), Suchman (1995), Pfeffer (1981)

3. Resource Dependence Theory (RDT): The Structural Pillar

The second pillar is Resource Dependence Theory (RDT), formulated by Pfeffer and Salancik (1978). If Stakeholder Theory explains who matters, RDT explains *how* the environment constrains the farmer's freedom of action.

Key Concept	Definition
Resource Dependence	Dependence on external resources for survival and goal achievement.
Resource Power	Power conferred on holders due to resource scarcity and importance.

Adaptation Strategies	Actions (diversification, alliances) to reduce vulnerability.
External Constraints	The context providing or limiting access to resources.
Interdependence	Mutual relationships between the firm and resource providers.

3.1. The Logic of Interdependence and Power

RDT posits that organizations are open systems that depend on critical resources they do not fully control. In agriculture, these resources include water, arable land, financial credit, and technical information. Dependency is defined by three factors: the importance of the resource, its scarcity (concentration), and the discretionary control held by external providers (Paulus, 2006).

3.2. RDT in the Digital and Globalized Era

Modern management research has updated this theory. Davis and Cobb (2010) point out that organizations today face new dependencies on data, digital platforms, and transnational governance systems. For a Tunisian farmer, this translates into a dependence on global market certifications and digital technical climate data, which redefine the conditions for survival.

4. Synthesis and Articulation: A Dual Analytical Lens

The core of our theoretical contribution lies in the articulation of these two theories. While they are often treated separately, their simultaneous integration provides a multidimensional view of the "logic of action" of the Tunisian farmer.

The logic of action, as developed by Philippe Bernoux posits that actors' behavior is neither random nor purely dictated by regulations, but rather results from a coherent construction responding to specific challenges. Presented much earlier by Michel Crozier and Erhard Friedberg (Strategic Analysis, 1977), they explain that actors have bounded rationality. Their logic of action is a "strategy" to increase their power and room for maneuver within "zones of uncertainty." (cited by Bréchet, J.-P., & Schieb-Bienfait, N. (2011).) Similarly, Jean-Daniel Reynaud (1989) introduced the idea that logics of action produce rules. He distinguishes between control regulation (imposed by hierarchy or the State) and autonomous regulation (produced by actors in the field) (cited by Bréchet, J.-P., & Schieb-Bienfait, N., 2011). Our research problem often lies in the conflict between these two forms of regulation.

Thus, in our research, integrating the concept of action logic into the two theories of Stakeholder Theory (ST) and Resource Dependency Theory (RDT) enriches the theoretical framework for a better understanding of the managerial behaviors of Tunisian farmers. The farmer is not a passive recipient of environmental pressures, but an actor who interprets their needs. In the Manouba and Mornag regions, the farmer's action logic (often a logic of survival or maintaining their assets) acts as a filter. They do not perceive "sustainability" as an abstract concept, but rather through the lens of their actual capacity to maintain their farm.

According to the RDT (Pfeffer & Salancik, 1978), organizations are controlled by those who hold critical resources (water, land, credit, etc.). The lack of these resources (land fragmentation identified by Dhehibi et al., 2014, and water scarcity highlighted by Jeder et al., 2021) dictates the farmer's logic of action in the face of dependence on scarce and costly resources, leading to a reactive and short-terms approach.

R. Edward Freeman (1984), through Stakeholder Theory, argues that an organization’s performance depends on its ability to manage stakeholders’ expectations (State, suppliers, collectors, water associations). Therefore, the sustainability gap arises from a conflict between stakeholders’ logics of action (normative/regulatory logic of the State) and that of the farmer (logic of immediate economic efficiency). Relationships with stakeholders are not mere information flows but arenas of negotiation. Farmers adopt (or do not adopt) responsible practices depending on the power, legitimacy, and urgency of stakeholders’ claims, as conceptualized by Ronald K. Mitchell et al. (1997).

Research Methodology

1. The Abductive Approach

In the landscape of management research, this study adopts an abductive approach, positioning itself as a "third way" between the rigidity of pure deduction and the descriptive nature of induction (Tavory, 2021). Introduced by Peirce, abduction is defined as a reasoning process used to explain "surprising" or unexpected observations (Aliseda, 2006).

Unlike deduction, which tests existing theories, or induction, which generalizes from specific facts, abduction starts from a problematic empirical fact to propose a plausible explanatory hypothesis. This allows us to creatively combine the raw data from Tunisian farms with existing theoretical frameworks (Stakeholder and Resource Dependence Theories) to produce new conceptual links (Dumez, 2013).

2. Case Study Strategy

To address the "how" and "why" of sustainable practices, we have chosen the case study strategy. As Yin (1990) and Eisenhardt (1989) emphasize, this method is ideal for understanding the dynamics of specific, bounded environments. Our research treats "farming systems" as bounded cases embedded in specific territorial and institutional contexts.
We have opted for a multiple-case study focusing on two distinct agricultural regions in Tunisia:

- **The Manouba Region:** Manouba is a strategic agricultural governorate located 20 km from Tunis. It has 285,000 hectares of agricultural land, representing 70% of its total area. Primarily characterized by cereal crops. We have conducted five interviews in main phase and four in exploratory phase.
- **The Mornag Region:** The Mornag region, located on the outskirts of Tunis, constitutes the “agricultural stronghold” of the southern suburbs, with 39,600 ha, including 8,660 ha irrigated (dams/hill reservoirs).

This dual-site approach allows for a comparative analysis of how different production systems balance economic constraints with environmental and social obligations. The investigation was structured into three phases: an exploratory phase (comprehensive interviews), a main phase (semi-structured interviews), and a validation phase (follow-up interviews).

3. Data Collection Methods: Triangulation of Reality

To ensure the "access to reality" described by Roussel and Wacheux (2005), we mobilized three complementary qualitative tools.

3.1. Non-Participant Observation

Non-participant observation refers to situations in which the researcher observes without taking part in the activities under study (Chevalier and Stenger, 2018, p. 95).

We initiated non-systematic observation from the very first phase of our immersion in the field, in parallel with the conduct of the comprehensive and semi-structured interviews.

Illustrated example of field Observation Grid: Sustainable Agricultural Practices on a farm in Manouba

Interviewee ID	Farm (Summary)	Observation time
I2-2	Small 4ha farm	Afternoon

A. Resource Management and Dependence (RDT Focus)

Observation form	Indicator /detail	Observation
A1. Input Storage	Presence and organization of chemical input storage.	Presence of pesticide containers and fertilizers (often stored without precaution, indicating high usage).
A2.Waste Management	Disposal of empty pesticide containers.	Empty containers dumped in a corner of the plot, or burned (absence of recycling procedure).

B. Practices and Sustainability (Observation Focus)

Observation form	Indicator /detail	Observation
B1. Agroecological Practices	Visible signs of rotation, intercropping.	Absent/Minimal (dominant "copy-paste" practice and seasonal monoculture).
B2. Innovation Signs	Presence of advanced systems (hydroponics, solar).	Absent (investment is judged too expensive and risky for the majority).

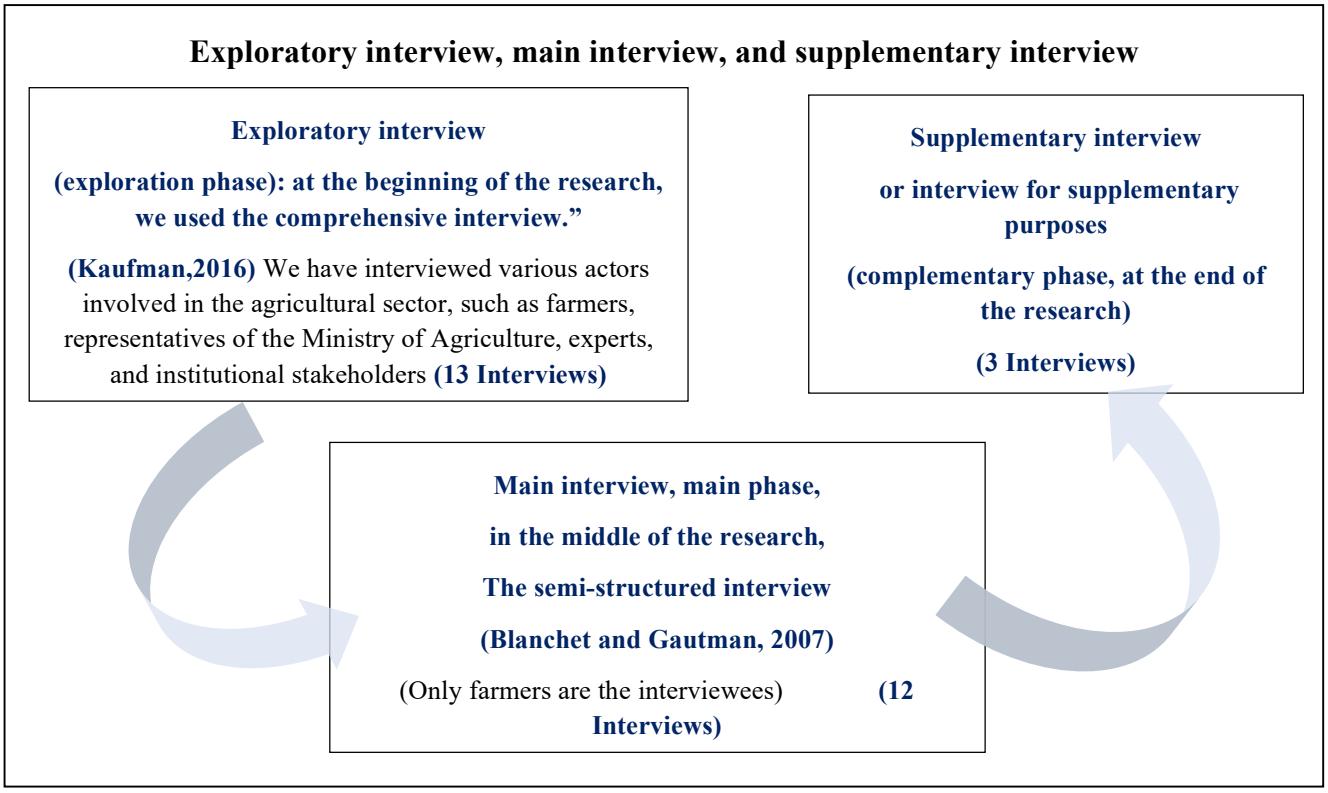
C. Stakeholder Presence and Institutional Links (ST Focus)

Observation form	Indicator /detail	Observation
C1. Institutional Signs	Presence of logos, posters from the Ministry, CRDA, UTAP.	Absent. No recent infrastructure or official signage visible.
C2. Private Sector Presence	Visible branding of suppliers.	Strong indirect presence: Receipts or input packaging bearing private supplier brands (confirming the debt relationship and dependence).

3.2. Qualitative Interviews

The interview served as our primary tool for accessing the "mental universe" of the farmers (Baumard et al., 2014). Two distinct types were used:

The different uses of interview-based inquiry, by Blanchet and Gautman (200 Source



adapted from Blanchet and Gautman, (2007)

4. Data Analysis: The Writing-Mode Technique

For the analysis, we adopted the "writing-mode analysis" developed by Paillé and Mucchielli (2021). This method treats writing as a tool for deconstruction and interpretation. The process unfolded in three stages:

Transcription: Converting audio recordings and field notes into a workable textual base.

Transposition: The critical phase of appropriation, deconstruction, and reconstruction, where the raw data is fragmented and then re-assembled to produce meaning.

Reconstitution: The final synthesis where results are structured into a coherent narrative, translating observed situations into formal management concepts.

we will attempt to present an in-depth analysis of the interviews conducted during the main phase. This stage was undertaken after we had transcribed and translated all the interviewees' responses (Paillet &Muchielli, 2021, method.) Reading and rereading the transcripts allowed us to identify the main concepts and themes raised by the interviewees.

Results and Analysis: Comparative Case Studies

Section I: Case No. 1 – The Manouba Region

Manouba serves as a critical agricultural gateway to the capital, with 70% of its land dedicated to farming. However, the region is currently defined by a "vulnerability paradox": despite its strategic importance, it faces a combination of ageing farmers (average age 58), chronic water stress, and encroaching urbanization (+15% since 2000). (Jeder et al., 2021).

The following results emerge from semi-structured interviews.

1.1. Structural Constraints and Resource Dependence

The primary finding is a state of absolute dependence on dwindling natural resources, which dictates every management decision on the farm.

- **The Water Crisis:** Chronic shortages have moved from a climatic threat to an operational reality. Farmers report the mass death of pear trees (a historical regional staple) and a forced reduction in cultivated areas.
- **The Salinity Trap:** In a desperate attempt to find water, farmers invest in deep wells (up to 60 meters), only to find highly saline water. The cost of purification remains an insurmountable barrier for the 70% of smallholders who own less than 5 hectares.
- **Financial Indebtedness:** Rising costs of inputs (seeds, pesticides) combined with stagnant selling prices have created a cycle of debt. Farmers operate on negative margins where the selling price often fails to cover even basic labor expenses.

1.2. Flawed Governance and Institutional Vacuum

The interviews reveal a profound legitimacy crisis regarding public institutions.

- **Institutional Absence:** Structures such as the Ministry of Agriculture (CRDA, CTV) and the national farmers' union (UTAP) are perceived as disconnected from the field. Many respondents describe their relationship with the state as "zero" or based on "empty talk."
- **Procedural Rigidity:** Administrative and tax procedures are viewed as punitive rather than supportive. Farmers feel abandoned in legal disputes or when facing procedural failures, asking, "Where is the Ministry?"
- **The Private Sector Pivot:** In the absence of state-led cooperatives (which have largely disappeared), farmers have been forced to rely entirely on the private sector for both technical advice and informal credit.

1.3. Representations of Sustainability and Practical Dichotomies

Sustainability in Manouba is marked by a clear divide between two groups of actors:

- **The "Committed" Minority:** Better-informed farmers who utilize private engineers and adopt innovations like vermicomposting, optimisation of input doses, deliberate rotation of plant protection products, crop diversification and investment in water retention structures. These profiles correspond to managers capable of mobilising cognitive resources (reading, training), relational resources (access to engineers, projects, YouTube, etc.), and financial resources (investment capacity), in line with work on the role of human and social capital in adopting sustainable practices (Gafsi & Favreau, 2013; Jeder et al., 2021).

- **The Traditional Majority:** A larger group anchored in "copy-paste" agriculture. They rely on inherited traditional practices and neighbor imitation rather than scientific studies, empirical management of inputs ("we do as we always have"), and a focus on short-term survival. Limited access to reliable information, weak extension services, debt pressure, and climatic uncertainty all constrain the possibility of investing in more responsible practices, even when awareness of risks exists. The farmers mention in addition the Disinterest of Youth: Agriculture is no longer seen as a path to success. The lack of reliable extension services makes sustainability an "abstract" concept for those struggling with daily survival (and this is the human capital resources, as mentioned by Elloumi,2018).
  This observation aligns with studies showing that adoption of sustainable agriculture is hampered by economic, institutional, and cultural constraints in Tunisian smallholder systems.

Section II: Case No. 2 – The Mornag Region

Mornag represents the "agricultural stronghold" of Tunis's southern suburbs. The qualitative analysis here highlights how environmental degradation and market proximity create a different set of vulnerabilities.

2.1. Ecological and Land-Related Constraints

In Mornag, the constraints are characterized by acceleration:

- **Water Quality Degradation:** Farmers like Walid (I2-3) emphasize that climate change has not only reduced quantity but altered quality through, leading to new crop diseases and yield declines.
- **Urban Speculation:** Land fragmentation is exacerbated by urban sprawl. This makes mechanization difficult and increases the economic precariousness of those holding small, disconnected plots.

2.2. Institutional Void and Private Sector Critique

The sense of abandonment is even more pronounced in Mornag than in Manouba.

- **Administrative Laxity:** Respondents complain of a total lack of guidance or support programs.
- **Unregulated Input Use:** Without institutional oversight, there is an "excessive use of pesticides" driven by aggressive marketing from private companies. Farmers criticize these firms for selling products without scientific concern and blaming the farmer if the crop fails.

2.3. Practices: Tradition vs. Rationalization

Agricultural practices in Mornag reflect a survival logic:

- **Input Overconsumption:** Driven by a lack of awareness and analysis, many farmers overuse chemicals as a "safety net," failing to use the correct dosage or rotation.
- **The Generational Gap:** As in Manouba, young people are fleeing the sector due to high risks and low profitability.

2.4. Technological Innovation: The Case of Hydroponics

Mornag offers a unique empirical example through a young entrepreneur practicing hydroponics. This soilless technique addresses two major regional constraints:

1. **Water Stress:** It significantly reduces water consumption.
2. **Soil Degradation:** It bypasses contaminated or saline soils.

The Hydroponics Paradox: While it represents a sustainable pathway, its "barriers to entry" are high. It requires significant capital, technical know-how, and constant monitoring, making it currently inaccessible to the traditional smallholder. Furthermore, it is a technique limited to certain crops (mainly market garden crops). It remains a "complementary" rather than a "transformational" solution for the masses.

The table below presents a comparison between the two regions based on the main key dimensions identified during the interpretation of interviews in both regions. This comparison supports the criteria for research validity in terms of transferability. (Guba (1981); Paillé (2012)).

Comparative Results Manouba / Mornag

Key dimensions	Manouba	Mornag
Agro-ecological context	Strategic governorate near Tunis, 285,000 ha of agricultural land (70% of total area), dominated by small farms (< 5 ha), cereals and vegetables, high vulnerability to drought.	"Agricultural stronghold" of the southern peri-urban belt (39,600 ha, 8,660 ha irrigated), strong urbanization, proximity to a dynamic metropolitan market, degraded environment (salinization, industrial pollution, land fragmentation).
Water constraints	Chronic water stress, overexploited and increasingly saline aquifers, use of low-quality water, reduction of cultivated areas and abandonment of some tree crops.	Water scarcity combined with seawater intrusion, strongly increasing salinity, yield decline and new diseases; stronger pressure on fruit tree farming.
Land constraints	Structure dominated by small farms, often concentrated in a single plot, which facilitates management despite urban pressure.	Advanced land fragmentation driven by urbanization and speculation, complicating mechanization and management and reinforcing economic precariousness.
Input dependence and indebtedness	High input costs: local seeds and pesticides are sought after but expensive; strong indebtedness, farm-gate prices do not cover costs, frequent reliance on quasi-supplier	Overuse of inputs (especially pesticides) within a survival logic; products of uncertain quality; indebtedness reinforced by conditions imposed by suppliers.

	credit.	
Institutional support and governance	Perceived institutional vacuum; public and professional organizations seen as ineffective and distant from field realities; lack of insurance and disappearance of service cooperatives.	Institutional void perceived as even more pronounced: "no guidance or support program", controls viewed as lax or arbitrary, almost no support

These empirical results highlight a common foundation of vulnerabilities and dependencies, as well as differing intensities between Manouba and Mornag. Beyond territorial specificities, they show that in both contexts, farmers find themselves at the intersection of scarce resources, failing institutions, and unbalanced markets, which strongly influences their room for maneuver and their capacity for innovation. Consequently, the transition towards responsible and sustainable agriculture in these two regions is critically conditioned by a profound reconfiguration of support arrangements, modes of governance and relationships between actors, capable of reducing dependence, restoring institutional credibility and creating real margins for maneuver for innovation at the farm level.

Section III: Propositions Derived from the Empirical Analysis

Based on the interpretive analysis conducted in the regions of Manouba and Mornag, the following analytical propositions can be formulated.

P1: Water scarcity and declining quality reinforce farmers' dependence on a critical resource discourage investment in sustainable practices due to persistent uncertainty over access.

The chronic scarcity of water and the degradation of its quality (salinization, overexploitation of aquifers) constitute critical resources that place farmers in Manouba and Mornag in a situation of strong environmental dependence.

The interviews reveal that chronic water shortages and declining water quality represent the central constraint shaping agricultural decisions and conditioning farmers' margins for maneuver.

This dependence is clearly expressed in the verbatim accounts:

« *Farmers in the Manouba region have a major water shortage problem. This has forced farmers to reduce their cultivated areas… most of the pear trees died because of the drought* » (I1-4).

In Mornag, water constraints are compounded by salinization and the emergence of new diseases:

« *The climate has changed, the water quality has changed and become saltier, causing a decline in yields and the emergence of new diseases* » (I2-3).

« المناخ تبدّل، وجودة الماء تبدّلت وولات أكثر ملوحة، وهذا سبّب نقص في الإنتاج وظهور أمراض جديدة » (I2-3)

Interpretation:

Water emerges as a strategic resource that farmers are unable to control, generating a form of structural dependence that hinders long-term planning and significantly constrains any transition toward sustainable agricultural practices.

P2: Institutional voids and weak public support increase farmers' dependence on dominant private actors which in turn constrain their ability to adopt responsible and sustainable agricultural practices.

The insufficiency, or even absence, of institutional support (agricultural administrations, professional organizations, support and insurance mechanisms) intensifies farmers' dependence on dominant private actors (input suppliers, commercial intermediaries). This situation reinforces asymmetric power relations and indebtedness dynamics that are incompatible with a sustainable agricultural transition.

Farmers clearly express this sense of abandonment:

« *Zero relationship, they defend themselves with empty talk, there's nothing concrete* » (Manouba).

« *No, we have nothing from either the union or the Ministry of Agriculture: the main stakeholders are the private sector* » (I1-3).

« لا، ما عنا حتى شي لا من الاتحاد ولا من وزارة »(منوبة) « العلاقة صفر، يكتفيو بالكلام الفارغ وما فما حتى حاجة ملموسة »

*« الفلاحة، الأطراف الأساسية الكلّها من القطاع الخاص (I1-3)*In Mornag, this institutional void is perceived as even more pronounced: *« No guidance or support program » (I2-6).*

« ما فماش حتى توجيه ولا برامج مرافقة » (I2-6)

In the absence of regulation, suppliers impose their conditions, reinforcing indebtedness:

« *Pesticide suppliers are irresponsible… a lot of debt with suppliers and banks* » (I1-4).

« *Companies above all sell their products… and blame the farmer in case of failure* » (I2-4).

« المزوّدين متاع المبيدات ماهمش مسؤولين… وبرشة فلاّحة غارقين في الديون مع المزوّدين والبنوك » (I1-4)

« الشركات يهمّها كان تبيع منتوجاتها … وإذا تصير مشكلة يحمّلوا الفلاّح المسؤولية » (I2-4)

Interpretation:

The lack of institutional regulation and support increases farmers' dependence on private actors, creating unbalanced power relations that undermine both economic viability and the implementation of responsible agricultural practices.

P3: The adoption of innovative responsible practices remains limited due to unequal access to financial, technical, and knowledge resources, creating a gap between a small group of equipped farmers and a majority constrained by short-term survival, which keeps sustainability largely discursive rather than operational.

The adoption of innovative and responsible practices (such as vermicomposting, input rationalization, and hydroponics) remains marginal and socially differentiated, as it is conditioned by access to financial capital, technical knowledge, and credible support mechanisms. In the absence of these resources, the majority of farmers remain locked into short-term survival strategies based on traditional and mimetic practices.

The empirical data reveal strong heterogeneity in agricultural practices. A minority of farmers, described as *« diligent »* or *« committed »*, attempt to adopt more rational or innovative practices, while the majority remains confined to traditional routines rooted in imitation and short-term economic survival.

This dichotomy is explicitly expressed by farmers themselves:

« *There are two types of farmers: diligent… and others who just do the bare minimum* » (I1-4).

*« فما زوز أنواع متاع فلاّحة: فما اللي يخدموا بجدّ واجتهاد… وفما اللي يعملوا كان الحدّ الأدنى برك »*Mimetic behavior clearly dominates:

« *He sees how his neighbor does it, he does it, copy-paste… no reference or study* » (I1-3).

« يشوف كيفاش يعمل جارو، يعمل كيفو بالضبط… من غير حتى مرجع ولا دراسة »In Mornag, this situation translates into excessive use of inputs:

« Many overuse them without any analysis or appropriate dosage » (I2-2).

« برشة يستعملوهم برشة ومن غير حتى تحليل ولا تحديد الجرعة المناسبة »

Innovative practices such as hydroponics are perceived as promising but remain limited to a small elite with access to sufficient capital and technical expertise: *« The establishment of hydroponic systems requires high capital investment »*.

Interpretation:

Sustainability is recognized but remains largely abstract, as its appropriation depends on unequally distributed economic, cognitive, and institutional resources, which significantly limits its large-scale diffusion.

Discussion of the results

1. The "Farmer–Farm" Couple: A Web of Critical Dependencies (RDT)

The research confirms that Tunisian farms are not autonomous units but are caught in asymmetric power relations dictated by three critical resources:

- **Water (The Survival Resource):** Chronic scarcity and salinity in regions like Mornag function as forms of "external control" (Pfeffer & Salancik, 1978). It is no longer just an environmental risk but a structural barrier that forces the uprooting of orchards and the reduction of cultivated areas.
- **Inputs (The Financial Lock-in):** High costs and volatile prices create a "spiral of indebtedness." Input suppliers act as quasi-financiers, gaining significant bargaining power that restricts the farmer's ability to adopt organic or reduced-pesticide practices.
- **Land (The Protective Asset):** Land is both a material and symbolic resource. Tenure security is perceived as the ultimate "protection" against market volatility. In RDT terms, land ownership is the resource that conditions access to all others (credit, water permits, and networks).

The farmer is a manager caught in a network of external dependencies defined by the vital importance, scarcity, and external control of these three pillars.

2. Stakeholder Power Relations: Institutional Void vs. Private Domination

Applying the Mitchell et al. (1997) framework of Power, Legitimacy, and Urgency, the research reveals an unbalanced ecosystem:

- **The Institutional Erosion:** Public and professional bodies (Ministries, UTAP, unions) suffer from a deficit of both power and legitimacy. Described as "absent" they have failed to provide the regulatory mediation.
- **The Private Ascendancy:** Conversely, input suppliers and intermediaries hold high urgency and economic power. They steer short-term decision-making, often prioritizing sales over environmental or health ethics.
- **Peer Dynamics:** Relations with other farmers lead to an ambivalent "copy-paste" mimicry, which often reproduces unsustainable practices rather than fostering innovation.

3. Logics of Action: Innovation vs. Reproduction

A typology of management styles emerges from the writing-based analysis:

- **The Minority ("Committed Farmers"):** These strategic managers leverage cognitive resources (training, YouTube, engineers) and relational capital to adopt vermicomposting, hydroponics, or diversification. They successfully reduce their external dependencies.
- **The Majority (Survival-Oriented):** Trapped in a "multiple dependence lock-in," most farmers prioritize short-term survival due to debt pressure and climatic uncertainty, even when aware of ecological risks.

4. Theoretical Convergences and Tensions

The joint mobilization of RDT and ST provides a multidimensional view:

- **Convergence:** RDT explains what resources cause vulnerability, while ST explains who mediates that vulnerability.
- **Tensions:** While RDT suggests strategies like cooperation to reduce dependence, the institutional "mistrust" in Tunisia prevents these collective arrangements from forming. Furthermore, the "normative responsibility" of stakeholders is absent; the farmer alone bears the risk of the transition.

5. Endogenous Proposals: Insights from the Field

Despite the constraints, farmers offer concrete, bottom-up solutions to "invert" their dependencies:

- Creation of a production-levy compensation fund.
- Digitalization of extension services and the mobilization of unemployed engineers.
- Stricter regulation of pesticide imports and protection of local seeds/land.

6. Research Contributions

6.1. Theoretical Contribution: The Qualitative Shift

The primary contribution lies in applying **RDT and ST** traditionally functionalist/quantitative theories to an interpretive qualitative design. This addresses a "blind spot" in the literature by showing how structural dependencies are not just mechanical facts but are perceived, interpreted, and resisted by actors in their daily practice.

6.2. Methodological Contribution: Triangulation

The research achieves "credibility and richness" (Savoie-Zajc, 2012) through:

- Comprehensive, semi-structured, and follow-up interviews.
- Observation: "Floating observation" across different research phases.
- Analysis method: The use of writing-mode analysis (Paillé & Mucchielli) to co-construct knowledge with the actors.

6.3. Empirical Contribution: Documentation of Vulnerability

The thesis provides a rare, detailed documentation of Manouba and Mornag. It bridges the gap between macro-level sectoral crises (water stress, land fragmentation) and the micro-level relational indebtedness and subjective justifications of the farmers.

Managerial Recommendations

Reconfiguration Axis	Managerial / Public Policy Recommendation	Theoretical Objective (RDT/ST)	Sources in the literature that support these recommendations
Reducing Input Dependence	Stricter regulation of the input market (pesticides, seeds) and recognition of local seeds.	**RDT:** Reduce control by suppliers (quasi-financiers) and economic dependence.	* Studies on the regulation of inputs (seeds, pesticides) recommend stricter market oversight and strengthening of local capacities to reduce risks and dependence on small producers: *"What agro-input dealers know, sell and say to smallholder farmers about pesticides: a mystery shopping and KAP analysis in Uganda". Philipp Staudacher, Curdin Brugger, Mirko S. Winkler, Christian Stamm, Andrea Farnham, Ruth Mubeezi, Rik I. L. Eggen and Isabel Günther.,2021.*
Securing the Agricultural Economy	Establishment of a compensation fund (financed by a tax on production/importation) to manage price volatility and climate risks. More Flexible Financing options at reduced rates	**RDT:** Create financial margins to shift from a survival logic to a sustainable investment logic.	**Macroeconomic studies on investment in climate adaptation show the importance of public risk-sharing mechanisms to enable farmers to invest in more resilient practices.* *"Investing in Climate Adaptation under Trade and Financing Constraints: Balanced Strategies for Food Security" Chen Chen, Koralai Kirabaeva, and Danchen Zhao, 2024.*
Filling the Institutional Void	Modernization and digitalization of local extension services (mobilization of engineers, researchers,). To have/or develop a kind of bridge (organizations, platform, etc.) with strong power to be legitimately recognized by the State (he must be supported by our State) on one side and by farmers on the other.	**ST:** Restore the legitimacy and power of the State and support institutions.	*The FAO documents and recommends the modernization and digitalization of agricultural advisory services (digital extension) to improve access to information, innovations and training for small farmers, including in Tunisia. *FAO, Research and Extension System.*
Strengthening Collective Power	Support the creation of collective organizations (cooperatives, GDAs) to rebalance power against private intermediaries.	**ST:** Offer farmers balanced negotiation arenas and alliances to reduce their vulnerability.	* Studies on the power of intermediaries in agricultural value chains highlight the importance of strengthening farmers' bargaining position through collective organizations and more balanced forms of coordination. *"The Determinants of Intermediaries' Power over Farmers' Margin-Related Activities: Evidence from Adana, Turkey" Orjon Xhoxhi, Søren Marcus Pedersen , Kim Martin Lind , Attila Yazar,2014*

Supporting Innovation	Targeted aid programs for heavy investments (such as hydroponics or water-saving structures) for minority committed farmers.	**RDT/Agency:** Allow emancipation and diversification strategies to develop beyond mere financial capital.	* Cooperation and development projects show that targeted co-financing mechanisms for hydroponics and other water-saving technologies enable pioneering farmers to overcome initial investment barriers and increase productivity while reducing water consumption. *(For example, in Rowanda, LuxAid (Luxembourg Aid&developpement) has implemented a financing plan for agricultural projects using hydroponics*.)

Conclusion

1. Research Problem and Objectives

This dissertation addresses the critical "sustainability gap" in the Tunisian agricultural sector, where national policies promoting responsible practices clash with a harsh reality of land fragmentation, resource scarcity, and climate vulnerability. Focusing on the Manouba and Mornag regions, our research explores ***how farmers perceive and integrate responsible and sustainable practices into their farm management through resource allocation and their relationships with different stakeholder***.

2. Theoretical and Methodological Framework

The study utilizes a dual theoretical lens to decode agricultural dynamics:

- Resource Dependence Theory (RDT) (Pfeffer and Salancik, 1978): Analyzes how the scarcity and external control of water, inputs, and land create power asymmetries that restrict the farmer's strategic autonomy.
- Stakeholder Theory (ST) (Freeman, 1984): Examines the farm as a node in a network, highlighting the roles of the State, suppliers, and intermediaries in shaping managerial decisions.

Adopted from an interpretivist stance (Girod-Séville & Perret, 1999 in Thietart and coll.; Wacheux, 1996; Paillé & Mucchielli, 2016, 2021), the research employs an abductive qualitative approach. Adopting two case study strategy (Manouba and Mornag regions) allows for in-depth analysis of logics of action, trajectories and stakeholder configurations, in line (Eisenhardt (1989), Yin (2014) and Rispal (2002).

Data collection combined comprehensive and semi-structured interviews with non-participant observation and "writing-mode analysis"(Paillé and Mucchielli 2016, 2021) to build theory directly from the farmers' lived experiences.

3. Main Empirical Findings

The findings reveal a "systemic trap" characterized by three dimensions of vulnerability:

3.1. Critical Dependencies (RDT)

- **Water:** The most strategic constraint. Chronic scarcity and salinity (especially in Mornag) force farmers into defensive strategies, such as uprooting orchards and reducing cultivated areas.
- **Inputs:** A primary source of financial lock-in. Rising costs and debt to suppliers—who act as quasi-financiers prevent farmers from reducing pesticide use or shifting to organic methods.
- **Land:** Perceived as the ultimate "safety net," yet threatened by urban pressure and fragmentation, particularly in peri-urban Mornag.

3.2. Institutional Void and Private Domination (ST)

The study highlights a significant imbalance in the stakeholder network:

- Public Institutions: Ministries and unions suffer from a crisis of legitimacy and are perceived as "absent" or ineffective.
- Private Actors: Input suppliers and intermediaries hold dominant power, controlling seasonal credit and capturing a disproportionate share of value.

- Peer Influence: Farmers alternate between mutual support and a "copy-paste" mimicry that often reproduces unsustainable traditional routines.

3.3. Logics of Action: Survival vs. Innovation

A clear dichotomy exists between a minority of "committed" farmers (innovating through hydroponics, vermicomposting, or agroecology) and a majority in "survival mode", whose practices are dictated by short-term economic constraints rather than ecological ideals.

4. Research Contributions and Answer to the Question

The dissertation confirms that while Tunisian farmers clearly perceive sustainability issues, their ability to act is structurally limited. The answer to the research question is nuanced: integration of sustainable practices is happening, but it is fragile and conditioned by the reconfiguration of the power structures surrounding the farm.

Contributions include:

- Theoretical: Demonstrating the value of RDT and ST in qualitative, small-holder contexts to reveal the socio-institutional nature of transitions.
- Empirical: Providing rare, verbatim-based documentation of the logic of action in Manouba and Mornag.
- Methodological: Triangulation: comprehensive, semi-structured, and follow-up interviews, with observation: "Floating observation" across different research phases.
  In addition, the use of writing-mode analysis (Paillé & Mucchielli) to co-construct knowledge with the actors.

5. Recommendations and Future Avenues

To break the cycle of dependence, the dissertation proposes:

1. Regulating the Input Market: Reducing the "quasi-financier" power of suppliers by promoting local seeds.
2. Securing the Agricultural Economy: Establishing a compensation fund to manage climate and price risks.
3. Restoring the State's Role: Modernizing extension services via digital platforms and mobilizing engineers.
4. Strengthening Collective Power: Supporting cooperatives to rebalance the negotiation arena against intermediaries.

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Track 5 - Artificial Intelligence and Information and Communication Technologies

ASSESSING THE ENABLERS AND CONSTRAINTS OF BIG DATA ADOPTION IN AN INSURANCE COMPANY IN GHANA

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Abstract
The main aim of this study is to explore the enablers and constraints of big data adoption in an insurance company in Ghana. With a sample size of 60 employees selected via convenience sampling, the study utilized descriptive statistics to analyse the data using SPSS 26. The findings indicate that the main enablers of big data adoption include value-added to customers, impact on the organizational output, raising the service standards, fraud detection, and improving risk assessment. The major constraints to big data adoption are the internal financial problems to support training of big data to the employees, inadequate technical capabilities of employees, lack of top management support, and insufficient Internet for big data support. The study recommends that big data implementation must be given ultimate support by stakeholders of the insurance companies, as well as the government, to exhibit effective improvement in service quality in this organization and other insurance companies in Ghana.

Keywords: big data, enablers and constraints, insurance company, Ghana

Introduction

Big data implementation and usage have been established to simplify data sets to make it easier for the insurance industry. With this, big data may successfully simplify datasets in both structured and unstructured formats (Jones et al., 2019). Using revolutionary forecasting exactness, big data analytics accurately provides a value chain in identifying risk, client action, and entitlement. Big data has a wide range of applications in the insurance sector, including threat intelligence, premium outflow, outflow tracking, subrogation, accounting, and scam detection (Burri et al., 2019). Thus, given current trends, stakeholders have begun to investigate unsupervised learning, which offers a wealth of specified objectives.

The term big data refers to "the rapidly growing volume, velocity, and granularity of data sets that are accessible and linked" (Actuaries Institute, 2016). The capability to create and analyse such great data sets is shifting the way insurers see big groups of customers and price risks. Thus, it will influence insurance costs and availability for all customers (Actuaries Institute, 2016).

Evidence on the effects of big data analysis on insurance, however, is lacking, according to empirical investigations, especially in developing economies like Ghana (Stephen & Sue, 2017). Generalization of the existing studies is challenging because the investigations were limited to certain geographical and cultural contexts, excluding developing countries. Thus, the purpose of the study is to close this gap by examining the enablers and constraints of big data adoption in the Ghanaian insurance sector.

The study, therefore, seeks to answer the following research questions:

1. What are the enablers and constraints of big data adoption in an insurance company's operations?

The rest of the paper is organized as follows: the next section discusses the literature review, which is followed by the methodology. Then data analysis with discussions of findings follows. The last section addresses the conclusion with its implications and suggestions for future research.

Literature Review

The Value of Big Data to Insurance Companies

Big Data technologies bring enormous value to insurance firms (Gallo, 2017). Firstly, "it improves the profit space of insurance companies and increases their premium income. Big data technology provides a strong guarantee for mastering effective customer demand in real-time, selecting high-quality customers, reducing loss ratios, and improving profits. Big data can partially solve information asymmetry, accurately classify customers according to their actual situations, enable companies to charge higher risk premiums for customers with higher risk levels, lower risk premiums for customers with lower risk levels, and encourage companies to retain high-quality customers as well as develop advantageous customer groups through customer behaviour analysis, and improve the overall profitability of insurance companies" (Mäder, 2018). Secondly, "big data provides insurance companies with a greater market share. Big data can release precise marketing products. The products can be accurately delivered to customers who need them through the analysis of user behaviour. Relying on big data technology, insurance companies can efficiently search for customers from many different angles and various ways, finding potential new customers, tapping into the potential needs of existing customers, expanding traditional sales channels of insurance companies, and providing strong guarantees for an expanding market share" (Verhoef et.al, 2021; Ali et.al, 2021). Thirdly, "the application of big data broadens the development space of insurance industry. Big data technology has broken through the boundary between the existing insurable risk and uninsured risk, changing original uninsured risk into insurable risk and expanding the scope of the insurance business, enabling customers' resources to be shared among different business entities" (Gallo, 2017).

The Uses of Big Data in Insurance Companies

The underlying uses of Big Data in Insurance Companies include fraud detection, gathering of information, and risk assessment and threat mapping.

1. *Fraud detection*: With the use of predictive modelling and data management, the insurance companies employ big data in fraud disclosure to detect any criminal activity (Verma & Mani, 2018).
2. *Gathering of information*: Because huge data refers to gathering records from many sources, this feature provides a valuable use case for the insurance industry to exploit. When a consumer wants to acquire a car insurance policy, for instance, the businesses can obtain records from which they can determine the protection levels for driving in the buyer's area, as well as the buyer's previous driving records (Boodhun & Jayabalan, 2018). In healthcare, the production of high-quality data is not always a by-product of the system. To produce high-quality data, someone must gather it in the great majority of cases (Michael et al., 2014).
3. *Risk Assessment and Threat Mapping*: Risk assessment is an important part of the life insurance market since it helps to categorise applicants (Boodhun & Jayabalan, 2018). Underwriters closely examine the risk profiles of individual applicants, particularly in the life insurance industry (Cummins et al., 2013).

Risk assessment is a method of "evaluating the likelihood and severity of adverse effects or events occurring" to man or the environment because of "exposure to a risk source under defined conditions", as well as the associated uncertainties (Dilbag & Pradeep, 2012).

Enablers of Big Data in Insurance Companies

The underlying prospects or enablers of Big Data in insurance companies include the enrichment of insurance risk factors, achievement of accurate pricing, improving the quality of insurance services, and providing value-added services (Mäder, 2018; Verma & Mani, 2018; Boodhun & Jayabalan, 2018). Notably, the following enablers are identified which are assessed for their potency when it comes to enablers of Big Data in insurance companies: (i) impact on the organizational output; (ii) accurate and detailed life table (iii) loss risk likelihood and loss degree more accurately; (iv) successfully raise service standards (v) value-added services for customers; (vi) information generated is very high; and (vii) fraud detection (Cummins et al., 2013; Dilbag & Pradeep, 2012; Boodhun & Jayabalan, 2018; Stephen & Sue, 2012; Stuart & Maneeza, 2015; Verma & Mani, 2018).

Constraints of Big Data in Insurance Companies

The insurance sector is faced with several challenges regarding the issue of client payment of premiums. Policyholders feel reluctant to pay their premiums because of some insurance companies' policies and services, as well as some external factors. For instance, clients fail to pay premiums because of inflation, low or no discounts, poor agent integrity, inadequate disposable income, and poor customer service (Odemba, 2013). This brought a rippling effect on the insurance industry by making them function ineffectively in terms of the provision of claims.

A regulatory body known as the National Insurance Commission (NIC) in Ghana had to come in to put measures in place for the industry to discharge its duties effectively and efficiently (Oscar Akotey et al., 2013). This led to the creation of the policy "no premium no cover"; the policy was set with the purpose of standardizing the operations of insurance firms, building public confidence, improving the functionality of the insurance industry, and boosting GDP growth. The policy is acknowledged to be an effective and efficient one, as it has a positive effect on the performance of insurance companies. For instance, Laryea (2016) revealed that the policy helps increase liquidity, reduce credit risk, and boost consumer confidence due to better claim settlements.

Some of the constraints of Big Data in insurance companies include conflicts, data value, insufficient interactions, data islands, and cross-border competition (Agarwal & Dhar, 2014; Goes, 2014; Mäder, 2018). Notably, the following constraints are identified which are assessed for their potency when it comes to constraints of Big Data in insurance companies: (i) internal financial problems; (ii) inadequate technical capabilities; (iii) lack of top management support; (iv) productivity inefficiencies; and (v) internet insufficiency for big data (Accenture, 2016; Boulton, 2015; Lee et al.. 2015).

Conceptual Framework

The conceptual framework derived from the literature is depicted in figure 1.

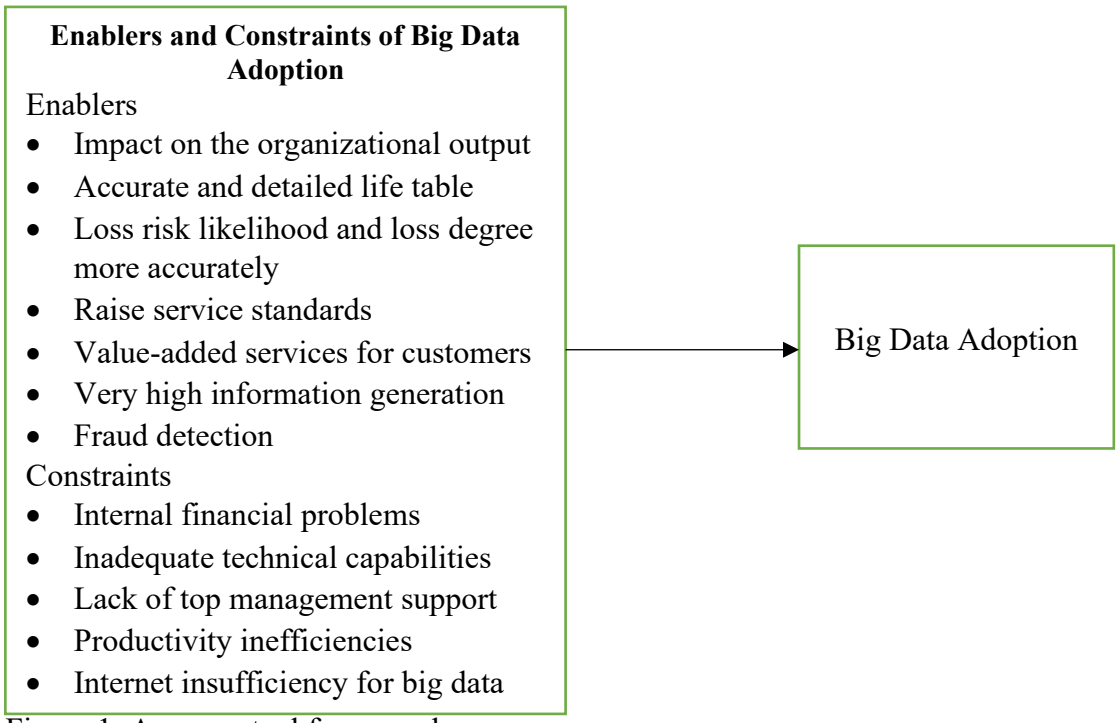


Figure 1: A conceptual framework

From the literature and as shown in figure1, the identified enablers of big data in insurance include impact on the organizational output, accurate and detailed life table, loss risk likelihood and loss degree more accurately, successfully raise service standards, value-added service for customers, and information generation is very high (Cummins et al., 2013; Dilbag & Pradeep, 2012; Boodhun & Jayabalan, 2018; Stephen & Sue, 2012; Stuart & Maneeza, 2015; Verma & Mani, 2018).

On the other hand, the constraints identified include internal financial problems, inadequate technical capabilities, lack of top management support, productivity inefficiencies, and internet insufficiency for big data (Accenture, 2016; Boulton, 2015; Lee et al., 2015).

Methodology

The study resorted to the use of a quantitative approach for data collection and analysis. The target population were staff of an insurance company. Via convenience sampling, the study utilized 60 employees of the insurance company who agreed to participate in the study out of 97 employees. The data was gathered through a survey questionnaire administered online via Google Forms.

The data was analysed using the IBM Statistical Package for Social Sciences (SPSS 26). Descriptive statistics, leveraging frequencies, percentages, means, and standard deviations, were used to analyse the quantitative data generated.

Analysis, Results, and Discussions

Demographic of Respondents

Table 1: Summary of Demographic Characteristics of Sampled Respondents

Variable	Category	Frequency (N=60)	Percentage (%)
Level of education			
	GES O level/A level	8	13

	Diploma/Professional	10	17
	First Degree	20	33
	Masters	22	37
Number of years working with the organization			
	Less than 1 year	20	33
	1-2 years	24	40
	3-4 years	10	17
	More than 4 years	6	10
Rank			
	Junior staff	38	63
	Middle staff	8	13
	Senior staff	14	23
Role/Position			
	HR	1	2
	Accountant	12	20
	Underwriter	9	15
	Marketer	36	60
	IT	2	3

From Table 1, twenty-two of the respondents have a master's degree, representing 37%. Twenty of the respondents have a first degree, representing 33%. Ten of the representing 30% have a Diploma/professional certificate. This shows that the majority of the respondents have a master's degree. Also, twenty-four of the respondents have worked between 1-2 years, constituting 40%, followed by respondents who have worked for less than 1 year, representing 33%. In addition, thirty-eight of the respondents, representing 63%, are junior staff, whereas fourteen of the respondents, constituting 23%, are senior staff. Again, most of the respondents are occupying the position of marketing, constituting 36 (60%), followed by the staff occupying the position of Accountant, representing 12 (20%).

Table 2: Descriptive statistics of big data adoption enablers and constraints

Questions	Mean	Standard Deviation	Scaled response	Verbal Interpretation
Big data technology usage has had a significant impact on the company's output.	3.55	0.91	Agree	Good
With the development of big data technology, an organization can create a more accurate and detailed life table.	4.99	1.11	Strongly agree	Very good
The growth of big data technology has made it possible to calculate loss risk likelihood and loss degree more accurately.	4.16	.70	Agree	Good
Big data assists in analyzing the traits, routines, and preferences of consumers to successfully raise service standards.	4.44	0.79	Agree	Good
The use of big data will help provide value-added services for customers in the organization.	3.51	.90	Agree	Good
The use of big data has greatly increased the detection of fraud.	4.22	0.75	Agree	Good
Customer information, payment records, and other information generated have great repeatability.	4.16	0.69	Agree	Good

Internet for big data, existing data in the insurance industry is obviously insufficient in frequency	4.16	0.69	Agree	Good
Lack of top management support for the training and development of big data.	4.21	0.58	Agree	Good
Inadequate technical capabilities of trainers/trainees in big data.	4.84	1.09	Strongly agree	Very good
Productivity inefficiencies due to the lack of a big data analyst.	4.44	0.79	Agree	Good
Internal financial problems to support the training of big data.	4.93	0.14	Strongly Agree	Very Good

"Strongly Disagree =1.00-1.49, Very poor; Disagree = 1.50-2.49, Poor; Neutral = 2.50-3.49, Fair; Agree = 3.50-4.49, Good; Strongly Agree = 4.50-5.00, Very good"

The main research objective was to explore the enablers and constraints of big data adoption in an insurance company in Ghana. The results of the enablers and constraints of big data adoption in the insurance company are shown in Table 2.

Regarding the enablers, it is evident that the highest scaled item with (*Mean=4.99, Standard Deviation=1.11*) indicated that with the growth of big data technology, a more precise and comprehensive life table can be constructed in the organization, and was agreed and verbally interpreted as very good. According to Ruchi and Sathyan (2018), big data technology can enable insurance businesses to get personal insurance rate information from policyholders and enable actuarial pricing of insurance products to be done on an individual basis. A "more precise and thorough life table may be created, thanks to the advancement of big data technology, and loss risk probability and loss degree can also be calculated with greater accuracy". Using "life insurance as an example, the life table is a summary table" that includes "the mortality rates at each age" and is based on data about deaths at different ages in the past. The second largest scale item is the use of big data can help analyse "customers' characteristics, habits, and preferences to effectively improve service quality" in this organization, with (*Mean=4.44, Standard Deviation=0.79*), and "was agreed with a verbal interpretation as good". Furthermore, "respondents also agree with a verbal interpretation as good that" with the development of big data technology, calculation of loss risk probability and loss degree can be calculated accurately, representing a (*Mean=4.16, Standard Deviation=0.70*). In addition, the respondents agreed that the use of big data has greatly increased the detection of fraud with (*Mean=4.22, Standard Deviation=0.75*). Also, they further agreed with verbal interpretation as good that extensive training programs on big data will have an impact on the organizational output, representing (*Mean=3.55, Standard Deviation=0.91*). Again, they further agreed with verbal interpretation as good that "customer information, payment records, and other information generated have great repeatability" with (*Mean=4.16, Standard Deviation=0.69*). Finally, with a (*Mean=3.51, Standard Deviation=0.70*), they further agreed with verbal interpretation as good that the use of big data will help provide value-added services for customers in the organization. These findings were supported by (Cummins et al., 2013; Dilbag & Pradeep, 2012; Boodhun & Jayabalan, 2018; Stephen & Sue, 2012; Stuart & Maneeza, 2015; Verma & Mani, 2018).

Regarding the constraints, the highest scaled item *(Mean=4.93, Standard Deviation=0.14*) indicated that *internal financial problems to support training of big data have been a constraint, and* was agreed and verbally interpreted as very good. The second highest scale item is *inadequate technical capabilities on the trainer/trainee of big data,* with a (*Mean=4.84, Standard Deviation=1.09*), and was agreed with a verbal

interpretation as good. This alludes to what Mäder (2018) said, that "one consequence is that due to the lack of training and knowledge about Big Data, decision makers within insurance companies are not willing to try out something new using it: only 35% are ready to implement any innovative applications associated with Big Data". Furthermore, respondents also agree with a verbal interpretation as good that productivity *inefficiencies due to the lack of big data analyst* representing a (*Mean=4.44, Standard Deviation=0.79).* Also, they further agreed with verbal interpretation as good (*Mean=4.21, Standard Deviation=0/58*), that the *lack of top management support for the training and development of big data* is a challenge. Finally, they further agreed with verbal interpretation as good that the "*Internet for big data, existing data in the insurance industry are obviously insufficient in frequency"* representation (*Mean=4.16, Standard Deviation=0.61*). These findings were supported by (Accenture, 2016; Boulton, 2015; Lee et al., 2015).

Conclusions

The main objective was to explore the enablers and constraints of big data adoption in an insurance company in Ghana. The study indicates that the main enablers of big data adoption in the insurance company are: creating a more accurate and detailed life table; analysing the traits, routines, and preferences of consumers to successfully raise service standards; increased detection of fraud; calculation of loss risk likelihood and loss degree more accurately; improved information generation; and impact on organisational output.

Also, the study established that the main constraints of big data adoption in the insurance company are: internal financial problems to support training of big data; inadequate technical capabilities on trainer/trainee; productivity inefficiencies due to the lack of big data analyst; lack of top management support for the training and development of big data; and insufficient in frequency of internet for big data.

Implication to Practice

The results of this study inform practitioners that insurance businesses must implement big data technologies and leverage their capabilities to improve their operations and performance, as depicted in the study's findings.

Also, insurance company management needs to take the constraints identified seriously and make sure adequate support from top management, adequate resources, and training, which cannot be underestimated if they want to stay competitive.

Implications for Policy

The study contributes to policy by highlighting the requirement for the adoption of regulations that create an enabling environment for the use and integration of technology within private and public insurance firms. It is important to consider the security and privacy dynamics that could favourably or unfavourably affect any digital innovation using big data and machine learning while creating an enabling environment in the form of regulations and infrastructure support.

Additionally, the firm must establish a policy for the development of big data technology into a more precise and comprehensive life table. Big data policies will make it possible for this firm to analyse client traits, routines, and preferences, and so significantly enhance customer service.

Limitations and suggestions for future research

The study is a case of an insurance company in Ghana. Thus, the findings cannot be generalised. Future studies can survey all insurance companies in Ghana to understand the use of big data in the insurance industry in Ghana.

Also, the study used just descriptive statistics to analyse the data, which is not robust, as inferences cannot be substantiated with this approach. Future studies can expand this and do a vigorous statistical analysis, such as regression or structural equation modelling, to unravel the detailed relationship between the constructs identified.

Again, the identified factors were derived from the literature without a theoretical framework. Future studies can develop a conceptual framework derived from a theoretical framework to provide a nuanced explanation of the phenomenon. Finally, future studies can also perform a mixed-method study to provide further insight into the phenomenon.

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Determinants of blockchain adoption intention, actual usage and SME performance: evidence from an extended UTAUT model

Abstract
We investigate the association among the determinants of blockchain adoption intentions (BAI), actual blockchain usage (ABU), and firm financial (FIN) and market (MKT) performance among small and medium size enterprises (SMEs) using an extended Unified Theory of Acceptance and Use of Technology (UTAUT) framework. Data were gathered from 527 SME managers in Ghana using an online survey and analyzed via smart partial least squares structural equation modeling (PLS – SEM). The results indicate that performance expectancy (PE), facilitating conditions (FC), social influence (SI), IT competency (ITC), organizational readiness (ORD), and top management commitment (TMC) significantly influence SMEs blockchain adoption intentions. However, effort expectancy (EE) had an insignificant relationship with SMEs' blockchain adoption intentions. Furthermore, BAI positively impacts ABU which in turn affects FIN and MKT performance. The proposed UTAUT model provides valuable information and guidance for SME managers and policymakers when they attempt to strategically align digital transformation with managerial practices for sustainable performance improvement. Our paper contributes to the growing body of knowledge on blockchain adoption and usage by incorporating SMEs context-specific constructs to understand and predict the determinants of BAI based on an extended UTAUT model. It perhaps represents the first to incorporate the original UTAUT variables to explore blockchain determinants intentions and actual usage among SMEs in the context of a developing economy.

Key words: Blockchain technology, UTAUT model, Market performance, Financial performance, SMEs.

Track 6 - Marketing

A study on adapting the consumer awareness scale to Arabic

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Abstract

Purpose: Builds on the concept of consumer awareness and its conceptualization and operationalization in previous studies, this study aims to translate, adapt, and assess the reliability and validity of Arabic version of the consumer awareness scale.

Study design/methodology/approach:

Sample and data: The study was conducted with a sample of 390 consumer from four Arab countries. The consumer awareness scale validity of was tested by exploratory factor analysis (EFA) and confirmatory factor analysis methods, using SPSS-20 and Amos-24.

Results: A five factorials structure of consumer awareness scale was obtained, as was proposed by previous studies. Our confirmatory factor analysis supported the acceptable level of validity and reliability of the consumer awareness scale with five factors in Arab countries.

Originality/value: This study is, to the best of the authors' knowledge, the first to adapt, translate and validate a consumer awareness scale in Arabic. The present study opens new and previously under-investigated interdisciplinary research streams, especially comparative studies among Arab countries.

Research limitations/implications: Future studies should examine its validity of the Arabic version among more diverse consumers in different Arabic-speaking countries, in order to compare the results and see whether these are generalizable.

Keywords: Consumer awareness scale; Arab countries; Online survey; Validity and Reliability; Multi-dimensionality.

Introduction

Numerous studies conducted in several countries have highlighted the importance of consumer awareness, showing that has a significant effect on different types of consumer behavioral contexts (McEachern and Warnaby, 2008; Dommeyer and Gross, 2009; Ishak and Zabil, 2012). However, to measure consumer awareness levels existing literature generally uses different types of measurement tools, and research is insufficient to provide an appropriate measure of consumer awareness concept. Few studies have directly investigated the conceptualization and operationalization of consumer awareness in different specific developing countries. (Dickinson and Shaver, 1982; Agbonifoh, 1986; Rousseau and Venter, 1992, 1993, 1995, 1996; Makanyeza and Du Toit, 2015).

In the past 50 years, the economic and social policies enacted in the Arab world has played a significant role in increasing penetration of the Western model, and changing progressively consumer culture in different Arab region. In order to make their economies more attractive to multinational, specific sectors and markets were deregulated and privatized in some Arab nations (Caccia et al., 2018). The social movements in Arab countries that began in 2010, have contributed spreading the existing consumerism in various countries. All These facets have leads to increased complexity of marketplace conditions and the emergence of potentially important factors driving multiple concerns amongst consumers.

Berger, Avi, Ram and Bradley (2015), argue that Arab countries seem largely being neglected by researchers in this specific area. A literature review on consumer buying behavior and marketing research in Arab countries reveal that limited numbers of studies have been conducted in consumer awareness. Review of existing research on the topic

showed that research devoted to the consumer awareness study generally falls into many different perspectives : consumer rights and protection (Morris and Al Dabbagh, 2004; Dahiyat, 2011; Alsmadi, 2012; Alsmadi and Khizindar, 2015; Alsmadi and Alnawas, 2019); Consumer behavior and unfair marketing (Alsmadi, 2004) and deceptive marketing (Al-Zyadat, 2017); governmental role for consumer awareness (AlGhafri, 2013; Alqarni, 2016); and socially responsible consumption (Alsmadi, 2004, 2012). However, the topic consumer awareness measurement has received little attention among consumer behavior and marketing researchers in Arab countries.

Many researchers have concluded that Arab consumers do not operate an acceptable level of consumer awareness (Al-Khatib, Vitell, Rexeisen, and Rawwas, 2005; Alsmadi, 2012; Alsmadi and Khizindar, 2015; Alqarni, 2016). In this context, it is imperative to have an accurate consumer awareness understanding in an Arab context.

The objectives of the study were, first, to provide some evidences to understand the consumer awareness as marketing issue, and second to introduce the concept in the Arab context using conceptualization and operationalization in previous studies. Third we test the reliability and validity of the Arabic version of the consumer awareness scale among a sample of Arab population.

Literature review

Consumer awareness as a marketing issue

In marketing and consumer behavior literature, numerous studies have attempted the meaning of the consumer awareness concept, and founded that it is a critical factor in the marketplace. Some studies have concluded that consumer awareness plays a major role in consumers' purchasing behavior process, and has a significant impact in various

consumption situations and contexts (Chartrand, 2005; Coulter, Price, Feick and Micu, 2005; Dommeyer and Gross 2003; Donoghue and De Klerk 2009; Ishak and Zabil, 2012; McEachern and Warnaby, 2008).

Some researcher, such as Coulter et al. (2005), investigated the central idea of "consumer knowledge" instead of "consumer awareness" which is a different concept measured by a different set of questions. From Ishak and Zabil (2012), consumer awareness is explained by the level of knowledge products.

From a consumer perspective, consumer awareness appeared have an impact on consumer knowledge and consumer effective behavior (Alsmadi, 2012). For example, according Rousseau and Venter (1995, p.18) consumer awareness can be defined as: "*the extent or alertness of individual consumers of their rights and responsibilities in the market place*". Makanyeza (2015) argues that consumer awareness is concerned with the rights and responsibilities of consumers as they engage in the exchange process at the marketplace.

Others researchers have examined the relationship between consumer awareness and Marketing Mix elements. For example, consumer awareness concept are substantive areas of research that have been extensively studied in pricing (Ahmetoglu, Furnham and Fagan, 2014), advertising (Aaker and Day, 1974; Barroso and Llobet, 2012), decision-making (Chartrand, 2005), persuasion knowledge (Ham, Nelson and Das, 2015) and complaining behavior literatures (Agbonifoh and Edoreh, 1986). Further, the consumer awareness is critical in the development of product knowledge, Markets segmentation, design marketing strategies, and Marketing performance Measurement (Makanyeza, 2015).

As noted above, a main supporting arguments for the raise of consumer awareness refers to combining multiple sources about elements of Marketing Mix, consumer Rights and

consumer's own responsibilities in the market place, and problems associated with marketing practices. Consumer awareness is therefore important in the marketplace so that every shopper can make the right decisions and make the right choices.

However, measuring consumer awareness on terms of elements of Marketing Mix, rights and responsibilities or other factors separately, may be can neither accurate nor relevant in predicting consumer behavior. To fill this gap, various initiatives have been developed and propose integrated conceptualization of consumer awareness construct and its measurement (Rousseau and Venter, 1995; Makanyeza and Du Toit, 2015).

Consumer awareness construct: definition and dimensions

Definition of consumer awareness

Despite its high relevance mentioned above, there is no established formal definition for consumer awareness concept. The concept varies most often in the literature, from one field of activity to another (Aaker et al., 1974; Dickinson and Shaver, 1982; Agbonifoh and Edoreh, 1986; Chartrand, 2005; Barroso and Llobet, 2012; Ahmetoglu et al., 2014; Ham et al., 2015).

In general, consumer awareness means that means that consumers knowing what they buying. In others, words consumers are aware of products or services and their characteristics. According Rousseau and Venter (1992, 1993, 1995), consumer awareness describes the extent to which customers are aware of their rights and responsibilities in the marketplace.

A fundamental base for the conceptualization of consumer awareness construct was developed initially by Rousseau (1991). Based on previous researches and theories (Engel and Blackwell, 1982; Aaker and Day, 1974), Rousseau (1991) developed a theoretical

model of consumer awareness. This model includes three major stages of the purchase process derived from literature. From this theoretical framework, the items for the measurement of the consumer awareness construct were formulated and tested in pilot study.

The final result of this pilot study, a 25-items instrument was extracted to measure the construct and its dimensions. Five dimensions were identified. The five dimensions are as follows: information search, bargain hunting, product knowledge, general consumer knowledge and price consciousness (Rousseau, 1991).

In fact, since 1991, several studies have been conducted in various developing countries (Rousseau and Venter, 1992, 1993, 1996; Makanyeza and Du Toit, 2015), demonstrating a valid and reliable five dimensional scale for measuring consumer awareness in different cultures.

Having defined and described the concept of consumer awareness and its relevance to consumer behavior research, we present its conceptualization and operationalization, as suggested by previous studies (Rousseau and Venter, 1995; Makanyeza and Du Toit (2015).

Consumer awareness scale measurement

Originally, Rousseau (1991) described criteria for assessing the level of consumer awareness in South Africa. The multidimensional construct was tested in Zimbabwe (Rousseau and Venter, 1995; Makanyeza and Du Toit, 2015). Following this originals research, it was found that different Socio-demographics factors influence consumer awareness such as age, education, religion, employment, marital status, income levels,

and geographic area. (Rousseau and Venter, 1992, 1993, 1996).

These previous studies have suggested that is a multidimensional construct based on five interrelated dimensions. The current research is based on a scale for consumer awareness developed by Rousseau and Venter (1992, 1993) and recently modified by Makanyeza and Du Toit (2015). The consumer awareness measurement has attracted considerable research interest, and these five dimensions have been considered necessary to measure consumer awareness, in which each dimension comprises five items (see also Table 1):

- Bargain hunting, measured by items CAWAR1-5.
- General consumer knowledge, measured by items CAWAR6-10.
- Product knowledge, measured by items CAWAR11-15.
- Information search, measured by items CAWAR16-20.
- Price consciousness, measured by items CAWAR21-25.

<INSERT TABLE 1.a ABOUT HERE>

Consumer awareness measurement scale in Arabs countries

With the acceleration of socio-economic processes of globalization, increasing consumer's awareness about basic consumer rights and quality and safety of the products, is nowadays crucial for effective consumer behavior in the marketplace, especially in developing countries (Rousseau and Venter, 1995; Consumer International

organization1, 2015, 2013).

Many studies attempted to test the psychometric properties of the consumer awareness scale in various contexts. According to Chaudhary, Suhail and Omar (2018) and Chaudhary, Omar and Suhail (2019), Arab region is still remains unexplored from consumer point of view.

The literature review reveal that marketing studies in the Arab region have seen increasing during the last two decades on consumer awareness and consumer's rights (Al-Ghamdi et al., 2007; Alsmadi, 2012; AlGhafri, 2013; Alsmadi and Khizindar, 2015; Alqarni, 2016). Those studies have conducted across diverse domain of consumer behavior, such as attitude and behavior toward marketing practices, consumerism, consumer rights, and government regulations, but there is no study about consumers' awareness measurement. However, there are remains significant gaps and unresolved issues in this literature, particularly in relation to consumer awareness scale measurement.

This study attempts to address this gap by translating and validating in Arabic context the original form of Consumer awareness measurement scale. The study evaluated the psychometric properties of the Arabic version with a sample from different Arab countries.

Methodology

Procedure

The original scale has been translated in Classical Arabic language to ensure the questions

[1] https://www.consumersinternational.org/

were properly understood by the Arabic respondents. Four translators independently performed (forward and backward translations), and then checked by 2 academic experts. Translated items was compared to original version by five independents academics and professionals from different Arabic countries (Tunisia, Syria, Egypt, Soudan and Saud Arabia). They found that no significant difference exists, and recommend minors corrections. Once we have completed the minors corrections were done, the Arab version was finalized (see table 2.b).

The final scale Arab version to measure consumer awareness was adopted with slight modifications from previous research (Rousseau and Venter, 1995, 1996; Makanyeza and Du Toit, 2015). Some modifications were made in order to adapt it to the environment of the current study (see table 2.a):

- Items CAWAR1 we add “other Media”
- Items CAWAR6 and CAWAR10 we use "In my country” to replace the country name,
- CAWAR8, we use "In my country” to replace the country name and add also "online and electronic sources"

<INSERT TABLE 2. ABOUT HERE>

Questionnaire and survey design

The final questionnaire used in this study was composed of two main sections. The first one included questions to gather information on participants’ socio-demographic characteristics. The second part of the questionnaire contained only consumer awareness

items. Item measurement was based on a five-point Likert scale. Given the significant geographical limitations for obtaining a sufficient number of participants, the empirical method of study was based on online questionnaire survey conducted in ten (10) different Arab countries (see figure 1). Participation in this study was solicited via email and social media because of the participants' geographic locations. Each respondent was contacted with a covering message providing the study background and inviting them to complete the online questionnaire. Data was collected between January and June 2019.

Finally, 465 questionnaires have been received from ten (10) Arab countries including Algeria, Egypt, Jordan, Morocco, Palestine, Syria, Saudi Arabia. Sudan, Tunisia and Yemen. Fifteen (15) questionnaires excluded those participants did not answer most of the questions. All countries that participant numbers are less than 30, are excluded in final database (60 for 6 countries excluded: Sudan, Egypt, Yemen, Palestine, Morocco and Jordan).

A total of 390 usable responses were analyzed. Table 3 shows the socio-demographic characteristics of the participants. More than half of the respondents (57.4%) were male, whereas females captured about (42.6%) of the total sample. A total of 44.4% of the participants had medium income levels.

<INSERT, TABLE 3>

The final sample respondents are originating from (4) Arab countries, including: Algeria (28.7%), Saudi Arabia (24.9%), Tunisia (25.4%) and Syria (21%). The data show that the public sector respondents have a higher proportion (51.8%) than the private sector (16.9%). The majority of participants (72.3%) were between 20 and 40 years old, and (14.9%) of the respondents were student. Table 4, and Table 5 shows respectively sample distribution by employment status and country.

<INSERT, TABLE 4 and TABLE 5 ABOUT HERE>

According to previous studies, the gender influences the response rates of online surveys (Saleh and Bista, 2017; Alalwan, Yogesh, Nripendra and Raed, 2018). Saleh and Bista (2017), conclude in their study that males were more likely than females to complete the online surveys, especially if they received reminder and the questions were short and precise.

Data analysis and results

The first research question was about the validity of the five-dimension consumer awareness scale. The exploratory factor analysis (EFA) was applied to assess psychometric properties of the consumer awareness scale. The confirmatory factor analysis (CFA) to verify the factor structure of our measurement instrument; and reliability analysis tests were applied to examine the goodness of fit of the scale latent construct. The analyses were done by the (SPSS) version 20 and (AMOS) software version 24.

Psychometric properties and factorial structure of the scale

The exploratory factor analysis (EFA) was applied to summarize data by extracting the most important dimensions.

The (EFA) was conducted with varimax rotation, factor loadings greater than 0.40, and the eigenvalue-greater-than-one-rule Byrne, 1998)

The appropriateness of data for EFA is assessed based on the Kaser-Mayer-Olkin (KMO) test and Bartlett's test of sphericity (Hair et al., 2014) and measure sampling adequacy

(MSA). As described by Kaiser (1974), KMO values “in the 0.90, marvellous; in the 0.80, meritorious; in the 0.70, middling; in the 0.60, mediocre; in the 0.50, miserable; below 0.50, unacceptable” (Cited by Watkins, 2018).

The results analysis confirmed that the data had satisfied the psychometric criteria for the EFA (See Table 6).

Initially, results of the EFA suggested six factors instead of five, as proposed by previous studies. Items CAWAR 10 and CAWAR 25 did not have enough substantial factor loadings on any of the factors. One of the items had low loading (CAWAR24) with a strong correlation with other factors, especially Product knowledge and Information Search factors. Thus, these three items were deleted and it resulted in the development of the scale, which consisted of 22 items. The result analysis performed for the answers to the 22 items produced a five-factor solution. However, two items which has low-loading (CAWAR2; CAWAR19). Moreover, these two were deleted again due to a strong correlations respectively with General consumer knowledge and Product knowledge dimensions. Consequently, we performed an EFA on the 20 items. EFA result with 20 items that represented five factors. EFA was run again with 19 items and five dimensions. After ignoring items loaded less than 0.4 (CAWAR1 and CAWAR15) and having strong correlation with other factors (CAWAR17; CAWAR11), the EFA result have yielded a five-factor solution and all the item loadings greater than 0.5.

As shown in Table (6), a structure of five factors of consumer awareness scale was found and given as follows:

- Factor 1: Bargain hunting: CAWAR 3, CAWAR 4, and CAWAR 5.
- Factor 2: General C. knowledge: CAWAR6, CAWAR 7, CAWAR 8, and CAWAR 9.
- Factor 3: Information Search: CAWAR 16, CAWAR 18, and CAWAR 20.

- Factor 4: Product knowledge: CAWAR 12, CAWAR 13, and CAWAR 14.
- Factor 5: Price consciousness: CAWAR 21, CAWAR 22 and CAWAR 23.

The five factors explained 61.20 % of the total variance. The results of the item loadings per factor, the eigenvalues and the variance that explains the percentages of the factors confirm the five-factor structure. Cronbach's alphas, communalities, means, standard deviation, factor loadings and item-total correlations are reported in Table 6.

According Hair et al. (2006), the Cronbach's Alpha coefficient (Nunnally, 1978) of 0.6 can be accepted, particularly when factors have only few items. For five factors, the values were found to be satisfactory, exceeding the accepted reliability threshold of 0.60. Only in one factor were the values were less than 0.60 (product knowledge=0.54). For the product knowledge construct, Cronbach's alpha is low. All individual items within each dimension average item-total correlations exceeded 0.40, indicating acceptable levels of internal consistency, except product knowledge items.

<INSERT, TABLE 6 ABOUT HERE>

Confirmatory factor analysis

After analyzing data and validating the five dimensions of the consumer awareness construct, in the next step the measurement model with its five factors will be assessed by using SPSS-Amos 24.

The first assessment should be any structural model that exists with an acceptable goodness of fit (Anderson and Garbing, 1988; Hair et al., 2006). The confirmatory factor analysis was performed to test the scale models and to purify the factors. To assess the

model fit of the Arab version of the scale across different Arab countries, we apply the maximum likelihood (ML) method.

Figure 1 presents the output path diagram for the measurement model of consumer awareness. Our results show that the estimates of the model fit was significant, all factors loadings) were higher than 0.4 (Field, 2009; Makanyeza and Du Toit, 2015), and significant with p-values less than 0.001. Table 7 summarize the model goodness-of-fit indicators in figure 1. Also, results indicated that the five-factor model as the best fitting model (Figure 1).

<INSERT FIGURE 1 ABOUT HERE>

There are many Fit Indices commonly reported for AMOS and SEM to evaluate suitability of model according to CFA results. The reporting of fit indices used and the findings of the structural model analysis are presented in Table 7. We conclude that the model has acceptable fit.

<INSERT TABLE 7 ABOUT HERE>

Convergent and discriminant validity

Construct validation procedure is based on convergent and discriminant validity. Convergent validity can be demonstrated when that all confirmatory factor loadings exceeded 0.5 and the Average Variance Extracted (AVE) from of all constructs should be at least 0.50 (Hair, Ringle and Sarstedt, 2011).

Lam (2012), suggests that the minimal value of 0.4 can be accepted, particularly when the composite reliability is well above the recommended level (0.60). According to the

author, the author, we can therefore conclude that the convergent validity of the construct is adequate. The convergent validity of Product Knowledge dimension is not assumed. The findings are reported in Table 8.

<INSERT TABLE 8 ABOUT HERE>

Discriminant validity test suggest that the square root of the (AVE) for each construct should be greater than the correlation between constructs on the diagonal (Fornell and Larker, 1981). Table 8 demonstrated adequate discriminant validity.

The results are shown in Table 9. According to MacCallum, Browne and Sugawara (1996)It can be seen that the : (a) the RMSEA is less than the critical value (0.052 < 0.08), (b) is within the 90 percent confidence interval, and (c) and the PCLOSE statistic is greater than the 0.05 (0.378 > 0.05). The results also show the SRMR (=0.05) is less than 0.08, indicate acceptable fit (Hu and Bentler, 1999).

<INSERT TABLE 9 ABOUT HERE>

The Path model for consumer awareness scale is provided by Figure 2. The estimates show that the model fit is significant. The standardized regression weights were higher than 0.4 (Field, 2009, Makanyeza and Du Toit, 2015) (see Figure 1).

<INSERT FIGURE 2 ABOUT HERE>

Correlations between latent variables were supported, except for five relations, as illustrated in Table 10.

<INSERT TABLE 10 ABOUT HERE>

Discussion, implications and recommendations

In this study, we aimed to evaluate the validity and reliability of the Arabic version of consumer awareness scale developed by Rousseau and Venter (1992, 1993).

An (EFA) was executed and five factor structure appeared as a result of several iterations. Of the 25 items used in the first PCA, 9 items were dropped from the original consumer awareness scale, due to low factor load and strong correlation with other factors. Thus, a five factorials structure was obtained, as was proposed by previous studies. These results confirm previous studies that reported five dimensions of consumer awareness scale.

Confirmatory factor analysis was performed in order to confirm the factorial structure of the Arab version. The Arabic version of consumer awareness scale confirm the factorial structure of the original scale (Rousseau and Venter 1992, 1993; Makanyeza and Du Toit, 2015), which comprised five factors.

As mentioned above, very few works has been done on Arab consumer awareness. The current study is the first of its kind to adapt and validate a consumer awareness scale measurement in Arab context. However, due the large number of items dropped in our study and the five-factor structure with 14 items, some explanations need to be provided. A first plausible explanation is that our results may have been influenced by the respondents' perceptions. This study was conducted on a specific sample (only online participants), which means that the representativeness of the sample could be an issue.

Some socio-economic explanations must also be available to explain our results. According to many researches (Donoghue and De Klerk, 2009; Pentz, Terblanche and

Boshoff, 2014; Makanyeza and Du Toit, 2015), the factorials structures for this construct is subject to the environment changes. Some authors have emphasized that the pre-existing scales may be use, and can be influenced by, the political and economic context of each study (Donoghue and De Klerk, 2009; Pentz et al., 2014; Rousseau and Venter, 1996).

Despite the fact that the items used to develop our questionnaire have emerged from the literature, it is important to be aware that the scale of consumer awareness was developed in the nineties. Since this date, conditions in society have changed; new social, economic and technological needs have emerged in different countries. Nowadays, consumers tend to be more engaged in more information search due the technology development (Makanyeza and Du Toit, 2015; Maity, Dass and Kumar, 2018). There is a need to adapt existing scale to fit in to the new environment (Makanyeza and Du Toit, 2015).

Rousseau and Venter (1992) indicate through no specific research has been done or has provided evidences about direct relationship between price consciousness and consumer awareness. However, authors underline that several research show that price consciousness is influenced by income and gender (Rousseau, 1991). Accordingly, these studies, thus seems as though low middle income consumers and women (especially housewives) are most price conscious (Rousseau and Venter, 1992). In their study, Urbany and Dickson (1991) conclude that consumers in the United States consistently display poor knowledge of grocery prices over times.

The findings of these studies suggest that price consciousness could result from financial constraints rather than price knowledge. Accordingly, the plausible explanation is that price consciousness were influenced by socio-demographic characteristics and environmental factors.

Limitations and future directions

This research has certain limitations in its findings and therefore there is a scope for further investigations.

The first limit is directly related to sample homogeneity, as the majority were highly educated people who have access to online surveys, urban residents, and working in public sector with high and middle income. In fact, our study we cannot ensure that our sample it was a representative of the Arabian population in different countries. Geographic dispersion of the target population and limited resources poses challenges to obtaining a representative sample.

Secondly, the quantitative research method based on an online questionnaire has been employed in order to test the consumer awareness construct in Arab context. The final questionnaire of our study was the result of an adaptation of the original instrument. The survey was web-developed and distributed on-line. This questionnaire was self-administered and the answers were obtained from a convenience sample, based on mailing list and different contacts list (personal and professional) on a major active social networking.

As such, there is a need to review the questionnaire construction and data collection processes in order to obtain an appropriate scale for measuring Arab consumer's awareness, suggesting the necessity for a new approach to redesigning our self-reported questionnaire and data collection methods.

To review the process of questionnaire construction, different approaches can be implemented. For example, after the translation from English to Arabic, focus group-interview can be conducted to facilitate the development of items. Additionally, other academics and potential Arab respondents should be integrated in the item-development and revision phase with the aim of achieving credibility across different populations (face

validation of the consumer awareness questionnaire). After that, questionnaire translated can be submitted to an expert committee before the pilot study.

Finally, the sample size (n=390 for four countries) of the present study is insufficient to generalize the results. The use of a representative sample of the population is highly recommended because it could lead to more accurate results. In this regard, the authors propose to increase the sample size and to extend the investigation to other consumers' categories and groups in different Arab cities and regions. Future testing for the Arabic version of the consumer awareness scale needs to be carried in each Arab country in order to compare results and whether these are generalizable.

However, the adaptation of questionnaire to use in the Arab world that consists of the 22 Arabic dialects need time consuming and costly. Moreover, coordinating all processes before implementing any study between different Arab countries can make it difficult to complete the task. Based on our experience we would recommend in future research, firstly to focus the survey design on one Arab country.

Conclusion

Despite these limitations, the present study provides theoretical contributions and indicates a promising direction for further investigations. Regarding the theoretical contribution, the results were in concordance with other studies and confirm the multi-dimensionality of the concept in different social contexts. The results confirm to a large extent the results presented in earlier publications, that major political and economic factors are likely to influence how consumer awareness is measured (Makanyeza and Du Toit, 2015). Our results also confirm previous recommendations as presented by some researchers, which suggest using with extreme caution scales developed in other environments (Pentz et al., 2014).

Hence, it is recommended, therefore, for further investigation by developing a measuring multi-dimensional instrument adapted to each context. Researchers should also be able to develop the potential consumers' awareness level profile based on different environmental backgrounds.

Future studies will focus more on developing appropriate tools through which consumer awareness will be measured as well as evaluate the impact of various factors across different Arab countries. Also, we advise to replicate and provides liable insights about the consumer awareness scale dimensions with relative stability among different regions in order to develop a Consumer Awareness Index (CAI) (Pradhan et al., 2018). We think that the limitation of the present investigation justifies future investigations with representative sample size and adequate conditions for data collection.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Table 1. Original consumer awareness measurement scale items (Makanyeza and Du Toit, 2015)

Dimension	Items
Bargain hunting	I check the newspaper each week for bargains.
	When I see a "special" advertised on TV or radio I always follow it up.
	I always shop at more than one store to compare prices and take advantage of the lowest-priced item.
	I like searching for bargains at seasonal sales auctions.
	I always try to obtain the best deal.
General consumer knowledge	Consumers in (country name) are not aware of their legitimate rights when it comes to doing business or engages in shopping.
	More attention should be paid to consumer awareness programs in school education.
	Too few consumers in (country name) read consumer articles in newspapers and magazines.
	In my country, consumers are not aware of the laws available to protect their consumer rights.
	Consumer organizations in (country name) deserve better support from consumers.
Product knowledge	Checking expiring dates on perishable food items is essential for ensuring fresh produce.
	I always look for a guarantee of expensive products before deciding on the purchase.
	It is important to share product information with friends and relatives.
	Product knowledge is one's best guardian against exploitation.
	I keep a watch on the media for new products and services that may be useful to me.
Information search	I always consult brochures and pamphlets for information before buying durable goods.
	Seeking information from relatives prior to make a final choice is always a good idea.
	Sales staff can be an important source of product information.
	Before purchasing a particular product I usually compare various brands to choose the best.
	I usually read newspaper advertisements for obtaining product information prior to purchase.
Price consciousness	Choosing 'no-name brands' is a good way to beat inflation.
	Price is the most important factor for me in choosing an item.
	When a product is offered at a discount price I am more tempted to buy it.
	Before deciding where to go shopping, I usually try to find out whether any specials are being offered.
	I always compare prices of similar products on display in the store.

Table 2. Adaptation of consumer awareness measurement scale items

Dimension	Code	Items
Bargain hunting	CAWAR1	I check the newspaper and other media each week for bargains.
	CAWAR2	When I see a "special" advertised on TV or radio I always follow it up.
	CAWAR3	I always shop at more than one store to compare prices and take advantage of the lowest-priced item.
	CAWAR4	I like searching for bargains at seasonal sales auctions.
	CAWAR5	I always try to obtain the best deal.
General consumer knowledge	CAWAR6	Consumers in my country are not aware of their legitimate rights when it comes to doing business or engages in shopping.
	CAWAR7	More attention should be paid to consumer awareness programs in school education.
	CAWAR8	Too few consumers in my country read consumer articles in newspapers, magazines, online, and electronic sources.
	CAWAR9	In my country, consumers are not aware of the laws available to protect their consumer rights.
	CAWAR10	Consumer organizations in my country deserve better support from consumers.
Product knowledge	CAWAR11	Checking expiring dates on perishable food items is essential for ensuring fresh produce.
	CAWAR12	I always look for a guarantee of expensive products before deciding on the purchase.
	CAWAR13	It is important to share product information with friends and relatives.
	CAWAR14	Product knowledge is one's best guardian against exploitation.
	CAWAR15	I keep a watch on the media for new products and services that may be useful to me.
Information search	CAWAR16	I always consult brochures and pamphlets for information before buying durable goods.
	CAWAR17	Seeking information from relatives prior to make a final choice is always a good idea.
	CAWAR18	Sales staff can be an important source of product information.
	CAWAR19	Before purchasing a particular product I usually compare various brands to choose the best.
	CAWAR20	I usually read newspaper advertisements for obtaining product information prior to purchase.
Price consciousness	CAWAR21	Choosing 'no-name brands' is a good way to beat inflation.
	CAWAR22	Price is the most important factor for me in choosing an item.
	CAWAR23	When a product is offered at a discount price I am more tempted to buy it.
	CAWAR24	Before deciding where to go shopping, I usually try to find out whether any specials are being offered.
	CAWAR25	I always compare prices of similar products on display in the store.

Table 3. Socio-demographic information of the sample.

Age (years)	***n***	**%**	**Education**	***n***	**%**	**Income ($)**	***n***	**%**	**Gender**	***n***	**%**
+ 50	33	8,5	**Postgraduates**	202	51,8	**No salary**	82	21,0	**Female**	166	42,6
41–50	75	19,2	**Graduates**	154	39,5	**+1,000**	85	21,8	**Male**	224	57,4
31–40	151	38,7	**Undergraduates**	34	8,7	**500–1,000**	88	22,6			
20–30	131	33,6				**–500**	135	34,6			
Total	**390**	**100.0**		**390**	**100.0**		**390**	**100.0**		**390**	**100.0**

Table 4. Sample distribution by employment status.

	Frequency	**Percent**	**Cumulative Percent**
Public sector	202	51,8	51,8
Private sector	66	16,9	68,7
Entrepreneur	26	6,7	75,4
Unemployed	30	7,7	83,1
Student	58	14,9	97,9
Retired	8	2,1	**100,0**
Total	**390**	**100,0**	

Table 5. Sample distribution by country.

Country	**Frequency**	**Percent**	**Cumulative Percent**
Algeria	112	28,7	28,7
Saudi Arabia	97	24,9	53,6
Tunisia	99	25,4	79,0
Syria	82	21,0	**100,0**
Total	**390**	**100,0**	

Table 6. Results of exploratory analysis.

Dimension	Items	Cronbach's alpha	Communalities	Means	Standard deviation	Factor loadings	Item-total correlations
Bargain hunting	CAWAR 3	0.68	0,517	4,040	,981	0,689	0,447
	CAWAR 4		0,606	3,920	,900	0,752	0,490
	CAWAR 5		0,709	4,167	,805	0,814	0,567
General consumer knowledge	CAWAR 6	0.73	0,605	4,159	,821	0,770	0,535
	CAWAR 7		0.532	4.54	0.655	0.597	0.46
	CAWAR 8		0,543	4,074	,853	0,710	0,445
	CAWAR 9		0,685	4,231	,747	0,819	0,621
Product knowledge	CAWAR 12	0.54	0,431	4,159	,701	0,481	0,316
	CAWAR 13		0,605	4,133	,686	0,743	0,377
	CAWAR 14		0,707	3,682	,885	0,765	0,366
Information search	CAWAR 16	0.70	0.643	2,967	1,207	0.731	0.513
	CAWAR 18		0.685	3,556	,970	0.739	0.638
	CAWAR 20		0.637	2,882	1,042	0.763	0.476
Price consciousness	CAWAR 21	0.60	0.392	3.271	0.947	0.565	0.290
	CAWAR 22		0,654	3,005	1,196	0,798	0,493
	CAWAR 23		0,617	3,277	1,071	0,763	0,446
% of total variance explained							**61.20 %**
KMO							**0.744**
Bartlett's test of sphericity							**0.000**

Table 7. Model fit indices.

Name of category	Name of index	Level of acceptance	Makanyeza and Toit (2015)	Present study
Absolute fit index	Chi sq. Wheaton *et al.* (1977)	*p*>0.05 (Sensitive to sample size >200)	253.612	189.2
	RMSEA Browne and Cudeck (1993)	RMSEA<0.08 (Range 0.05 to 0.10 is acceptable)	n.d.	0.052
	GFI Joreskog and Sorbom (1984)	GFI>0.90 (GFI=0.95 is a good fit)	0.901	0.94
Incremental fit index	AGFI Tanaka and Huba (1985)	AGFI>0.90 (AGFI=0.95 is a good fit)	0.90	0.92
	CFI Bentler (1990)	CFI>0.90 (CFI=0.95 is a good fit)	0.916	0.92
	TLI Bentler and Bonett (1980)	TLI>0.90 (TLI=0.95 is a good fit)	n.d.	0.90
Parsimonious fit index	Chi sq./df Marsh and Hocevar (1985)	Chi sq./df<3.0 (A value less than 3.0 is considered good fit)	2.698	2.042 (df=93)

Note: n.d. = no data available.

Table 8. Composite reliability, AVE and Inter-construct correlation (N = 399)

	CR	AVE	MSV	ASV	Price Consciousness	Bargain Hunting	Information Search	General C. knowledge	Product Knowledge
Price Consciousness	0.65	0.40	0.10	0.06	**0.62**				
Bargain hunting	0.70	0.44	0.27	0.14	0.32	**0.66**			
Information Search	0.71	0.45	0.22	0.12	0.25	0.43	**0.67**		
General C. knowledge	0.74	0.42	0.13	0.04	0.09	0.06	-0.14	**0.65**	
Product Knowledge	0.53	0.28	0.27	0.17	0.24	0.52	0.47	0.36	**0.53**

Table 9. RMSEA and PCLOSE

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.052	.041	.062	.378
Independence model	.159	.151	.167	.000

Table 10. Correlations between dimensions of consumer awareness scale.

Correlations between factors			Estimate	C.R.	P	Label
Bargain hunting	<=>	Information Search	.196	4.944	***	Supported
Information Search	<=>	General consumer knowledge	-.061	-1.968	.049	No
Information Search	<=>	Price Consciousness	.157	2.982	.003	No
Information Search	<=>	Product Knowledge	.138	4.634	***	Supported
Bargain hunting	<=>	General consumer knowledge	.018	.869	.385	No
Bargain hunting	<=>	Price Consciousness	.134	3.407	***	Supported
Bargain hunting	<=>	Product Knowledge	.103	4.770	***	Supported
General consumer knowledge	<=>	Price Consciousness	.037	1.269	.204	No
General consumer knowledge	<=>	Product Knowledge	.070	3.963	***	Supported
Price Consciousness	<=>	Product Knowledge	.066	2.563	.010	No

Note: *** $p<0.001$.

Figure 1. The measurement model for consumer awareness

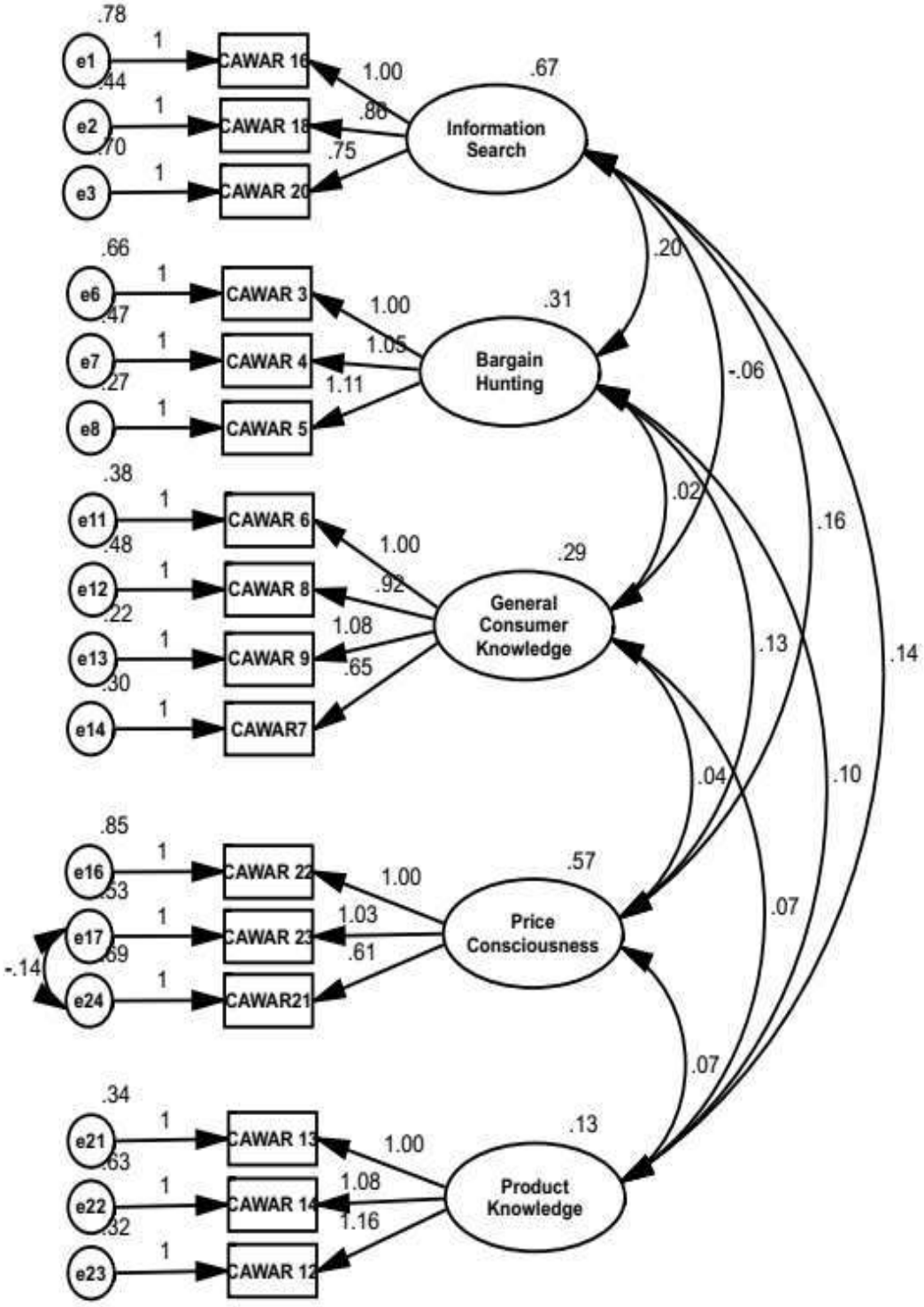
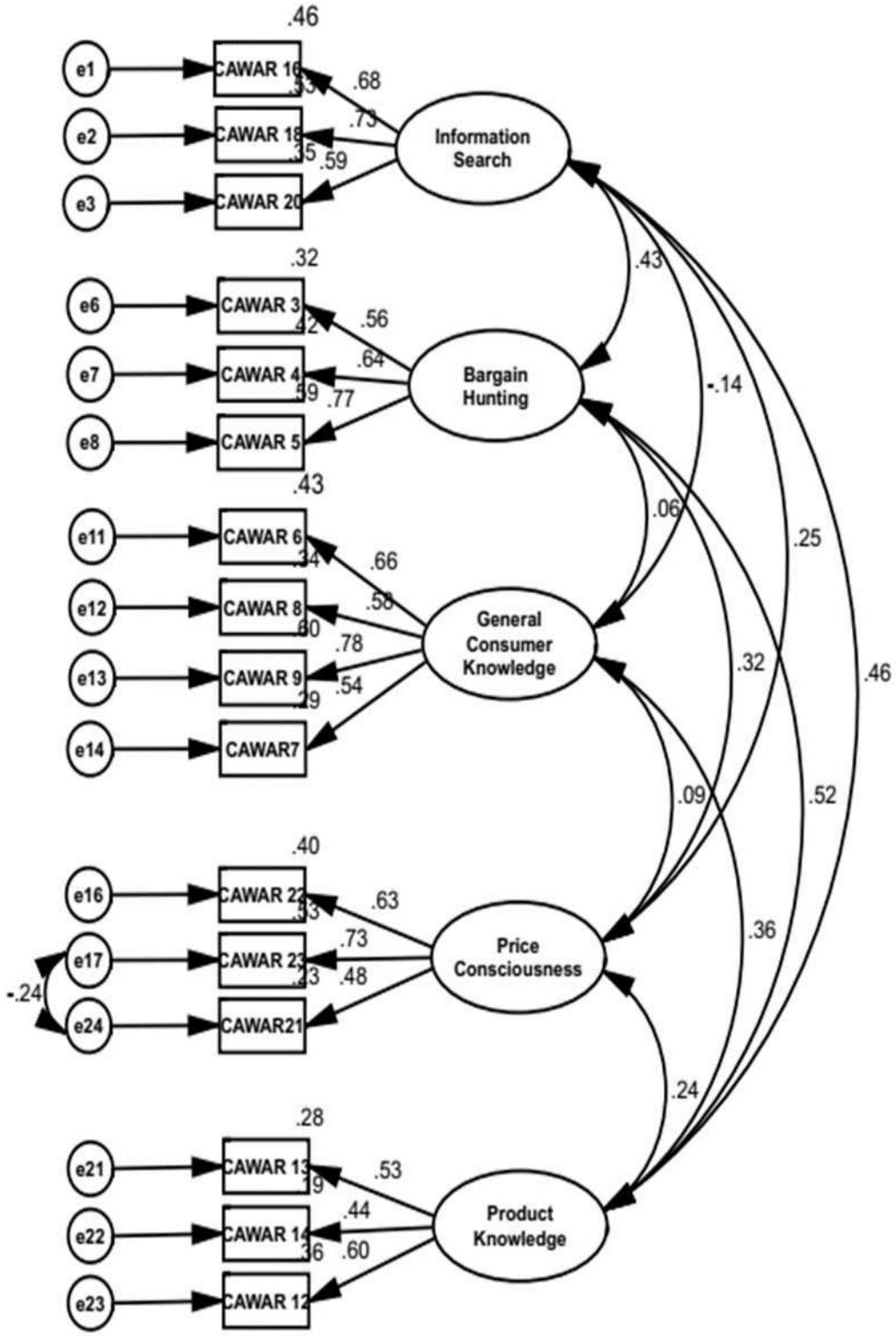


Figure 2. The Path model for consumer awareness scale



Beyond Awareness: A Value-Exchange Model of Hepatitis B Vaccination Adoption in Ghana

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Abstract

Despite the availability of an effective vaccine, the adoption of Hepatitis B (HB) preventive behaviours remains persistently low in many developing economies. In Ghana, HB interventions have primarily relied on awareness creation and health-related risk messaging, with limited attention to how individuals evaluate prevention as a behavioural offer within a value exchange. Drawing on social marketing's exchange logic and Consumer Value Theory (CVT), this study reconceptualises HB prevention as a value-based adoption decision, and integrates belief-based antecedents of preventive behaviour with multidimensional perceived consumer value to explain vaccination adoption. The study proposes that perceived vulnerability, severity, benefits, barriers, and self-efficacy will influence HB preventive behaviour. The study further argues that perceived consumer value, conceptualised as functional, emotional, and social value, will mediate the relationships between these belief-based factors and preventive behaviour. To test the proposed model, data will be collected from the youth in the Greater Accra Region of Ghana. Data will be analysed using structural equation modelling (SEM-AMOS). The study is expected to contribute to social marketing scholarship by demonstrating the explanatory power of value-exchange mechanisms in preventive health adoption in developing country contexts, with practical implications for segmentation, value-based positioning, and friction reduction strategies that strengthen the functional, emotional, and social value of vaccination.

Keywords: social marketing; consumer value theory; preventive behaviour adoption; value exchange; Hepatitis B; Ghana.

Introduction

Social marketing (SM) is fundamentally concerned with influencing voluntary behaviour through consumer orientation, segmentation, exchange, and integrated use of the marketing mix. However, in many developing contexts, preventive health programmes still rely heavily on awareness and threat-based campaigns, overlooking the consumer decision-making processes shaping adoption. This is surprising considering the fact that evidence from the SM

literature suggests that interventions that apply benchmark principles holistically (e.g., segmentation, exchange framing, and marketing mix integration) are more effective in influencing behaviour change compared to programmes that are limited to information provision (Sommariva et al., 2025; Gordon, 2013; Rothschild, 1999).

Preventive behaviours such as vaccination and screening can be analysed as consumer adoption choices, where individuals evaluate whether the behavioural offering delivers sufficient value relative to sacrifice (financial costs, time, inconvenience, discomfort, and stigma). Studies in marketing consistently emphasise that perceived customer value is a key determinant of behavioural intentions and outcomes (Blut et al., 2024). In the same vein, consumption value research confirms that functional, emotional, and social values drive consumer decisions, whereas perceived sacrifice tends to decrease adoption (Mason et al., 2023).

In vaccination contexts, emerging evidence also suggests that participating in preventive behaviours depends not only on perceived benefits but also on perceived barriers and individuals' confidence in their ability to take action (self-efficacy). For example, studies on Hepatitis B vaccination and related protective behaviours across sub-Saharan Africa identify perceived barriers, perceived benefits, and self-efficacy as key predictors of uptake (Tuuryare et al., 2025; White et al., 2025). These studies emphasise that adoption depends on how a person evaluates preventive behaviour under context-specific constraints, rather than on threat awareness only.

Despite this knowledge, there remains an empirical gap in explaining HB prevention as a consumer adoption decision that is driven by value exchange. Existing research works in developing countries have largely remained health-model driven (Zampetakis & Melas, 2021), with relatively little integration of CVT to explain how a person forms multidimensional value judgements that lead to preventive behaviour. Previous works have also rarely examined perceived consumer value as a mediating mechanism through which belief-based antecedents of perceived benefits, perceived vulnerability, perceived sacrifice (barriers), perceived severity, and self-efficacy influence adoption. Moreover, evidence on whether residential context (place of residence) leads to the translation of value perceptions into behaviour remains underdeveloped.

This study, therefore, reconceptualises HB prevention (vaccination) as a value-based adoption decision that integrates belief-based antecedents with CVT. Specifically, the study examines the relationships between perceived vulnerability, perceived benefits, perceived severity, perceived sacrifice, and self-efficacy, and preventive behaviour. The study further tests perceived consumer value (i.e, functional, emotional, and social) as a mediating mechanism.

Literature Review, Research Model, and Hypotheses Development

This study draws on belief-based drivers of preventive behaviour and extends them with consumer value logic to explain HB prevention behaviour. Although preventive behaviour studies mostly rely on health behaviour models, social marketing emphasises that voluntary behaviour change is shaped by exchange evaluations (Rothschild, 1999). That is, people are more likely to adopt a particular behaviour when they perceive the benefits of action to

outweigh its costs. This is particularly important in preventive settings where the benefits of action are often delayed, but the sacrifices are immediate (e.g, time, money, discomfort, and inconvenience).

Consumer value theory assumes that value judgments are multidimensional, commonly expressed as functional, emotional, and social value, and that these values together shape adoption decisions (Sheth, 1991). Building on this logic, this study argues that perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and self-efficacy influence HB vaccination. We also assume that perceived value mediates the effects of the belief-based factors on HB vaccination behaviour, such that individuals are more likely to vaccinate when the overall value they attach to vaccination outweighs the perceived costs/sacrifices.

Perceived Vulnerability and Preventive Behaviour Adoption

Perceived vulnerability (susceptibility) reflects whether consumers believe they are personally at risk (Kamboj et al., 2025) of a particular condition (e.g, HB), which increases the relevance of the offering and heightens attention to the exchange. Overall, findings regarding perceived susceptibility and preventive remains mixed. For instance, some studies found a significant positive relationship between perceived susceptibility and preventive behaviour (Rajamoorthy et al., 2018), while others report that susceptibility may be a weak or non-significant in predicting preventive behaviour (Carpenter, 2010). Considering that susceptibility captures perceived personal risk, which is expected to increase attention to the behavioural exchange and encourage protective decisions, this study expects that perceived susceptibility will positively influence preventive behaviour. Thus, the following hypothesis is formulated:

H1: Perceived vulnerability relates positively to HB preventive behaviour.

Perceived Severity and Preventive Behaviour Adoption

Perceived severity reflects the extent to which an individual's belief regarding how serious the consequences of an illness would be if contracted, including potential physical harm, complications, and broader life impacts (Tweneboah-Koduah, 2018). Within the HBM, greater perceived severity is theorised to increase the motivational force to engage in preventive actions because it raises the anticipated costs of not acting relative to acting. Numerous studies applying the HBM framework in vaccine contexts have demonstrated this association. For instance, Adiyoso et al. (2023) found that perceived severity was a significant predictor of COVID-19 vaccine intention in an Indonesian sample. Regarding HB, Nankya-Mutyoba et al. (2019) found that the perceived severity of HBV infection significantly influenced their decision to screen and vaccinate. Thus, the following hypothesis is formulated:

H2: Perceived severity of HB infection will have a positive influence on HB preventive behaviour.

Perceived Benefit and Preventive Behaviour Adoption

Perceived benefits refer to individuals' beliefs about the positive outcomes associated with performing a recommended behaviour (Rosenstock et al. 1988) Within HBM, benefit perceptions are theorised to increase the likelihood of action, particularly when a person judges

the expected gains of the preventive behaviour to outweigh its perceived costs (Carpenter). In the context of HB prevention, perceived benefits therefore capture the degree to which individuals believe vaccination will protect them from HBV infection and its related complications, providing reassurance and a greater sense of control over their health trajectory. Thus, HB vaccination is more likely to increase when individuals perceive the behaviour as beneficial and personally meaningful, particularly if they think the benefits outweigh the barriers.

This is consistent with the HBM, which posits that an individual will engage in health-seeking behaviour if they believe the offered services are valuable to them (Frank et al., 2014). Yazdanpanah et al. (2015) studied organic food consumption and found that perceived benefits were a key predictor of consumers' intentions to eat organic food. Within the preventive health context, research works have also established that the relationship between perceived benefits and preventive health behaviour is positive (Munuo & Masika, 2024; Tagbor et al., 2025). Thus, we expect that:

H3: Perceived benefits have a positive influence on HB preventive (vaccination) behaviour

Perceived Barriers and Preventive Behaviour Adoption

Evidence indicates that perceived benefits may be insufficient on their own to drive uptake when competing deterrents are salient. HBM discourse consistently shows that perceived barriers often exert stronger effects on preventive behaviours than perceived benefits (Janz & Becker, 1984; Carpenter, 2010). Abotchie and Shoker (2009), employed the Health Belief Model to explain cervical cancer screening intentions among college students in Ghana. They found that perceived barriers to screening had the most significant influence on screening behaviour.

In HB vaccination contexts, barriers such as concerns about side effects and perceived ineffectiveness, time constraints, and financial costs can suppress intentions and/or weaken the uptake pathway (Tagbor et al., 2025). Beyond individual beliefs, system and delivery constraints such as affordability, limited availability, and weak dissemination/communication also reduce uptake even where vaccination is viewed as valuable (Machmud et al., 2023), and broader evidence on HB vaccination barriers highlights fear of side effects, "vaccine confidence gaps," and poor provider communication/relationships as recurring impediments to coverage (Mohanty et al., 2020).

H4: Perceived barriers have a positive influence on HB preventive (vaccination) behaviour

Self-efficacy and Preventive Behaviour Adoption

Self-efficacy can be defined as the certainty that one can accomplish a behaviour to produce a desired outcome (Bandura & Wessels, 1994). In other words, it is the degree to which individuals feel they can take the vaccine. Previous research consistently shows that when individuals feel confident in their own ability to perform a recommended behaviour they show greater positive engagement in that behaviour (O'Leary, 1985). In particular, self-efficacy has

been shown to positively influence preventive behaviours (Zewdie et al., 2022). Champion and Skinner (2008) demonstrated that self-efficacy was a strong predictor of breast cancer screening behaviours. Similarly, Schwarzer and Luszczynska (2008) showed across multiple health behaviours that self-efficacy is positively influence vaccination uptake. Accordingly, this study expects that:

H5: Self-efficacy will have a positive influence on HB preventive behaviour

The Mediating Role of Perceived Values

While belief-based variables such as perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and self-efficacy explain why individuals recognise a health threat or feel motivated to act, they do not fully explain how these beliefs are translated into preventive behaviour. Social marketing and consumer behaviour theories suggest that this translation occurs through individuals' evaluation of the value of the recommended action. In particular, perceived value reflects an individual's overall assessment of the utility of a behaviour based on a comparison of perceived benefits and perceived sacrifices (Zeithaml et al., 2020). From an exchange perspective, preventive behaviours require individuals to incur immediate costs (e.g., time, money, inconvenience, discomfort) in exchange for benefits that are often delayed or uncertain.

Social marketing, therefore, emphasises that behaviour change is more likely when individuals perceive that the value of the exchange is favourable (Rothschild, 1999), a position that is reinforced by recent evidence showing that value-based framing and friction reduction are vital for voluntary behaviour adoption in health and sustainability contexts (Blut et al., 2024). Building on consumer value theory, perceived value is conceptualised as multidimensional, encompassing functional, emotional, and social value (Sheth et al., 1991). Consumption value literature suggests that when value dimensions are integrated together in a study, they drive adoption decisions (Mason et al., 2023). In this study, belief-based variables are theorised to act as antecedents to these value dimensions, which in turn shape preventive behaviour.

It is important to mention here that functional value and perceived benefits are conceptually distinct. Perceived benefits capture a belief-based judgment about whether vaccination will produce desirable outcomes. Functional value, on the other hand, reflects a broader utilitarian evaluation of the behavioural offering as a practical solution that integrates outcome expectations with performance-related considerations such as usefulness and convenience. Thus, a person may feel that vaccination is beneficial yet still perceive low functional value when adoption entails substantial sacrifices, such as time, costs, or procedural inconvenience. To this end, perceived benefits are treated as antecedent beliefs, whereas functional value represents higher-order exchange evaluation that can transmit belief effects into preventive behaviour.

Functional value refers to the extent to which individuals perceive a preventive behaviour to be effective, useful, and practically beneficial (Sweeney & Soutar, 2001). Belief-based variables are expected to shape preventive behaviour, in part, by influencing these

functional evaluations. For instance, higher perceived susceptibility and severity increase the perceived instrumental importance of prevention by highlighting the tangible consequences of non-action, thereby strengthening beliefs that vaccination is a necessary and effective means of protection (Leroi-Werelds & Matthes, 2022).

Similarly, strong perceptions of benefits and high self-efficacy enhance functional value by reinforcing beliefs that vaccination will work and that the individual is capable of successfully completing the behaviour. In contrast, perceived barriers (e.g., cost, inconvenience, access difficulties) undermine functional value by increasing the perceived sacrifices associated with the behaviour, thereby reducing its overall utility (Willems et al., 2016). Through these mechanisms, belief-based variables influence whether individuals perceive vaccination as a worthwhile and effective solution to a health threat. Accordingly, functional value is expected to mediate the relationships between perceived susceptibility, severity, benefits, barriers, and self-efficacy and preventive behaviour.

> *H6(a-e): Functional value mediates the relationships between (a) perceived susceptibility and preventive behaviour, (b) severity and preventive behaviour, (c) benefits and preventive behaviour, (d) barriers and preventive behaviour, and (e) self-efficacy and preventive behaviour.*

Emotional value captures the affective outcomes associated with engaging in preventive behaviour, such as peace of mind, reduced anxiety, reassurance, and a sense of control over one's health. In consumer behaviour research, emotional value reflects the degree to which an action or offering generates sensitive positive affective states and alleviates negative emotions such as fear, stress, or uncertainty (Holbrook, 1999). Belief-based variables are expected to influence preventive behaviour by shaping these emotional evaluations. When individuals perceive themselves as susceptible to a serious condition, the emotional costs of inaction, such as fear, worry, or anticipated regret, become more salient.

Prior studies show that threat perceptions increase the emotional appeal of protective actions that promise reassurance and anxiety reduction. Similarly, strong benefit perceptions and high self-efficacy enhance emotional value by promoting confidence, reassurance, and reduced uncertainty regarding outcomes. Evidence suggests that confidence in one's ability to act and belief in positive outcomes enhance emotional perceptions, which in turn increase behavioural engagement (Hur et al., 2015).

Conversely, perceived barriers may diminish emotional value by generating stress, frustration, or anticipated discomfort associated with engaging in the behaviour (e.g, Wang et al., 2017). Thus, emotional value serves as a key mechanism through which cognitive health beliefs are translated into affective motivations that support preventive behaviour. Preventive actions are therefore more likely when individuals believe that vaccination will not only protect their health but also provide emotional relief and psychological comfort.

> *H7(a-e): emotional value mediates the relationships between (a) perceived susceptibility and preventive behaviour, (b) severity and preventive behaviour, (c) benefits and preventive behaviour, (d) barriers and preventive behaviour, and (e) self-efficacy and preventive behaviour.*

Social value reflects the extent to which engaging in preventive behaviour enhances an individual's social self-concept, social approval, or sense of responsibility toward others. It captures the perceived social utility of an action that is derived from its ability to reinforce social identity, conformity with group norms, and approval from salient reference groups (Sheth et al., 1991; White et al., 2019). Belief-based variables are therefore expected to influence preventive behaviour by shaping how vaccination is socially interpreted and evaluated. For example, perceptions of susceptibility and severity may increase awareness of the social consequences of illness transmission, thereby enhancing the perceived social value of preventive action. According to Bavel et al. (2020), when individuals recognise the potential harm their inaction may cause to others, behaviours that reduce collective risk are more likely to be seen as socially responsible and appropriate. Consequently, perceptions of benefits and self-efficacy may reinforce beliefs that vaccination aligns with socially approved conduct and normative expectations within one's reference groups, particularly in settings where preventive behaviour is framed as contributing to community well-being.

In contrast, perceived barriers may reduce social value by signalling inconvenience, stigma, or misalignment with social norms, thereby weakening the social rewards associated with vaccination (e.g., Betsch et al., 2015). Through these processes, belief-based variables shape whether preventive behaviour is socially valued, responsible, and normatively appropriate. As such, social value is expected to mediate the influence of health beliefs on the adoption of preventive behaviour.

H8(a-e): social value mediates the relationships between (a) perceived susceptibility and preventive behaviour, (b) severity and preventive behaviour, (c) benefits and preventive behaviour, (d) barriers and preventive behaviour, and (e) self-efficacy and preventive behaviour.

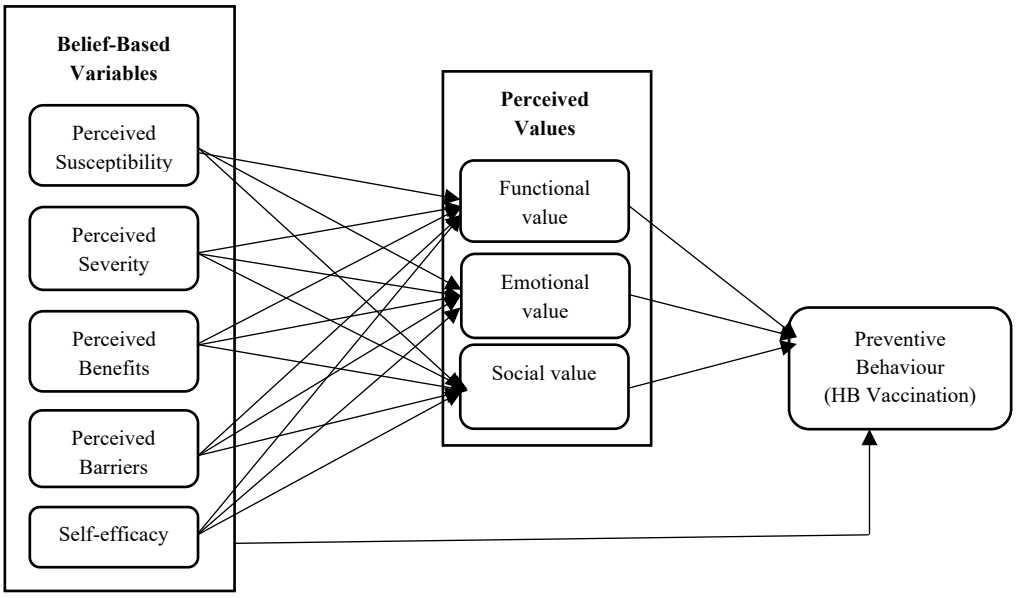


Figure 1. Conceptual Model

The model in Figure 1 argues that the belief-based variables (susceptibility, severity, benefits, barriers, and self-efficacy) will have a positive direct relationship with preventive behaviour. It also postulates that perceived value dimensions of functional, emotional, and social value mediate the relationships between the belief-based variables and preventive behaviour.

Methodology

This study adopts a quantitative cross-sectional survey design to examine the proposed relationships between belief-based variables, perceived consumer value, and Hepatitis B (HB) preventive behaviour among youth in Ghana. A quantitative approach is appropriate because the study seeks to test hypothesised relationships among multiple latent constructs and to assess the mediating roles of functional, emotional, and social value within the proposed conceptual model. The study will be conducted in the Greater Accra Region of Ghana, and the target population will comprise youth within the region. Given the nature of the research problem, the study will employ a purposive and convenience sampling approach. First, purposive sampling will be used to identify respondents who satisfy the inclusion criteria, namely young people residing in the Greater Accra Region and capable of providing informed responses regarding HB vaccination-related beliefs, value perceptions, and behavioural tendencies. Thereafter, convenience sampling will be used to administer the questionnaire to accessible respondents in selected locations within the study area. This sampling approach is appropriate because the study focuses on a specific category of respondents, while a complete sampling frame of all eligible youth in the region may not be readily available. Although this approach supports efficient access to relevant respondents, it may also limit the broader generalisability of the findings.

Data will be collected through a structured self-administered questionnaire. The instrument will be organised into sections covering respondents' background characteristics and the key constructs in the study, namely perceived vulnerability, perceived severity, perceived benefits, perceived barriers, self-efficacy, functional value, emotional value, social value, and HB preventive behaviour. Consistent with the conceptual model, the belief-based variables will serve as the independent constructs, the three perceived value dimensions will function as mediators, and HB preventive behaviour will represent the outcome variable. The questionnaire items will be adapted from established scales in prior literature and reworded where necessary to suit the HB vaccination context in Ghana. All measurement items will be assessed using a seven-point Likert scale ranging from 1 = strongly disagree to 7 = strongly agree, as this format provides sufficient sensitivity to capture differences in respondents' beliefs, evaluations, and behavioural responses.

Before the main data collection, the questionnaire will be pre-tested with a small group of respondents drawn from the target population in order to assess item clarity, wording, and contextual relevance. Feedback from the pre-test will be used to refine the instrument and improve its face and content validity. Following this, the main survey will be administered to eligible respondents across selected locations in the Greater Accra Region. Participation will be entirely voluntary, and respondents will be informed that the study is strictly for academic purposes. They will also be assured of anonymity, confidentiality, and their right to withdraw

from the study at any stage. The data will be analysed using Structural Equation Modelling (SEM) with AMOS.

Conclusions

This study contributes to social marketing and preventive health scholarship by moving beyond awareness-driven explanations of Hepatitis B vaccination and positioning adoption as a value-exchange decision. By integrating belief-based variables with functional, emotional, and social value, the model explains not only whether individuals recognise HB risk, but also how those beliefs may be translated into vaccination through multidimensional value evaluations. Although the model is deliberately broad, the empirical analysis will prioritise parsimony and diagnostic testing to address possible multicollinearity, overfitting, and convergence concerns.

The expected implications are twofold: Theoretically, the study extends consumer value logic into preventive behaviour adoption in a developing-country context. Practically, it will offer guidance for designing vaccination strategies that reduce friction and strengthen the functional, emotional, and social value of HB prevention among target populations in Ghana.

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AABD CONFERENCE

Constructing Loyal Outfit Customers through Social Media Marketing in Tanzania

Abstract

Social media has become a dominant space where outfit retailers and consumers in Tanzania meet, interact and co-create brand experiences, making it a critical arena for building and sustaining customer loyalty. This study investigates how specific social media marketing activities construct loyal outfit customers in Tanzania, using the Theory of Planned Behavior (TPB) to predict how customers behave after being exposed to these activities. Grounded in TPB, the research conceptualizes entertainment, interaction, electronic word of mouth (eWOM), trendiness and customization as marketing stimuli that shape customers' attitudes, subjective norms and perceived behavioral control, which then influence intentions and repeat purchase behavior toward outfit retailers. An explanatory cross-sectional survey design was employed, drawing on data from 150 followers of outfit retail enterprises on social media platforms in Dar es Salaam, collected through structured questionnaires and analyzed using descriptive statistics and multiple regression. The findings show that while entertainment, interaction and customization significantly enhance customer satisfaction, they do not exert a statistically significant direct effect on brand loyalty. In contrast, eWOM and trendiness demonstrate significant positive effects on brand loyalty, underscoring their central role in strengthening customers' intentions to repurchase and remain committed to preferred outfit brands. The study contributes empirically by clarifying which social media marketing elements most effectively construct loyal outfit customers and practically by recommending that Tanzanian outfit retailers prioritize strategies that stimulate positive eWOM and maintain high levels of trendiness in their social media content.

Key words: Loyal outfit customers, social media marketing, Tanzania

Introduction

Social media has become an increasingly important space for business activity in Tanzania. With approximately 7,950,000 active users about 10% of the population and a growth rate of 19.5% between 2024 and 2025, its potential continues to expand, much like in other African countries (Google.com, 2026; DataReportal, 2026). This growth has positioned social media as a key driver in shifting marketing strategies from traditional approaches to digital platforms, enabling businesses to communicate more efficiently and present their offerings to a large and diverse audience (Kishimbo et al., 2025; Siraj et al., 2021).

Platforms such as Facebook, Instagram, YouTube, TikTok, and WhatsApp have become essential spaces where businesses can establish their presence, shape their brand identity, and connect with audiences. Through these platforms, firms project their desired brand personalities, engage users, and expand their customer base (Feitas et al., 2023; Jamil et al., 2022; Goffman, 2015; Turkle, 1997). As a result, social media has evolved into a powerful tool for building and maintaining customer loyalty.

This ability to cultivate loyal customers is largely driven by the interactive nature of social media. Businesses and individuals actively participate in these platforms as part of their daily lives, creating continuous interaction between consumers and marketers (Liu et al., 2015; Choi et al., 2014; Kaplan, 1986). Such interactions provide marketers with valuable insights into consumer behavior, as they can observe how audiences respond to different forms of communication and content (Choi et al., 2014). This, in turn, allows businesses to design more relevant and innovative marketing messages that align with customer expectations (Liu et al., 2015; Yee et al., 2022).

Despite these advantages, businesses still face several challenges in fully leveraging social media. Many struggle to design marketing activities that effectively attract, engage, and retain customers, ultimately limiting their ability to build loyalty (Barger et al., 2016). One key issue is the lack of clarity on how to engage consumers effectively through social media (IBM, 2014; Elliott, 2014). This uncertainty is partly due to the relatively recent emergence of social media marketing, leaving many firms unsure about how to attract, track, and retain loyal customers (Barger & Labrecque, 2013; Schivinski et al., 2016).

Additionally, the diversity of platforms and content formats has made social media a highly fragmented environment, making it difficult for companies to coordinate and measure their marketing efforts (King et al., 2014; Straker et al., 2015). At the same time, the saturation of content across platforms increases cognitive pressure on consumers, leading them to ignore or selectively engage with content (IBM, 2014). Furthermore, the tendency of marketers to focus on short-term sales promotions through social media can negatively impact long-term brand equity (Schultz & Block, 2014).

This study addresses these challenges by identifying key elements that enterprises can use to design effective social media marketing programs, particularly through advertising, to build customer loyalty in the outfit sector. A loyal customer is defined

as one who is committed to repeatedly purchasing a preferred product or service over time, despite external influences that may encourage switching behavior (Oliver, 1999).

The outfit sector is one of the fastest-growing and most profitable industries, driven by increasing demand for both modern fashion and traditional attire. Women are generally the primary consumers, often seeking clothing that aligns with current trends. In Tanzania, many outfit businesses operate online, targeting both local and international markets. Dar es Salaam, in particular, stands out due to its strong market presence, high social media usage, and favorable local context.

Many outfit enterprises use social media to communicate directly and interactively with customers, aiming to expand their networks and build lasting relationships. Key social media marketing activities include entertainment, interaction, and word of mouth (Kim & Ko, 2012). These activities help align business objectives with the goal of establishing and maintaining strong customer relationships and brand loyalty (Feitas et al., 2023; Hajjid et al., 2022; Lina, 2022). Loyal customers, in turn, often act as advocates, connecting their preferred brands with their social networks and attracting new clients (Jamil et al., 2022).

Although social media marketing is widely recognized as an effective tool for influencing purchasing behavior, it still presents challenges for marketers. Given its critical role in brand building and relationship management, businesses must carefully consider both its opportunities and limitations. In particular, they need to focus on activities that significantly enhance brand equity and customer loyalty. Currently, about 70% of firms, including small and medium enterprises, rely on social media marketing to attract and retain customers (Yang et al., 2022; Lawal & Adejuwon, 2022).

Previous studies have examined the role of social media marketing across various contexts, including its influence on purchase decisions (Sharif, 2022), retail business growth (Mollel & Rwabishugi, 2021), enterprise development (Mshana, 2020), business performance (Kishimbo et al., 2025), and customer equity (Kim & Ko, 2011). These studies highlight factors such as media content, influencer attributes, and word of mouth as key drivers that attract consumers to online shops, influence their purchasing decisions, and encourage loyalty. This study uses the theory of planned behavior and provides strategic insight to enterprises in Tanzania's setting.

The impact of social media marketing activities on customer loyalty in the outfit retail sector remains an important area of study. Interactive brand pages and other social media strategies can enhance communication between brands and consumers, leading to more positive brand perceptions (Yadav & Rahman, 2018; Santini et al., 2020). Engagement through posts, comments, likes, and follows fosters interaction within online communities, which ultimately strengthens customer loyalty (Jai et al., 2022; Yang et al., 2022; Fagundes et al., 2023).

However, despite the growing importance of social media marketing, its effectiveness in building customer loyalty within Tanzania's outfit retail industry is not yet fully understood (Silvano & Mbogo, 2022). There is still limited empirical evidence on how these strategies influence loyalty in this specific context (Mehrabi et al., 2014). Therefore, this study aims to examine the influence of social media marketing on the development of loyal customers in the outfit sector. Specifically, it seeks to determine the extent to which entertainment, interaction, word of mouth, trendiness, and customization in social media influence customer loyalty in the outfit industry. The

study applies the Theory of Planned Behavior to predict customers' repeat purchasing behavior toward the same outfit enterprises.

Literature Review

The Theory of Planned Behavior

This study draws on the Theory of Planned Behavior (TPB), developed by Ajzen (1980, 1988, 1991), to explain how individuals' attitudes influence their behavior. The theory posits that behavior is directly shaped by an individual's intention to perform it, as well as their perceived behavioral control. In turn, intention is influenced by three key factors: attitude toward the behavior, subjective norms, and perceived behavioral control. Furthermore, TPB suggests that intentions can be altered by influencing any of these three determinants.

The theory is particularly relevant to this study due to its predictive nature. It provides a useful framework for understanding how social media users behave when exposed to different marketing activities. In this context, TPB is applied to predict how such exposure influences customers' engagement and loyalty toward business enterprises.

The relevance of TPB in this study is further reflected in its alignment with the key variables under investigation: interaction, word of mouth, customization, trendiness, and entertainment. Interaction refers to the dynamic communication between brands and consumers (Gnizy, 2019). Continuous engagement of this kind can shape consumers' attitudes toward marketing messages, which may lead to consistent engagement with a particular brand and, ultimately, loyalty. Entertainment involves incorporating enjoyable and engaging elements into marketing content (Seo & Park, 2018), which can attract attention and foster positive emotional connections with the brand.

Customization refers to a firm's ability to tailor its marketing content to match the preferences and needs of its audience (Liu et al., 2021). By aligning content with consumer expectations, businesses can strengthen emotional attachment and encourage loyalty. Trendiness reflects how well products or services align with current fashions or popular trends (Lal et al., 2020). Consumers often gravitate toward what is current and relevant, meaning that consistently promoting trendy offerings can enhance brand appeal and loyalty. Word of mouth, on the other hand, captures how consumers share and recommend brand experiences within their networks (Ibrahim et al., 2020). Positive shared experiences can strengthen identification with a brand and foster lasting loyalty. In line with TPB, these social media marketing activities can influence attitudes and intentions, ultimately contributing to customer loyalty.

Social Media Marketing Activities and Hypotheses

Social media marketing activities refer to the creation, communication, and delivery of marketing content through social media platforms (Lal et al., 2020). These activities are typically executed through advertisements and content tailored to cultural and social contexts, serving both branding and communication purposes while enabling firms to engage with potential customers and enhance stakeholder value (Rana, 2020; Islam et al., 2021). Kim and Ko (2012) identify five key dimensions of social media marketing activities: entertainment, interaction, word of mouth, trendiness, and customization.

Entertainment, a core dimension, involves incorporating enjoyable elements into brand content (Kim & Ko, 2012; Seo & Park, 2018). Modern marketing goes beyond simple product presentation by embedding entertainment to strengthen emotional connections with consumers. Research shows that entertainment significantly influences brand awareness, brand image, and brand loyalty (Bilgin, 2018). It also enhances positive emotions and purchase intentions (Mishra, 2019). By increasing engagement and satisfaction, entertainment-driven content can strengthen consumers' attachment to a brand (Rana, 2022).

H1: The entertainment content on social media platforms in the outfit retail industry positively influences customer brand loyalty.

Interaction represents the dynamic communication between businesses and consumers (Seo & Park, 2018). Social media enables efficient two-way communication, allowing consumers to better understand brand messages while giving firms insight into customer preferences. It also facilitates user-generated content and shared experiences, which enhance brand experience and satisfaction. Through ongoing interaction, businesses can build brand awareness, shape brand image, and strengthen customer loyalty (Alharthi et al., 2017; Moe & Schweidel, 2017; Gnizy, 2019).

H2: Interactive features on social media platforms in the outfit retail industry positively influence customer brand loyalty.

Word of mouth refers to consumer perceptions of how others share and recommend brand experiences (Ibrahim et al., 2020). On social media, consumers frequently exchange both positive and negative experiences (Kim & Lee, 2019). As a form of informal communication, word of mouth plays a key role in shaping purchase decisions by providing information about product performance and user experiences (Ismagilova et al., 2017; Wang & Yu, 2017). The credibility of these sources significantly affects their influence (Qonitah & Nuraeni, 2020). Strong and positive word of mouth can build trust, enhance satisfaction, and ultimately strengthen brand loyalty.

H3: Electronic word of mouth on social media platforms in the outfit retail industry positively influences customer brand loyalty.

Trendiness refers to the extent to which products or services align with current trends and consumer preferences. It plays a significant role in shaping consumer perceptions and behaviors. Although defining trendiness can be complex due to its evolving nature and dependence on factors such as design, color, and style (Gu, Zhao, & Zhao, 2018), it remains a critical element in marketing effectiveness. Studies show that trendiness can influence the success of marketing campaigns and shape brand image (Zhao et al., 2019; Lal et al., 2020). Brands that consistently align with current trends are more likely to maintain customer interest and loyalty.

H4: Trendy content on social media platforms in the outfit retail industry positively influences customer brand loyalty.

Customization refers to the ability of businesses to tailor marketing content, recommendations, and user experiences to individual consumer preferences (Liu et al., 2021). Personalized marketing enhances perceived relevance and strengthens the relationship between consumers and brands. It also contributes to value co-creation and brand authenticity (Parsons & Lepkowska-White, 2018). By delivering more relevant and meaningful experiences, customization can increase customer satisfaction and foster long-term loyalty (Beig & Khan, 2018).

H5: Customization on social media platforms in the outfit retail industry positively influences customer brand loyalty.

Methodology

This study employed an explanatory cross-sectional research design using a quantitative approach to formulate and test research hypotheses. The quantitative approach was chosen to examine general trends across individuals by focusing on numerical data, which allows for the application of scientific tests (Goundar, 2022). The main reason for adopting this approach was to generate measurable data that could be analyzed using statistical models.

The study was conducted in the Dar es Salaam region of Tanzania. This location was selected due to its strong market presence, high level of social media usage, and relevance to the study context. Dar es Salaam has a high concentration of businesses, including textile manufacturers and traders, making it particularly suitable for this research (Namusomba, 2017).

Respondents were selected from customers who follow at least one outfit retail enterprise on social media platforms. This choice was informed by the rapid growth of digital users in Tanzania, with a large proportion of the population actively using social media. As a result, respondents were likely to have relevant experience with social media marketing activities, making them appropriate for providing meaningful data (Yee et al., 2022).

A convenience sampling technique was used to select 150 customers from followers of outfit retail enterprises on social media. According to Rahman (2023), a commonly used guideline suggests that the sample size should be greater than or equal to 104+M, where M is the number of independent variables. With five independent variables in this study, the minimum acceptable sample size was 109. Additionally, when the population size is unknown, sample size can be determined based on margin of error and confidence level. A general rule of thumb recommends a minimum of 30 observations to ensure reasonable accuracy (Carpenter, 2021). To further reduce potential bias and improve reliability, a sample size of 150 respondents was considered appropriate.

Data were collected using a structured, self-administered questionnaire designed to gather primary data from customers in the outfit retail industry. The questionnaire was distributed through Google Forms after confirming that respondents followed at least one outfit retail brand on social media. The use of structured questionnaires helps reduce respondents' cognitive burden, leading to higher response rates and more reliable data (Kaur, 2019).

Operationalization and Measurement of Variables

The study adopted six indicators from previous research that examined the effect of social media marketing activities on customer loyalty (Kim & Ko, 2010; Thu & Phuong, 2021; Feitas et al., 2022; Feitas et al., 2023). It included five independent variables—entertainment, interaction, electronic word of mouth, trendiness, and customization—and one dependent variable, brand loyalty. All variables were measured using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Data Analysis

Data collected from the questionnaires were analyzed using the Statistical Package for Social Sciences (SPSS) Version 26. Both descriptive statistics and multiple regression analysis were applied. Demographic characteristics of respondents were summarized using frequencies and percentages.

Descriptive analysis was also used to assess the extent to which respondents agreed or disagreed with statements related to outfit enterprises' social media presentations. Respondents' perceptions of entertainment, interaction, electronic word of mouth (eWOM), trendiness, and customization were measured using a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) across 18 statements. Statements with higher frequencies and percentages were interpreted as those that better satisfied customers and had a greater likelihood of influencing brand loyalty.

Multiple regression analysis was conducted to examine the relationship between the independent variables and the dependent variable. The R2*R*2 value was used to assess the strength of the relationship and determine how much variation in the dependent variable was explained by the independent variables. As noted by Young (2017), multiple regression analysis enables the evaluation of relationships between variables, particularly in examining the influence of social media marketing activities on brand loyalty.

Results

Descriptive Respondent Statistics

The study included 150 participants, with more males (n=89, 59.3%) than females (n=61, 40.7%). Although females were slightly fewer in number, both genders were adequately represented, ensuring that the findings reflect the views of the target population. Furthermore, Mbura and Kayoga (2020) note that male users tend to engage more with social media marketing activities compared to female users.

Most respondents were aged between 20 and 30 years (n=122, 81.3%), followed by those aged 31 to 40 years (n=23, 15.3%). Respondents aged 41 to 50 years accounted for (n=3, 2%), while those below 20 and above 50 years each accounted for (n=1, 0.7%). These results suggest that individuals aged 20–40 are the most active users of social media marketing activities. This aligns with findings by Sharif (2022), which indicate that individuals aged 18 to 30 are the most active users of social media.

The majority of respondents (n=69, 46%) reported visiting their favorite outfit retail social media platforms multiple times a day, followed by those who visit more than once a week (n=39, 26%). Others reported visiting once a day (n=17, 11.4%), once a week (n=14, 9.3%), and less than once a week (n=11, 7.3%). These findings suggest that frequent visitors are more likely to engage with brand content, which may increase their level of interest and potentially strengthen brand loyalty.

In terms of platform usage, most respondents used Instagram (n=116, 77.3%), followed by WhatsApp (n=72, 48%), Facebook (n=69, 46%), TikTok (n=23, 15.3%), and Twitter (n=14, 9.3%). Pinterest, Snapchat, and YouTube were the least used platforms, with (n=3, 2%), (n=2, 1.3%), and (n=1, 0.7%) respectively.

Furthermore, the majority of respondents (n=100, 66.7%) had been following their favorite outfit retail social media platforms for 1–5 years. This was followed by those with less than one year of engagement (n=36, 24%), those with 6–10 years (n=12, 8%), and those with more than 10 years (n=2, 1.3%). These findings indicate that many respondents have had prolonged interaction with these platforms, which may have allowed them to develop a deeper understanding of the brands and potentially influenced their loyalty.

Descriptive Results Based on Specific Objectives

Entertainment

The study sought to assess respondents' satisfaction with the level of entertainment provided on their preferred social media platforms for clothing retail. This was measured by asking respondents to indicate their level of agreement or disagreement with a set of statements presented in Table 1.

Table 1: Distribution of respondents by extent of entertainment they get in their favourite Clothing retail social media platforms (n=150)

Statements	1*(%)	2*(%)	3*(%)	4*(%)	5*(%)
The social media platform(s) of my favorite outfit enterprise is enjoyable.	0.7	0.7	10.0	62.0	26.0
The content found on my favorite outfit retail enterprise's social media platform is interesting.	0.7	0.7	12.0	54.7	32.0
It is interesting to get product information on my favorite outfit enterprise social media platforms.	0.7	0.7	10.0	55.3	33.3

1=Strongly Disagree, **2***=Disagree, **3***= Neutral, **4***= Agree, **5***=Strongly Agree*
***Source:** Field data (2025)*

These results indicate that the majority of respondents (88%) find the social media platforms of their favorite clothing retail brands enjoyable. In addition, 86.7% reported that the content on these platforms is interesting, while 88.6% stated that they enjoy receiving product information through them. Overall, these findings suggest that the entertainment value offered by clothing retail SMEs on social media enhances customer satisfaction, which may, in turn, influence brand loyalty.

Interaction

The study also examined respondents' satisfaction with the level of interaction on their preferred social media platforms for clothing retail shopping. This was assessed by asking respondents to indicate their level of agreement or disagreement with statements presented in Table 2.

Table 2: Distribution of respondents by extent of interaction they get in their favourite Clothing retail social media platforms (n=150)

Statements	1*(%)	2*(%)	3*(%)	4*(%)	5*(%)
Information sharing is possible on my favourite Clothing retail brand's social media platform.	0.7	1.3	10.0	60.0	28.0
It is possible to have two-way interaction with administrators through my favourite Clothing retail brand's social media platform.	1.3	5.3	12.0	55.3	26.0
It is easy to convey my opinions or have conversations with other users through my favourite Clothing retail brand's social media platforms.	0.7	4.0	16.7	55.3	23.3

1=Strongly Disagree, **2***=Disagree, **3***= Neutral, **4***= Agree, **5***=Strongly Agree*

Source: *Field data (2025)*

The results show that the majority of respondents find it easy to share information (88%) and engage in two-way interactions with administrators on their favorite clothing retail brands' social media platforms (81.3%). Additionally, 78.6% of respondents indicated that they can easily express their opinions and participate in conversations with other users. These findings suggest that respondents are able to engage in meaningful interactions on these platforms, which may have important implications for strengthening brand loyalty.

Electronic Word of Mouth

The study also examined respondents' views on the electronic word of mouth (eWOM) they share on the social media platforms of their favorite clothing retail brands. This was assessed by asking them to indicate their level of agreement or disagreement with statements presented in Table 3.

Table 3: Distribution of respondents by extent of eWOM they spread in their favourite Clothing retail social media platforms (n=150)

Statements	1*(%)	2*(%)	3*(%)	4*(%)	5*(%)
I recommend my favourite Clothing retail brand to others through social media platforms.	1.3	2.0	11.3	55.4	30.0
I like to pass along information on my favourite Clothing retail brand products and services from its social media platform to my friends.	1.3	4.0	8.0	58.7	28.0
I like to upload content from the social media platform of my favourite Clothing retail brand on my WhatsApp, Facebook page, Instagram, Twitter, etc.	2.0	9.3	17.3	50.0	21.4

1*=Strongly Disagree,* ***2****=Disagree,* ***3****= Neutral,* ***4****= Agree,* ***5****=Strongly Agree*
Source: *Field data (2023)*

These results indicate that the majority of respondents (85.4%) are willing to recommend their favorite clothing retail brands to others through social media platforms. Additionally, 86.7% reported that they share information about the brand's products and services with friends, while 71.4% upload content from the brand's social media platforms to their own accounts. These findings suggest that the ability of clothing retail SMEs to encourage sharing of brand-related information and experiences can significantly enhance electronic word of mouth (eWOM), which may, in turn, influence brand loyalty.

Trendiness

The study also examined respondents' satisfaction with the level of trendiness on their preferred social media platforms for clothing retail shopping. This was assessed by asking respondents to indicate their level of agreement or disagreement with statements presented in Table 4.

Table 4: Distribution of respondents by extent of trendiness in their favourite Clothing retail social media platforms (n=150)

Statements	1*(%)	2*(%)	3*(%)	4*(%)	5*(%)
The content shown on the social media platform of my favourite Clothing retail brand is up to	0.7	1.3	6.0	57.3	34.7

date.					
My favourite Clothing retail brand utilizes prominent trends for its activities on social media platforms.	0.7	0.7	12.6	55.3	30.7
My favourite Clothing retail brand responds instantly to the latest tendencies.	0.7	0	17.3	54.0	28.0

1=Strongly Disagree, **2***=Disagree, **3***= Neutral, **4***= Agree, **5***=Strongly Agree*
***Source:** Field data (2023)*

These results indicate that the majority of respondents (92%) perceive the content shared on their favorite clothing retail brands' social media platforms as up to date. In addition, 86% believe that these brands incorporate current trends into their social media activities, while 82% feel that the brands respond promptly to emerging trends. Together, these findings suggest that the trendiness of clothing retail SMEs' social media content enhances customer satisfaction, which may, in turn, influence brand loyalty.

Customization

The study also examined respondents' satisfaction with the level of customization they experience on their preferred social media platforms for clothing retail shopping. This was assessed by asking respondents to indicate their level of agreement or disagreement with statements presented in Table 5.

Table 5: Distribution of respondents by extent of customization they experience in their favourite Clothing retail social media platforms (n=150)

Statements	**1*(%)**	**2*(%)**	**3*(%)**	**4*(%)**	**5*(%)**
The information that I need can be found on the social media account of my favourite Clothing retail brand.	1.3	1.3	11.3	59.3	26.7
The social media of my favourite Clothing retail brand enables me to easily search for the information I want.	0.7	2.7	9.3	59.3	28.0
My favourite Clothing retail brand's social media provides services that meet my needs and preferences.	0.7	2.0	11.3	60.0	26.0

1=Strongly Disagree, **2***=Disagree, **3***= Neutral, **4***= Agree, **5***=Strongly Agree*
***Source:** Field data (2023)*

These results indicate that the majority of respondents (86.0%) are able to find the information they need on the social media accounts of their favorite clothing retail brands. In addition, 87.3% reported that it is easy to search for the information they want on these platforms, while 86% agreed that the services provided meet their needs and preferences. These findings suggest that the level of customization offered by clothing retail SMEs on social media contributes to customer satisfaction, which may, in turn, influence brand loyalty.

Brand Loyalty

The study also examined respondents' perceptions of their level of loyalty toward their favorite clothing retail SME brands. This was assessed by asking respondents to indicate their level of agreement or disagreement with statements presented in Table 6.

Table 6: Distribution of respondents by extent of their loyalty to their favourite Clothing retail SME brands (n=150)

Statements	1*(%)	2*(%)	3*(%)	4*(%)	5*(%)
I intend to keep purchasing the products and services offered by my favourite Clothing retail brand.	0.7	2.0	12.0	56.0	29.3
I consider myself to be loyal to my favourite Clothing retail brand.	0.7	5.3	18.0	48.0	28.0
I usually consider my favourite Clothing retail brand as my first choice when buying Clothing retails.	0.7	5.3	16.0	49.3	28.7

1=Strongly Disagree, **2***=Disagree, **3***= Neutral, **4***= Agree, **5***=Strongly Agree*
***Source:** Field data (2023)*

In essence, these results indicate that the majority of respondents (85.3%) intend to keep purchasing the products and services offered by their favourite Clothing retail brand. They also consider themselves to be loyal to this brand (76%) and usually consider it as their These results indicate that the majority of respondents (85.3%) intend to continue purchasing products and services from their favorite clothing retail brands. Additionally, 76% consider themselves loyal to these brands, while 78% reported that they usually regard them as their first choice when purchasing clothing. These findings suggest that customer loyalty plays an important role in shaping purchasing decisions, which may further reinforce brand loyalty.

Analysis of Variance

Analysis of Variance (ANOVA) is used to determine whether there are statistically significant differences between the means of two or more groups. The results presented in Table 4.12 show an F-value of 46.5, with degrees of freedom (5, 144), and a p-value of 0.000. Since the p-value is less than 0.05 ($p < 0.05$), the variables are statistically significant, indicating that the model is significant.
first choice when buying Clothing retails (78%). These findings suggest that the level of loyalty to these Clothing retail brands contributes to respondents' purchasing decisions, which could influence brand loyalty.

Analysis of Variance

The Analysis of Variance (ANOVA) tests whether the means of two or more groups are significantly different from each other. Table 7 shows the ANOVA findings. The F-value is (46.5), DF (5,144), and the P-value is (0.000). The P value of less than 0.05 ($p<0.05$) indicates that the variables are statistically significant, thus the model is significant.

ANOVA[a]

Table 7: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	53.686	5	10.737	46.586	.000[b]
	Residual	33.189	144	.230		
	Total	86.875	149			

[a] Dependent Variable: Brand Loyalty average
[b] Predictors: (constant), Entertainment, Interaction, eWOM, Trendiness, Customization

Source: *Field data (2023)*

Coefficients

The coefficient table (Table 8) illustrates the magnitude and direction of the relationship between the predictor variables and the response variable. This table demonstrates the relationship between entertainment, interaction, eWOM, trendiness, customization, and brand loyalty. The regression model, therefore, is as follows:

Brand loyalty (Y) = 0.58 + 0.018 Entertainment + 0.106 Interaction + 0.380 eWOM + 0.336 Trendiness + 0.172 Customization.

Table 8: Coefficients

Model		Unstandardized coefficients		Standardized coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.058	.284		.203	.839
	Entertainment	.018	.096	.015	.192	.848
	Interaction	.106	.099	.095	1.062	.290
	eWOM	.380	.090	.364	4.248	.000
	Trendiness	.336	.107	.285	3.135	.002
	Customization	.172	.128	.147	1.352	.179

[a] Dependent Variable: Brand Loyalty

Regarding the effect of entertainment on brand loyalty, the regression results showed an R2 value of 61.8 and a p-value greater than 0.05. This indicates that entertainment does not have a statistically significant effect on brand loyalty ($\beta=-0.018, P>0.05$). The relationship between entertainment and brand loyalty was also found to be non-significant, with a correlation coefficient of 0.848. Since the p-value exceeds 0.05, the hypothesis that entertainment significantly affects brand loyalty is rejected.

Similarly, the effect of interaction on brand loyalty was not statistically significant. The regression results showed an R2 value of 61.8 and a p-value greater than 0.05, indicating no significant effect ($\beta=0.106, P>0.05$). The correlation coefficient of 0.290 further confirms the non-significant relationship. Therefore, the hypothesis that interaction significantly affects brand loyalty is also rejected.

In contrast, electronic word of mouth (eWOM) showed a statistically significant effect on brand loyalty. The regression results indicated an R2 value of 61.8 and a p-value less than 0.05, confirming significance ($\beta=0.380, P<0.05$). The relationship between eWOM and brand loyalty was also significant, with a correlation coefficient of 0.000. Based on these results, the hypothesis that eWOM significantly affects brand loyalty is accepted.

Similarly, trendiness was found to have a statistically significant effect on brand loyalty. The regression results showed an R2 value of 61.8 and a p-value less than 0.05 ($\beta=0.336, P<0.05$). The correlation coefficient of 0.002 further supports the significance of this relationship. Therefore, the hypothesis that trendiness significantly affects brand loyalty is accepted.

On the other hand, customization did not show a statistically significant effect on brand loyalty. The regression results indicated an R2 value of 61.8 and a p-value greater than 0.05 (β=0.172,P>0.05). The correlation coefficient of 0.179 also suggests a non-significant relationship. As a result, the hypothesis that customization significantly affects brand loyalty is rejected.

Discussion

Respondents' satisfaction with the entertainment provided on their favorite social media platforms for clothing retail shopping was analyzed descriptively. The findings showed that 88% of respondents found the platforms enjoyable, 86.7% found the content interesting, and 88.6% appreciated receiving product information through these platforms. These results suggest that the entertainment value offered by outfit retail enterprises contributes to customer satisfaction and may influence brand loyalty. Similar findings have been reported by Majeed et al. (2021) and Fetais & Algharabat (2023), who found that entertainment enhances customer experience and satisfaction, which are important for fostering brand loyalty.

However, the multiple regression analysis revealed that entertainment does not have a statistically significant effect on brand loyalty (β=-0.018,P>0.05). The correlation coefficient of 0.848 further confirms the absence of a significant relationship. This suggests that while entertainment improves customer satisfaction, it does not directly translate into brand loyalty. This finding is consistent with studies by Abdullah and Faisal (2022), Fetais and Algharabat (2023), and Xue et al. (2023), which also reported no significant relationship between entertainment and brand loyalty.

The application of the Theory of Planned Behavior, with its emphasis on predicting behavior, underpins the link between social media marketing activities and customers' tendencies to engage in repeat purchases from the same outfit enterprises. These activities shape customers' attitudes, perceived social pressure, and sense of control, which in turn influence their intentions and actual loyalty-related behaviours.

Overall, while entertainment enhances customer satisfaction and contributes to a positive user experience, it does not appear to be a key determinant of brand loyalty in this context. Other factors, such as product quality, pricing, and customer service, may play a more influential role.

Conclusion

Based on the findings of this study, several conclusions can be drawn regarding the influence of social media marketing activities on brand loyalty among outfit retail brands in Tanzania.

Entertainment: Although respondents found social media content entertaining and engaging, regression analysis showed that entertainment does not significantly influence brand loyalty. This suggests that while it enhances customer satisfaction, it is not a primary driver of loyalty.

Interaction: Respondents reported active engagement and communication on social media platforms. However, interaction was not found to have a significant effect on brand loyalty, indicating that engagement alone may not be sufficient to build lasting loyalty.

Electronic Word of Mouth (eWOM): A large proportion of respondents expressed willingness to recommend their preferred brands. The analysis confirmed that eWOM has a significant positive effect on brand loyalty, making it a critical factor for businesses to leverage.

Trendiness: Respondents indicated that brands keep up with current trends, and the analysis showed that trendiness significantly influences brand loyalty. This highlights the importance of aligning marketing content with current trends.

Customization: Although respondents appreciated personalized content and services, customization did not have a significant effect on brand loyalty. This suggests that while it improves user experience, it may not directly drive loyalty.

Overall, the findings indicate that while entertainment, interaction, and customization enhance customer satisfaction, they do not significantly influence brand loyalty. In contrast, eWOM and trendiness play a significant role in shaping customer loyalty. Therefore, outfit retail brands in Tanzania should prioritize strategies that strengthen eWOM and align with current trends to effectively build and sustain brand loyalty.

Recommendations

Based on the study's findings, outfit retail enterprises in Tanzania should give priority to strategies that deliberately stimulate positive electronic word of mouth. Encouraging customers to recommend brands, share product information, and repost content can be supported through referral initiatives, shareable campaign hashtags, and visible customer testimonials. By making it simple and rewarding for satisfied customers to speak about the brand online, firms can harness eWOM as a central driver of loyalty rather than relying solely on paid advertising.

Given the significant role of trendiness, retailers should also invest in processes that allow them to track and respond quickly to emerging fashion trends and digital aesthetics. This includes maintaining visually appealing, regularly updated content, collaborating with relevant influencers, and aligning posts with seasonal styles and local cultural moments. Consistent trend alignment signals relevance and modernity, which helps sustain customer interest and repeat purchase intentions.

Although entertainment, interaction, and customization did not show a direct significant effect on loyalty, they remain important for creating positive customer experiences and may influence loyalty indirectly through satisfaction, perceived value, or engagement. Retailers should therefore integrate entertaining content, two-way communication, and basic personalization into loyalty-oriented designs, such as interactive live sessions that feature exclusive offers or tailored suggestions based on customers' preferences. In addition, they should ensure that promises made on social media are supported by reliable product quality, fair pricing, and responsive customer service, so that positive online perceptions translate into consistent offline satisfaction. Finally, managers and researchers should continue to apply the Theory of Planned Behavior when designing and evaluating social media campaigns, paying close attention to how attitudes, social norms, and perceived control are shaped across different customer segments.

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DIGITAL INBOUND MARKETING IN THE BOOK INDUSTRY: INSIGHTS FROM A QUALITATIVE STUDY AND A CASE STUDY IN TUNISIA

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DIGITAL INBOUND MARKETING IN THE BOOK INDUSTRY: INSIGHTS FROM A QUALITATIVE AND A CASE STUDY IN TUNISIA

Abstract

This study aims to examine how inbound marketing strategies support the digital book industry. This research adopts an exploratory approach, combining a qualitative study and a Tunisian startup case study. The findings highlight the strategic role of inbound marketing in supporting customer acquisition and loyalty by offering immersive, user-centric digital reading experiences. This study contributes to the digital marketing literature in the creative and cultural industries by highlighting the strategic role of digital inbound marketing in creative and cultural industries, and particularly in e-book startups in emerging markets. Additionally, it offers insights for cultual startups aiming to enhance their positioning through content-driven and engagement-based strategies. It sheds light on the connection between technological innovation and cultural entrepreneurship, providing new perspectives on the digital transition in the publishing sector.

Key words: E-book, digital inbound marketing, AIDA, user experience, digital publishing, digital cultural entrepreneuship.

Introduction

The growing development of digital marketing tools and the use of new technologies can provide competitive advantages for SMEs (Proença and Toaldo, 2025) and enhance their performance (Clark et al., 2025). This underscores the transformative potential of digital entrepreneurship, particularly for startups (Ojala, 2024; Judijanto and Arfiansyah, 2024). Digital entrepreneurship involves leveraging technology to deliver exclusively digital products, thus fostering the development of entrepreneurial dynamics (Steininger, 2019). In an environment characterised by widespread digitisation across all sectors, the innovations introduced by these enterprises are redefining the entrepreneurial landscape and contributing to the creation of a thriving ecosystem of innovative, agile, and user-centered businesses.

Technological advancements and digital transformation have significantly impacted the creative and cultural industries, necessitating a shift toward the digitisation of cultural products (Alexandre et al., 2022). While the dematerialisation of cultural products initially began with music and video, the digitisation of books faced notable resistance from publishers, who perceived this digital shift as a potential threat to their activities and to the print book market as a whole (Riot, 2013). Nevertheless, the e-book market has considerably evolved, prompting a necessary reinvention of the book value chain. The global e-book market, estimated at $16 billion in 2023, is projected to exceed $21 billion by 2029. The highest growth rates were recorded in North America and the Asia-Pacific region. Despite this significant growth, digital book sales account for no more than 10% of the total book market revenue.

The widespread use of digital media has fostered a growing adoption of e-books as new mode of reading, particularly among younger generations and "digital natives." This enthusiasm for digital reading, confirming a shift in both book-reading habits and readers’ relationships with books, undoubtedly represents a business opportunity for publishers. They now find themselves facing both the challenges posed by digitisation and the new opportunities to rethink their strategies and evolve their business models to remain competitive. In this context, digital entrepreneurship has emerged as an alternative that offers innovative business opportunities (Nambisan and Baron, 2019; Elia et al., 2020). In the book sector, digital entrepreneurship is redefining traditional business models through digital platforms, enhancing the reach and accessibility of books. Indeed, digital book platforms allow for a broader geographical distribution of books, enabling authors from emerging markets to access global audiences. The digital transformation of the book industry is characterised by the integration of technology into various aspects of the publishing process from content creation to distribution and marketing. Accordingly, marketing strategies are being redefined, with traditional methods gradually and increasingly integrated with digital approaches designed to attract customers to e-book digital platforms. To this end, digital inbound marketing has become a key component of digital strategy (Fayed, 2025), particularly for startups and firms operating in highly competitive and innovation-driven sectors, such as e-commerce.

Digital inbound marketing is a strategic and digital approach that focuses on attracting, engaging, and retaining consumers through valuable, personalised, and contextually relevant content rather than intrusive advertising methods (Truphème, 2021). This approach mobilises various digital tools, such as search engine optimisation (SEO), content marketing, social media, email automation, and data analytics. The integrated use of digital inbound marketing components significantly enhances customer engagement, drives conversions, and consequently improves business and digital marketing performance (Al-Quran et al., 2025).

In this context, examining how startups operating in the e-book sector embrace inbound digital marketing strategies to promote e-books as a new and key component of the book ecosystem is particularly relevant.

To this end, this study has two main objectives :

- Examining the evolving role of the e-book within the book industry,
- Exploring how startups engage with digital inbound marketing strategies in an evolving publishing sector.

To investigate these issues, we adopted an exploratory approach that combined two research methods. To shed light on the e-book's evolving role within the publishing sector, a qualitative study through a focus group was conducted among book professionals. Second, a case study was conducted to define and explore digital marketing strategies in the e-book sector, with a particular focus on the processes and objectives of digital inbound marketing. For this purpose, an innovative startup that manages a digital platform for e-book sales was selected.

This paper is organised as follows : the first part is dedicated to a literature review on inbound marketing with reference to the AIDA model as a theoretical framework. The two methodological approaches used in this study are detailed, and the results are discussed. Finally, we conclude withy a a summary of the main contributions and suggestions of potential avenues of research on e-books.

Inbound marketing at the core of digital strategy

Inbound marketing has emerged in response to the profound shifts in consumer decision-making and purchasing behaviour induced by digital transformation (Fayed, 2025; Sánchez-Teba et al., 2020). In a digitised economy, companies' challenge is no longer to seduce consumers through mass communication techniques but rather to smoothly attract them into their digital spaces. Inbound marketing is a customer-centric process focused on the consumer's needs, role, and buying journey, mainly based on personalisation and interactivity (Truphème, 2021). This suggests an evolving relationship based on the co-creation of value between the company and its customers in a mutually beneficial exchange process, as framed by the Service-Dominant Logic (SDL) theory, which posits that value is created with and through the customer (Vargo and Lusch, 2009). This value co-creation, which benefits both the company and the customer, is at the heart of the digital inbound marketing approach. This personalised and interactive strategy is therefore based on attracting consumers and prospects who voluntarily choose to interact with a company that meets their needs, thereby generating satisfaction and benefits (Opreana and Vinerean, 2015), and consequently developing and sustaining the value

created. To achieve these goals, the operationalisation of a digital inbound marketing strategy is carried out through a combination of various digital marketing actions, such as social media marketing, blogging, search engine optimisation (SEO), content marketing, and web analytics (Patel and Chugan, 2018; Syihab et al., 2023).

The digital inbound marketing process

The digital inbound marketing strategy is primarily structured around four essential phases: (1) attraction, (2) conversion, (3) closing, and (4) retention (Opreana and Vinerean, 2015; Truphème, 2021). The first and foundational stage of implementing a digital inbound strategy is the attraction phase. This step involves building an empathetic connection with the company's potential customers to better understand their needs and influence their purchasing decisions. To achieve this, the creation of a customer persona is proposed as a preliminary and necessary step in developing a solid content strategy and digital inbound marketing plan (Harikrishnan and Vinith Kumar, 2022).

Customer persona analysis is based on defining demographic and psychographic characteristics, including motivations and intentions, values and emotions, communication styles, and information-seeking behaviours. As marketing content is a core component of inbound marketing (Davidavičius and Limba, 2022), effective persona analysis enables a deeper understanding of customers' content needs and supports the development of targeted and personalised digital content. To ensure that the target audience can find this content, search engine optimisation (SEO) is a particularly useful and effective tool for increasing content visibility on search engines (Ledford, 2015). The effectiveness of social media in attracting potential customers in the context of online marketplaces has also been confirmed (Syihab et al., 2023).

The second phase focuses on converting visitors into leads through interaction and personalisation of promotional content, aiming to build customer trust. The next step involves converting leads into buyers by finalising a purchase, followed by the crucial phase of retention. This loyalty process is activated by maintaining personalised and continuous contact with customers, seeking to delight them in the post-purchase phase, and ultimately converting them into brand ambassadors.

Since inbound marketing is based on building relationships with consumers by naturally attracting them to engage with the company, the AIDA model (Attention, Interest, Desire, Action) is relevant for analysing inbound marketing within a digital context.

The AIDA model: A conceptual framework for digital inbound marketing

As a hierarchy of effects model, AIDA has long been one of the most influential and widely used frameworks in communication and consumer behaviour studies within the marketing field (Iwamoto, 2023). AIDA is a sequential persuasion process comprising four stages. The first involves capturing the prospect's attention, which is a necessary condition for generating interest and then cultivating a desire for the product or service. These three stages set the foundation for the final phase: action, where the prospect is converted into a user and engages in a relationship with the company or brand.

Moreover, emerging technologies have significantly redefined marketing and communication approaches, shifting from product-centric to customer-centric models. While this paradigm shift has not invalidated the fundamental principles of the AIDA model, it has inspired adaptations and enrichments by incorporating new variables and rethinking its phases. In the digital context, interactivity and personalisation are central to the company-consumer relationship. Attention is captured through compelling visuals, impactful messaging, and highly personalised content. To generate interest, companies can emphasise customer-centric benefits, highlighting how the product offers relevant solutions within a personalised and empathetic framework. The development of desire for a brand or product may be fostered by providing persuasive arguments and reassurance, such as statistics, images, or testimonials. Finally, the call to action can involve invitations to free trials, account creation on the company's digital platforms or interactions via digital channels and social networks.

The AIDA model has also served as a foundational theoretical framework for conceptualising new persuasion and consumer behaviour models in the digital environment. The AISDALSLove model was introduced as an evolution of the AIDA hierarchy of effects in communication contexts (Wijaya, 2015). This enhanced model incorporates, in addition to the original four stages, the variables of "Search," "Like," "Share," and "Love." These new stages reflect the unique interactive advantages of digital environments and enrich the initial model by integrating more intense emotional responses, thereby highlighting the strength and personalisation of the consumer-brand relationship, which is a core principle of customer-centered digital marketing.

The relevance of the AIDA model, including some adaptations, has also been confirmed in studies of email campaign effectiveness. For example, the "desire" stage was removed, as this step often occurs outside the email process (Lorente Páramo et al., 2021).

Inbound marketing thus aligns with a digital "pull" strategy, supporting business efforts to enhance brand awareness and improve their competitiveness. This approach is particularly suited to small businesses, requiring modest investments while enabling entrepreneurs to build personalised relationships with customers (Gedik, 2020). In the same line, this study emphasises inbound marketing as a driver of growth and success for startups.

Digital inbound marketing: A driver of startup success

The adoption of a digital inbound marketing strategy in startups has gained increasing importance due to its potential to enhance growth and performance (Patel and Chugan, 2018). Start-ups often face constrained financial resources, which, in highly competitive and dynamic environments, makes slow growth particularly threatening to their viability. However, many startups still fail to optimise their digital strategies. Even when they provide high-quality content, they often struggle to convert leads into paying customers. This reality has prompted researchers to propose models and techniques to guide startups in designing efficient and optimised digital and inbound marketing strategies. In this regard, Sahin (2021), who observed a persistent preference for traditional marketing over digital strategies within startups, proposed an integrative model combining both outbound and inbound marketing approaches. This model, intended to guide startups' marketing activities, emphasises the complementary role of

traditional marketing in supporting and enhancing digital efforts, ultimately contributing to the success of a marketing campaign (Dakouan et al., 2019).

Successful digital inbound marketing in startups relies on accurate customer personas and a content strategy aligned with evolving customer needs (Harikrishnan and Vinith Kumar, 2022). It is essential to deliver personalised, targeted, creative, and engaging content that encourages prospects to make a purchase. Calls to action can be especially effective in prompting conversions. Customer engagement is another critical success factor that can be fostered through sustained interaction on the company's social media platforms. This includes responding promptly to inquiries and addressing complaints or concerns that may arise. Finally, it is fundamental to carry out continuous and regular monitoring and analysis of performance data using a combination of relevant KPIs aligned with the strategic digital objectives. Among the commonly used performance indicators, we can cite the number of visitors, average visit duration, most visited pages, bounce rate, click-through rate, customer acquisition cost, and return on investment. (Truphème, 2021).

The relevance of the AIDA model has been confirmed across several contexts, particularly in digital contexts such as social media promotion (Mumtaz, 2019), mobile marketing (Rehman et al., 2015), and tourism websites (Prathapan et al., 2018). We propose to extend these applications to digital books. New platforms and startups promoting books in the digital environment are strongly contributing to redefining the role and place of digital books in the book ecosystem, which we propose to explore in the next section.

Mapping the role of digital books within the publishing sector : Qualitative study

The book chain refers to the process of book production and marketing, organised in multiple stages that are closely interconnected (Messori, 2014). This process is generally divided into two main phases: a production phase, which involves the author, publisher, graphic designer, and printer, and a distribution phase, which focuses on the processes of book commercialisation (Gauthier, 1998). According to Bessard-Banquy and Deseilligny (2021), digital technologies have contributed to a "mediamorphosis" of the book, disrupting both the paths and processes of its production and distribution. The integration of digital technologies into the book chain has become a central concern for stakeholders in the publishing ecosystem. While such concerns are relatively recent in some regions, they have long been debated in other contexts, particularly in Europe, Japan, and the United States, where the digital shift has significantly disrupted the economic models of the actors in the book chain, especially publishers and distributors (Benhamou and Guillon, 2010).

The emergence of digital books has progressively reshaped the traditional book chain, challenging long-established roles and interactions among key actors, including authors, publishers, distributors, booksellers, and readers. This section explores the evolving role of digital books in the publishing ecosystem, examining how they are integrated, resisted, or redefined by various stakeholders.

For this purpose, a focus group was conducted with nine professionals representing various profiles of actors in the book ecosystem in Tunisia (author, editor, printer, bookseller). The e-book market in Tunisia is still emerging and is characterised by a limited number of dedicated

platforms. Moreover, there is a significant lack of official statistics on its size and dynamics, which complicates drawing comparisons with other contexts or developing reliable hypotheses regarding its potential evolution. Despite these structural limitations, interest in digital reading is gradually growing, indicating a progressive shift in reading habits. This trend is supported by a study conducted by the Higher Institute of Documentation on reading practices in Tunisia, which reported a significant increase in digital book consumption from 25% in 2007 to over 37% in 2019 (Mkadmi and Romdhane, 2020). This rising interest, while still emerging, indicates the potential for further innovation and growth within the digital publishing ecosystem.

In this context, this focus group aims to understand the evolving place and role of e-books within the broader publishing ecosystem. More specifically, the interview was organised around four main topics :

- Genral perceptions and opinions on the digitisation of books
- Place of the e-book within the book chain
- Challenges and opportunities associated with e-books
- Future of e-books

The discussions provided valuable a multiperspective insights on the challenges and opportunities associated with digital. This pluralistic approach enabled a reflective and experience-based discussion grounded in the participants' various roles and positions within the publishing ecosystem.

The digital book from the author's perspective

The authors unanimously recognised digital publishing as a means to enhance the global visibility of their work.

« *Digital publishing offers significant advantages, particularly for emerging authors. Digital publishing shortens the traditional book value chain by removing key cost-intensive stages, thereby facilitating faster and more economical access to publications. This enables more affordable pricing, which can encourage the discovery of new books and new authors. I am convinced that digital books cannot replace printed books. Print will continue to have its place as it offers a different kind of reader experience closely related to the tactile and sensory dimensions of reading and the symbolic and social value associated with physical books. Holding, smelling, and displaying printed books remains meaningful for many readers. Moreover, print enables shared social practices such as browsing bookstores or reading in public. I think that digital publishing is undeniably gaining ground and can be viewed as the future of reading, offering new opportunities to democratise access to books, and I am excited to see where it leads*. » (Ahmed, author)

This opinion regarding the complementary role of digital formats is also widely supported by other authors, highlighting the importance of digital formats in reinforcing rather than substituting print books while facilitating their broader dissemination.

« *For me, digital publishing is essential because printed books are still not widely accessible, and I do not always have access to them. Personally, I think that digital formats offer an*

opportunity for Tunisian authors to gain international visibility and for readers to discover new books and emerging writers» (Dorra, author).

The digital book from the editor's perspective

Although editors acknowledged initial concerns about e-books' impact on publishing sector, they emphasised the complementarity between print and digital formats.

« *At the beginning, we were worried that e-books might threaten the publishing industry, our work, and printed books. We were among the first publishers to embrace the digital transition, but we were pleasantly surprised by the results of digitising our books and referencing them electronically. It even had a positive effect on our printed-book sales. Therefore, digitalisation can enhance rather than threaten the sector.* » (Moncef, editor and author).

The other publishers participating in the focus group highlighted the pivotal role of digital publishing and its potential for international promotion and expansion.

« *Some readers are hybrid consumers who engage with both print and digital books. The core elements of a book, such as structure, design, typography, and cover, remain consistent across formats. Additionally, digital books typically 30 to 40% cheaper than print, can strongly improve accessibility*.» (Hichem, Author and Editor).

This opportunity is also confirmed by another key actor in the book chain, the printer, whose activity might, at first glance, appear to be the most threatened by the digitisation of books.

The digital book from the printer's perspective

The printer considers that although digital book sales remain low compared to print, the digital book represents a new opportunity for the book industry as a whole, as it is a more accessible and cost-effective format. Unlike the digitalisation of the print media industry, e-books are not viewed as a threat to printed books.

« *In the case of magazines or newspapers, the printing sector has indeed been negatively impacted by digitisation. Readers seek timely information, and once they have accessed news via digital platforms and social media, they are less likely to purchase a physical copy, as they have already consumed the information. However, this dynamic does not apply to books, whose consumption is experiential and involves sustained reading experience over time. Digital books complement rather than replace print books, offering additional convenience for readers and enabling publishers to reach new audiences, particularly digital natives. Both formats can coexist and benefit from one another. Furthermore, I consider that digital publishing is an opportunity to extend the lifecycle of backlist titles in the digital environment. E-books are more convenient, easily accessible, and can stimulate print book sales.* » (Mourad, printer, editor, and cofounder of e-book platform).

Another actor in the book ecosystem, viewed as highly threatened by digital book formats, is the bookseller.

The digital book from the bookseller's perspective

The idea that the e-book, as a digital innovation offering a new reading format, should be fully integrated into book sales strategies is also supported from a bookseller's perspective.

« *While lower prices may make e-books attractive, they cannot replace printed books. Thus, they should not be viewed as a threat to physical bookstores. Bookstores remain sensory and social spaces where readers engage in unique purchasing and reading experiences. In physical bookstores, readers experience a tactile and symbolic relationship with books. Moreover, the social dimension of bookstores is essential, as they serve as places for exchange and discussion of literature.* » (Habib, bookseller and editor).

These findings suggest that rather than replacing print books, e-books enrich the reading landscape by offering distinct yet complementary reading experiences.

Role of e-books in the book industry: A multi-stakeholder perspective

This focus group provided insights from authors, publishers, printers, and other key actors in the book industry. Participants unanimously emphasised the need to recognise the e-book as a fully integrated component of the book ecosystem. Across these perspectives, a consensus emerges around complementarity rather than competition between digital and print formats, with a focus on the potential synergies between both formats. E-books are considered new opportunities to enhance the global visibility and dissemination of books. Their wide availability and accessibility were underscored by the participants.

First, the authors highlight digital publishing as a key means for enhancing accessibility, especially for new and independent writers, by enabling faster publication cycles and broader international visibility. Then, publishers confirm the synergistic relationship between the two formats, providing empirical evidence that e-books can boost rather than cannibalise printed book sales. Therefore, digital serves as both a promotional tool and a channel for reaching various reader segments, particularly younger and digitally native audiences. Finally, the printer, initially perceived as the most vulnerable actor to digitisation, acknowledges that while sectors like periodicals or journals have been strongly and negatively impacted by the electronic press, this threat is not applicable to books. This can be explained by the experiential nature of book-reading experience, which ensures that print and digital books can coexist. In addition, digital formats can contribute to the revitalisation of older titles. Furthermore, the economic benefits and ecological advantages associated with digital books reinforce their strategic value within the book ecosystem. However, they also emphasise the importance of ethical and legal considerations in the digital space.

In conclusion, these findings position the e-book not as a disruptive threat but as a new complementary actor within the evolving book ecosystem. The integration of digital formats within the book chain represents a nuanced transformation that balances innovation and tradition.

The growing development of e-books is inspiring digital entrepreneurs in the book sector and new marketing strategies to broaden market reach and foster the democratisation of reading. Among these strategies, the inbound marketing is at the core of digital strategy. More

specifically, digital inbound marketing is considered a significant driver of startup development and growth. In this context, this study examines a startup operating a digital platform for e-books, with a particular focus on the deployment of digital inbound marketing strategies to enhance visibility, customer acquisition, and promotion of its digital publishing offer.

Digital inbound marketing : Case study

Company background

Book consumption has significantly increased in Tunisia. The percentage of people who read at least one book increased from 12% in 2015 to 25% in 2023, including 20% who reported reading a digital book. Simultaneously, rapid technological advancement and widespread digitisation call for the necessary definition of new strategies to support the national and international promotion of books. The transition of the book industry to digital formats was notably accelerated by the COVID-19 pandemic. The health crisis compelled book industry professionals to adopt online sales and transition to e-book formats to sustain a vulnerable sector strongly impacted by restrictions and lockdowns. However, the outcomes of this shift remain limited due to underdeveloped digital book promotion platforms and persistent consumer reluctance. Many Tunisian readers continue to prefer physical interactions with books, particularly in traditional bookstores. This period was also marked by a global increase in paper prices driven by both production and maritime transportation costs. The impact on Tunisia's book industry was direct, as these increased costs resulted in higher prices.

In this context, marked by both the rising cost of printed books and a growing shift in consumer behaviour toward digital formats, digital publishing has emerged as a business opportunity. Moreover, digital books are presented as a potential solution for democratising reading among people across various regions. Despite its potential, the digital book market continues to face consumer resistance to digital purchases. This reluctance is largely driven by the widespread circulation of free PDF books, often shared through online reading communities on social media. In these challenging conditions, clik2read, launched in February 2022, emerged as Tunisia's first digital book platform. Bridging cultural entrepreneurship and digital innovation, this startup is dedicated to promoting digital books as a sustainable and accessible complement to printed books. For this purpose, it relies on inbound marketing as the core component of its marketing strategy.

Inbound marketing as a strategic lever in the company's development model

To generate traffic toward its platform, clik2read combines a hybrid approach including participation in physical events and a digital communication strategy across multiple digital touchpoints and on social media platforms.

Since its creation in 2022, clik2read has participated in several national and international book fairs. These participations enhanced its visibility and attracted people to discover the platform, thanks to the original, fully digital, and aesthetically engaging exhibition stand. The innovative design is complemented by live demonstrations of the platform, interactive trials, and immersive experiences facilitated through electronic terminals and interactive screens. This setup provides visitors with the opportunity to gain first-hand experience of the platform's

functionalities. Moreover, the presence of the company's co-founders and staff offering personalised guidance contributed to reinforcing user interest, corresponding to the first phase of the AIDA model.

By facilitating direct interaction with the company's founders and employees, these events reduce perceived risk and strengthen user trust, which may contribute to reinforcing the desire to discover the platform, thereby converting prospects into subscribers. User conversion is facilitated by a simplified and secure registration process. The account creation process has been streamlined and secured through an email-based activation system, with the aim of encouraging user registrations on the platform. Once authenticated with their personal credentials, users can create and access their own virtual library tailored to their reading preferences and needs at any time. Thanks to this innovation, the company differentiates itself from conventional digital book retail models, which typically rely on e-book downloads, by offering a unique, personalised, and immersive user experience. Furthermore, clik2read offers new users a free e-book upon registration, contributing to positive user onboarding and enhancing customer retention.

While physical events have supported initial brand positioning and lead generation, the startup mainly relies on its digital strategy to reach readers, convert them into registered users on the platform, and ultimately into customers. The company's social media communication aims to ensure targeted and effective audience engagement. LinkedIn is primarily leveraged for B2B communication, particularly to promote professional partnerships and institutional visibility. Facebook and Instagram are oriented toward B2C engagement, emphasising book recommendations, platform updates, and promotional campaigns. Moreover, the company's communication strategy is strongly aligned with Sustainable Development Goals (SDGs), highlighting its strategic commitment to promote reading as a responsible, inclusive, and universally accessible cultural practice. By featuring organisational developments such as business partnerships, literary event participation, and new publications, the company's posts aim to enhance the desire of readers to better know the platform, and consequently to subscribe and to interact with the platform. These efforts are underpinned by a continuous improvement process focused on user experience optimisation. The startup prioritises intuitive interface design, appealing visuals, and a streamlined information architecture to facilitate navigation and interaction with the company, thereby supporting both acquisition and retention strategies. Company communications aim to sustain audience interest and foster emotional and intellectual connections. These connections are reinforced by the interactive features provided by the platform, thereby enabling an enjoyable and valuable user experience.

The various applications of inbound marketing within a company's overall marketing strategy are summarised in figure 1.

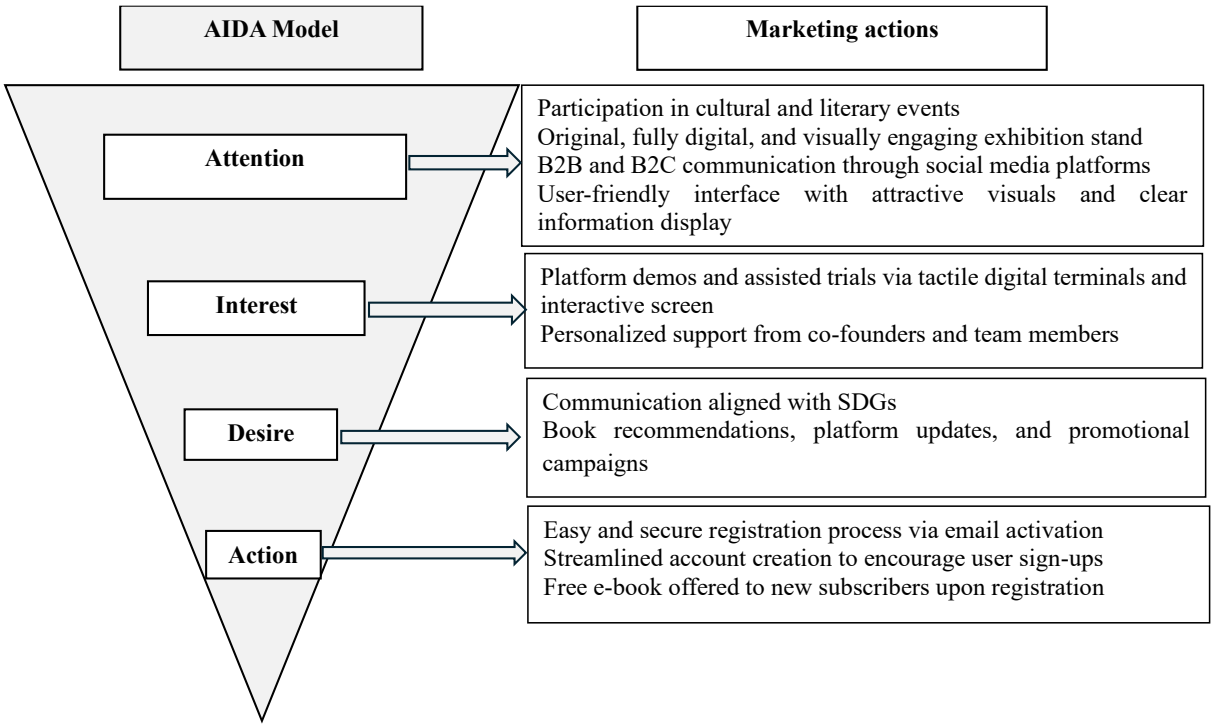


Figure 1: Inbound marketing applications

Discussion and conclusion

In a context marked by a growing enthusiasm for digital reading, e-books have reinforced their position and role in the book industry. For entrepreneurs, the digitisation of books represents a new business opportunity to reinvent the publishing industry. The creation of startups and digital platforms dedicated to e-books has attracted a growing number of entrepreneurs in the publishing sector. Digital entrepreneurship is thus emerging as a potential catalyst for the expansion of the digital book industry. To achieve this, startups operating in the e-book sector must have a strong capacity for innovation, not only from a technological perspective through the adoption of advanced digital tools, but also from a marketing standpoint. Therefore, the design and implementation of integrated and innovative digital marketing strategies are central concerns for entrepreneurs in the sector.

This study contributes to ongoing reflections on digital books and digital entrepreneurship by focusing on the specific case of startups in the book industry. In particular, it emphasises the role of digital inbound marketing strategies in supporting and promoting the development of entrepreneurial projects. To address these research goals, two main research questions were proposed.

- What is the role of e-books in the contemporary book ecosystem?
- How can digital inbound marketing drive the development of startups in the e-book sector?

To provide insights into these questions, an exploratory research combining a qualitative study and a case study was conducted.

For a better understanding of the e-book's role, a focus group was conducted with professionals in the publishing industry. The objective was to provide a multi-perspective understanding on the emergence and development of the e-book within the book ecosystem in the context of readers' evolving consumption habits. These findings suggest that e-books should not be perceived as a threat to the publishing industry. In contrast, book digitisation is widely seen as a valuable opportunity and potentially a booster for printed books. In an increasingly digital environment, the e-book is naturally and fully integrated into the value chain, contributing to reimagining both the publishing sector and reading practices. Participants agree on the need for the publishing profession to evolve in response to technological changes and shifting reader expectations. There is a strong consensus on the need to adapt book-related professions to align with this new digital context to meet evolving consumer needs. Accordingly, the integration of e-books into editorial, distribution, and marketing processes is seen as a necessary transition to digital reading rather than a substitution for printed reading. Printed and digital formats coexist in a complementary relationship, supported by their distinct characteristics, target audiences, and reading habits.

It is important to note that the emergence of e-books was initially met with apprehension, considering them a threat to printed books. However, this apprehension has diminished, giving way to more widespread acceptance in a highly digitalised context. This evolving context has encouraged book entrepreneurs to invest in digital formats. The development of platforms dedicated to e-books is one of the most prominent initiatives in digital publishing entrepreneurship. This study focuses on a Tunisian startup that launched Tunisia's first e-book platform. Believing that it is necessary to reinvent the reading experience in the digital age, the co-founders have closely collaborated with authors, publishers, and readers to offer a diverse, targeted, and continuously updated selection of books. This co-creative and collaborative approach aims to deliver an immersive, original, and enjoyable reading experience that is accessible to all. To achieve this, the startup adopts a customer-centric approach, placing user needs and experiences at the core of its strategy. To promote its e-book portfolio, attract readers to its digital spaces, and foster long-term loyalty, the company relies on digital inbound marketing as a key strategy. In addition to digital and social media initiatives, the startup draws on techniques from event-based and relationship marketing to reinforce its outreach. For instance, literary events and direct interactions with readers may create opportunities to introduce prospects into the digital reading environement.

This study contributes to a better understanding of the evolving role of e-books in the contemporary book industry. It offers insights into how digital reading formats are no longer marginal but constitute a strategic component in the reconfiguration of the publishing ecosystem. By highlighting the coexistence and complementarity between printed and digital books, this study supports the relevance and advantages of technological integration in cultural industries. From a managerial perspective, this study highlights the importance of adopting innovative and customer-centric marketing strategies, particularly inbound digital marketing, for startups operating in the e-book sector. The analysis demonstrates how digital startups can leverage inbound strategies to attract and engage readers, build lasting relationships, and drive sustainable growth. This study supports the need for digital book startups to align technological innovation with original and enriched reader experiences.

Despite the meaningful findings and insightful conclusions of this exploratory study, it is limited by its focus on a single startup case, thereby limiting the generalisation of results across the broader publishing industry. Future research could extend this work by conducting comparative studies across multiple startups and cultural contexts to better capture the diversity of digital book entrepreneurship across several publishing environments. Quantitative methods could also complement current qualitative insights by measuring the effectiveness of inbound marketing strategies in terms of user engagement, conversion rates, and long-term customer retention. Moreover, future studies could explore the role of artificial intelligence (AI) and data analytics in enhancing the personalisation and user experience of digital reading platforms. Indeed, increasing AI-driven digital marketing practices significantly impact either digital consumer behaviour or marketers' attitudes and intentions towards integrating updated AI tools and technologies in digital marketing (Faruk et al., 2025).

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L'Impact des Food Vlogueurs sur l'Attitude et l'Intention de Commerce Social de la Génération Z Tunisienne

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L'Impact des Food Vlogueurs sur l'Attitude et l'Intention de Commerce Social de la Génération Z Tunisienne

Résumé

Cette recherche analyse l'impact de la crédibilité des vlogueurs culinaires et du contenu qu'ils partagent sur les réseaux sociaux sur les attitudes et les intentions de commerce social de la génération Z en Tunisie. En utilisant un questionnaire administré en ligne à 237 répondants appartenant à la génération Z, les résultats montrent que la crédibilité des Food vlogueurs influence significativement les attitudes et les intentions de commerce social de cette génération. Les conclusions révèlent également que la qualité du contenu partagé par ces influenceurs joue un rôle crucial dans la formation du comportement des consommateurs. Ainsi, la crédibilité des vlogueurs culinaires et la valeur de leur contenu offrent aux marques alimentaires des informations précieuses dans le domaine de la publicité.

Mots-clés : vlogueurs culinaires, génération Z, crédibilité, intention de commerce social.

Abstract

This research analyzes the impact of the credibility of food vloggers and the content they share on social media on the attitudes and social commerce intentions of Generation Z in Tunisia. Using an online questionnaire administered to 237 respondents belonging to generation Z, the results show that the credibility of food vloggers significantly influences the attitudes and social commerce intentions of this generation. The findings also reveal that the type and quality of content shared by these influencers play a crucial role in shaping consumer behavior. Thus, the credibility of food vloggers and the value of their content, provide food brands with valuable insights in the advertising field.

Keywords: food vloggers, generation Z, credibility, social commerce intention.

Introduction

Le marketing d'influence s'est imposé ces dernières années comme l'un des outils les plus puissants dans les stratégies de communications digitales (Beddaa& Bentalha, 2025). Il a évolué en tant que méthode de persuasion client, avec 42.62% des entreprises envisageant d'augmenter leurs budgets pour les réseaux sociaux (Meltwater, 2023). Près de 60% des marques utilisent le marketing d'influence afin d'atteindre leurs objectifs de communication sur les plateformes de médias sociaux (*Influencer Marketing Hub, 2022*). Cela met en évidence son importance croissante à échelle mondiale (Beddaa& Bentalha, 2025).

En effet, les influenceurs orientent fortement les décisions, les habitudes de consommation et même les perspectives de divertissements des utilisateurs des réseaux sociaux (Safitri&Komaryatin, 2025 ; et Ezzat, 2024). Parmi ces influenceurs, nous identifions des vlogueurs culinaires, des amateurs de cuisine, des chefs cuisiniers et bien plus encore. Leur créativité et leur influence sur les habitudes alimentaires jouent un rôle important dans l'environnement numérique actuel (Ali et al., 2025 ; Ramadini et al., 2025, Bhagat et al., 2025 ; Masood et al., 2025 ; Banados&Polinar, 2025 et Truong et al., 2025). Le vlog culinaire a offert aux internautes de nombreuses possibilités de découvrir, d'explorer et de tester différents restaurants et cafés à proximité (Ali et al., 2025).

En fait, l'omniprésence des médias sociaux dans notre quotidien concerne plus de 90% des jeunes adultes (Mano, 2020). Cette tendance concerne particulièrement les jeunes âgés de 15 à 24 ans (« la génération Z »), où 95 % d'entre eux utilisent quotidiennement des plateformes de médias sociaux et les considèrent comme leur principal moyen d'interaction sociale, de communication (Tankovska, 2021) et de divertissement (Ezzat, 2024).

Des recherches antérieures se sont donc intéressées à l'effet des Food Vlogueurs sur les attitudes des consommateurs (Jiang et al., 2024), ou l'intention d'achat (Bhagat et al., 2025), ou l'engagement des clients (Safitri&Komaryatin, 2025) ou leur satisfaction (Netriani, 2024)...

Par ailleurs, les réseaux sociaux nous permettent aussi de partager les informations avec notre réseau. Or, nous avons constaté un manque dans la littérature du croisement de l'effet des Food Vlogueurs avec cette notion de partage. Ainsi, nous nous focaliserons dans cette recherche sur l'intention de commerce social qui nous permet d'intégrer à l'intention d'achat, l'intention de partage social.

En outre, l'engouement des recherches, porté à l'étude du rôle des Food Vlogueurs sur le comportement des consommateurs, est étudié dans plusieurs pays tels l'Egypte (Ezzat, 2024), le Maroc (Bouaddi et al., 2025), le Pakistan (Ali et al., 2025), l'Inde (Bhagat et al., 2025)… Cependant, il existe peu d'informations sur l'influence des Food Vlogueurs tunisiens. Pourtant, ces dernières années, la Tunisie aussi a connu une évolution rapide de la consommation médiatique, de la connectivité numérique et de l'expression culturelle, notamment chez les jeunes générations. Nous avons également observé que la plupart des études portant sur la génération Z se sont principalement axées sur leur intégration récente dans le monde professionnel ainsi que sur des comparaisons intergénérationnelles dans divers domaines, sans accorder une attention particulière à leur comportement alimentaire.

Par conséquent, notre problématique est : comment la crédibilité des Food Vlogueurs et le contenu qu'ils partagent sur les réseaux sociaux, influencent-ils l'attitude de la génération Z tunisienne ainsi que son intention de commerce social ?

Pour répondre à cette question principale, nous avons formulé les trois questions suivantes :

1. Comment la crédibilité des Food Vlogueurs influence-t-elle l'attitude de la génération Z Tunisienne ?
2. Comment le contenu partagé par les Food Vlogueurs affecte-t-il l'attitude de la génération Z Tunisienne ?
3. Dans quelle mesure l'attitude de la génération Z Tunisienne impacte-t-elle leur intention de commerce social ?

L'objectif de cette recherche est donc d'examiner l'impact de la crédibilité des Food Vlogueurs et de la valeur de leurs contenus partagés à travers les réseaux sociaux, sur l'attitude et l'intention de commerce social des Tunisiens de la génération Z. A cet effet, nous mobiliserons trois théories pour structurer cette recherche et nous exposerons les variables en jeux, ainsi que les liens qui les cernent dans la littérature, pour en déduire nos hypothèses dans un cadre conceptuel. Nous présenterons, par la suite, notre méthodologie quantitative, et nous discuterons enfin nos résultats.

Cadre Théorique de la Recherche

Les Théories Mobilisées

Cette recherche adopte une triple approche théorique, intégrant la théorie de l'action raisonnée, la théorie de l'acteur-réseau et la théorie sociale cognitive.

En effet, selon la*Théorie de l'Action Raisonnée* deFishbein et Ajzen (1975), le comportement est influencé par l'intention de le réaliser ; laquelle est façonnée par deux principaux facteurs : l'attitude envers le comportement et la norme subjective, qui représente la perception de l'opinion de l'entourage concernant ce comportement. En effet, plus l'attitude est positive et la norme subjective est favorable, plus l'individu est susceptible d'avoir l'intention d'adopter le comportement envisagé. Cette théorie sera particulièrement mobilisée dans notre recherche pour tester la relation entre l'attitude de la génération Z envers les Food Vlogueurs et l'intention de commerce social. En effet, la structure générale de notre cadre conceptuel est façonnée selon la Théorie de l'Action Raisonnée (TAR).

Concernant la *Théorie de l'Acteur-Réseau* de Latour, Callon et Akrich(1980), elle étudie comment les éléments humains et non humains (les « acteurs » et les « actants ») interagissent et se regroupent pour constituer des réseaux complexes. Cette théorie (ANT ou Actor-Network-Theory) est mobilisée dans notre recherche pour appréhender l'interaction entre les éléments humains, tels que les créateurs de contenu, les influenceurs (Food Vlogueurs) et les consommateurs de la génération Z ; et non-humains, tels que les plateformes de médias sociaux, les algorithmes et les dispositifs technologiques, et ce, afin de façonner les comportements de consommation. Autrement dit, pour étudier l'impact des vidéos culinaires partagées par les Food Vlogueurs sur la génération Z, nous pouvons examiner comment un réseau complexe d'acteurs humains et non-humains interagit afin de générer des tendances et d'influencer les comportements de consommation.

Quant à la *Théorie Sociale Cognitive* de Bandura (1986), elle met l'accent sur la façon dont les individus acquièrent des connaissances et interagissent avec leur environnement social. Elle souligne l'importance des processus cognitifs dans l'acquisition de connaissances et le comportement humain.Cette théorie nous permet de comprendre comment les Food Vlogueurs influencent la génération Z sur les réseaux sociaux. En se concentrant sur les concepts clés de cette théorie (apprentissage par observation, renforcement vicarial, auto-efficacité et interactions réciproques), nous pouvons analyser comment les Food Vlogueurs façonnent les comportements et les attitudes de la génération Z sur les réseaux sociaux. Ainsi, les individus sont plus enclins à suivre et à imiter les personnes qu'ils perçoivent comme bien informées ou faisant autorité (Bandura, 2001). Par conséquent, les abonnés des vloggers culinaires sont plus susceptibles d'adopter leurs attitudes et comportements en matière de préférences alimentaires et de marques, car ils les perçoivent comme des experts dans leur domaine (Ali et al., 2025).

Les Variables Mises en Jeux

Le *marketing d'influence* est une approche efficace pour les marques, leur offrant l'opportunité de se connecter avec les clients grâce aux influenceurs des médias sociaux, augmentant ainsi leur visibilité et leur image (Safitri&Komaryatin, 2025).De ce fait, le marketing d'influence est défini comme une nouvelle forme de communication où un individu (influenceur) perçu comme crédible ou influent promeut un produit auprès de son audience (Boughroum&Hamadi, 2025). En effet, le concept d'influenceur désigne principalement une personne ayant la capacité de persuader et d'exercer une influence sur d'autres individus, notamment sur leurs décisions d'achat (Bhagat et al., 2025). Cette influence repose sur un pilier fondamental nommé *la crédibilité*, c'est la perception que les consommateurs ont de leur fiabilité, de leur expertise et de leur honnêteté. Ce socle de confiance qui permet aux influenceurs de créer des relations solides avec leurs communautés et de mener des campagnes marketing plus efficaces (Boughroum& Hamadi, 2025).

Les *influenceurs* sont des utilisateurs de médias sociaux perçus comme des exemples à suivre par leurs abonnés (Johnstone& Lindh, 2022). Une nouvelle forme d'endosseurs qui façonnent les attitudes du public.D'autres études ont montré que les influenceurs établissent des liens plus forts avec leurs abonnés que les célébrités, ce qui leur permet de développer des relations de confiance et de crédibilité (Johnstone& Lindh, 2022 ; Boughroum& Hamadi, 2025 ; Khan,2023 ;et Sari et al., 2025). Divers chercheurs ont démontré également que le contenu généré par les influenceurs affecte fortement l'achat (Ramadini et al., 2025), l'intention d'achat (Beddaa et al., 2025), l'attitude des consommateurs (Jiang, 2024 et Boughroum&Hamadi, 2025), la valeur de la marque (Zia et al., 2022) et l'engagement des clients (Safitri&Komaryatin, 2025).

Par ailleurs, dans un contexte de méfiance envers l'industrie agroalimentaire, les Food Vlogueurs sur les réseaux sociaux rendent la nourriture plus accessible. L'alimentation joue alors, un rôle clé dans les relations sociales et l'expression des identités collectives et individuelles(Ezzat, 2024). Nous pouvons donc assister à un changement dans la culture culinaire (Abedin, 2025).Les vidéos culinaires gagnent en popularité, favorisant le partage de recettes, l'évaluation de restaurants et la diffusion de tutoriels (Mumuni et al., 2019 et Villanueva et al., 2024).Les vlogs culinaires sont particulièrement bénéfiques pour les voyageurs qui recherchent des recommandations sur les réseaux sociaux ;ils font confiance en aux personnes ayant déjà vécu l'expérience et souhaitent l'essayer par eux-mêmes (Lacsina, 2023).Enfin, les influenceurs culinaires ont une grande influence sur les décisions d'achat des consommateurs, car ils sont considérés comme des experts dans le domaine culinaire et ils ont une forte présence sur les réseaux sociaux (Rohmah et al., 2025 et Ali et al., 2025).

Comme nous nous intéressons plus particulièrement, à *la génération Z*, notons, tout d'abord, que cette dernière représente la plus grande cohorte démographique, englobant plus d'un tiers de la population mondiale (Ali et al., 2025).

Ensuite, la génération Z, née dans l'ère numérique, n'a jamais vécu dans un monde sans Internet. Nourris par les réseaux sociaux, les membres de la génération Z sont profondément connectés au monde électronique et numérique (Ali et al., 2025). Ils consomment et utilisent ces plateformes comme moyen de partager ou de diffuser des informations (Ezzat, 2024). Le marketing sur les médias sociaux s'avère donc efficace pour capter leur attention (Truyong et al., 2025).

Enfin, concernant l'impact des plateformes de médias sociaux sur les habitudes alimentaires de la génération Z, notons que les membres de la génération Z recherchent toujours les nouveaux produits, ingrédients et restaurants qui suscitent une « bonne impression » (Ali et al., 2025 et Masood et al., 2025). Cette attente les pousse à privilégier des sources alimentaires fiables et transparentes et à choisir des marques et des produits répondant à leurs normes attendues (Masood et al., 2025). L'alimentation est devenue, par conséquent, un sujet incontournable sur les réseaux sociaux, servant de plateforme de socialisation où les recommandations alimentaires réunissent des communautés d'abonnés, notamment de la génération Z, autour d'influenceurs (Food Vlogueurs) plus ou moins experts (Ali et al., 2025).

Hypothèses de Recherche

Nos hypothèses découlent à la fois des fondements théoriques mobilisés et de l’actualité brûlante concernant les Food Vlogueurs.

En effet, des études antérieures sur *la crédibilité de la source* (Food Vlogueurs) ont examiné l'impact des influenceurs sur les consommateurs (Masood et al., 2025 et Bhagat et al., 2025). Le transfert de crédibilité a un effet positif sur les attitudes des consommateurs (Safitri&Komaryatin, 2025 ; Khan, 2023).

En outre, basée sur la recherche de Munnukka, Uusitalo et Toivonen (2016), Chen et Shupei (2019) adoptent, dans leur recherche, une conceptualisation quadridimensionnelle de la crédibilité de la source, incluant la fiabilité, l'expertise, la similarité et l'attractivité.

Les performances des influenceurs sur les réseaux sociaux, telles que leur expertise, leur confiance, leur sympathie et leur similarité, ont un effet positif sur la crédibilité de la source (Masood et al., 2025). Certains auteurs ont évalué l'attitude envers les influenceurs en mesurant l'attitude envers la vidéo et l'attitude envers la marque (Xiao et al., 2018 et Boughroum& Hamadi, 2025).Ainsi, les deux premières hypothèses sont :

- **H1 :** « La crédibilité des Food Vlogueurs impacte positivement l'attitude de la génération Z envers la vidéo. ».
  - **H1a :** « L'expertise des Food Vlogueurs impacte positivement l'attitude de la génération Z envers la vidéo. ».
  - **H1b :** « La fiabilité des Food Vlogueurs impacte positivement l'attitude de la génération Z envers la vidéo. ».
  - **H1c :** « L'attractivité physique des Food Vlogueurs impacte positivement l'attitude de la génération Z envers la vidéo. ».
  - **H1d :** « La similarité entre les Food Vlogueurs et la génération Z impacte positivement l'attitude de cette génération envers la vidéo. ».
- **H2 :** « La crédibilité des Food Vlogueurs impacte positivement l'attitude de la génération Z envers la marque. ».
  - **H2a :** « L'expertise des Food Vlogueurs impacte positivement l'attitude de la génération Z envers la marque. ».
  - **H2b :** « La fiabilité des Food Vlogueurs impacte positivement l'attitude de la génération Z envers la marque. ».
  - **H2c :** « L'attractivité physique des Food Vlogueurs impacte positivement l'attitude de la génération Z envers la marque. ».
  - **H2d** : « La similarité entre les Food Vlogueurs et la génération Z impacte positivement l'attitude de cette génération envers la marque. ».

Quant au *contenu publicitaire généré* par les Food vlogueurs, nous avons relevé que les perceptions des consommateurs concernant la valeur publicitaire, influencent leur attitude envers la publicité en ligne (Bhagat et al., 2025).

Les campagnes publicitaires menées par des influenceurs sur les réseaux sociaux ont amélioré l'attitude des clients envers un produit (Kim et al., 2021).

En effet, les individus exposés aux publications partagées par des influenceurs sont influencés par leur attitude envers les vidéos et les marques.

En outre, dans la littérature, l'informativité et le divertissement sont les deux dimensions les plus robustes des croyances des consommateurs vis-à-vis de la publicité.

Il s'ensuit que le contenu produit par les influenceurs possède à la fois une valeur informative et divertissante.

Ainsi, la troisième hypothèse est :

- **H3 :** « Le contenu publicitaire des Food Vlogueurs impacte positivement l'attitude de la génération Z. ».
  - **H3a :** « La valeur informative partagée par les Food Vlogueurs impacte positivement l'attitude de la génération Z envers la vidéo. ».
  - **H3b :** « La valeur de divertissement partagée par les Food Vlogueurs impacte positivement l'attitude de la génération Z envers la vidéo. ».
  - **H3c :** « La valeur informative partagée par les Food Vlogueurs impacte positivement l'attitude de la génération Z envers la marque. ».
  - **H3d :** « La valeur de divertissement partagée par les Food Vlogueurs impacte positivement l'attitude de la génération Z envers la marque. ».

Par ailleurs, dans le *commerce social*, les plateformes en ligne servent de lieu de connexion pour les utilisateurs, où ils peuvent interagir avec d'autres en recommandant des produits utiles ou en partageant leurs expériences (Chen&Shen, 2015).

Dans la littérature, une corrélation significative entre l'intention comportementale et le

comportement réel, a été mise en évidence. Par ailleurs, les intentions d'achat et de partage social servent de mesures du commerce social (Liang et al., 2011).

De plus, il a été observé que *l'attitude* des spectateurs envers les influenceurs et leur *attitude envers la marque* ont un impact positif sur leur intention d'achat chez les utilisateurs des médias sociaux (Chetioui et al., 2020 ; Bhagat et al., 2025 et Masood et al., 2025).

En outre, l'attitude envers un produit influe de manière significative sur le partage de contenu et l'intention d'achat (Chen&Shen, 2015).

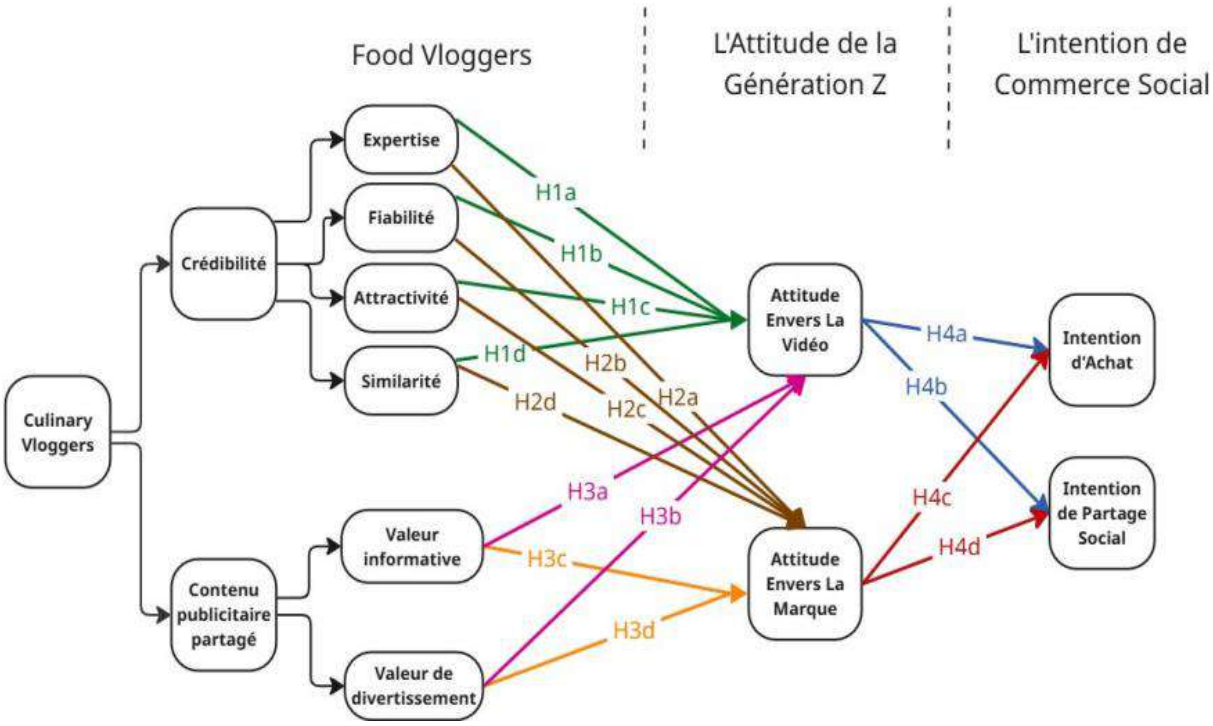
Ainsi, la quatrième hypothèse est :

- **H4 :** « L'attitude de la génération Z impacte positivement leur intention de commerce social. ».
  - **H4a :** « L'attitude de la génération Z envers la vidéo impacte positivement leur intention d'achat. ».
  - **H4b :** « L'attitude de la génération Z envers la vidéo impacte positivement leur intention de partage social. ».
  - **H4c :** « L'attitude de la génération Z envers la marque impacte positivement leur intention d'achat. ».
  - **H4d :** « L'attitude de la génération Z envers la marque impacte positivement leur intention de partage social. ».

Modèle Conceptuel

À partir de la revue de littérature et des hypothèses formulées précédemment, nous avons élaboré le modèle conceptuel suivant :

Figure 1
Modèle conceptuel



Cadre Opératoire : Variables et Échelles de Mesures

Le tableau ci-dessous synthétise les différentes échelles utilisées et variables :

Tableau 1
Validité et fiabilité des échelles de mesures

Variable	Dimensions	Auteurs principaux	Items
Crédibilité	Quatre dimensions : (1) Expertise *(4 items)* ; (2) Fiabilité *(4 items)* ; (3) Attractivité *(4 items)* ; (4) Similarité *(3 items)*	(Munnukka, Uusitalo&Toivonen, 2016 ; Chen &Shupei, 2019)	15
Valeur publicitaire	Deux dimensions : (1) La valeur informative *(5 items)* ; (2) La valeur de divertissement *(5 items)*	(Chen &Shupei, 2019 ; Voss et al., 2003)	10
Attitude de la génération Z	Deux dimensions : (1) L'attitude envers la vidéo *(4 items)* ; (2) L'attitude envers la marque *(4 items)*	(Xiao et al., 2018 ; Voss et al., 2003 ; Singh & Spears, 2004)	8
Intention de commerce social	Deux dimensions : (1) L'intention d'achat *(3 items)* ; (2) L'intention de partage social *(3 items)*	(Chen & Shen, 2015 ; Liang et al., 2011)	6

Méthodologie de Recherche

Nous avons adopté une étude quantitative menée auprès d'un échantillon de 237

utilisateurs des réseaux sociaux de la génération Z Tunisienne. Le questionnaire a été administré en ligne, après avoir été prétesté auprès de 15 répondants.

Les réponses recueillies testent empiriquement le modèle conceptuel à l'aide d'une analyse de cheminement, et du logiciel SPSS.

Après une phase de préparation des données (vérification de la normalité, fiabilité et cohérence des réponses), une analyse descriptive exploratoire a été effectuée afin de présenter les principales caractéristiques de l'échantillon

Par la suite, des analyses de fiabilité (Alpha de Cronbach) ont été réalisées pour évaluer la cohérence interne des échelles de mesure utilisées et d'y appliquer des purifications.

À travers l'analyse factorielle exploratoire, nous avons également réalisé le test de sphéricité de Bartlett et le test de Kaiser- Meyer-Olkin (KMO).

Enfin, à l'aide du logiciel AMOS, des analyses factorielles confirmatoires – par des tests d'ajustements, une vérification de la fiabilité de chaque construit et la validité convergente – ont été menées pour tester les corrélations entre les différentes variables du modèle de recherche et évaluer la pertinence des hypothèses formulées à l'aide des équations structurelles.

Résultats

Tout d'abord, l'analyse descriptive de notre échantillon confirme que ce dernier corresponde bien à la cible de l'étude : Génération Z, très connectée sur les réseaux sociaux.

Dans ce qui suit, nous présenterons les différents résultats issus de l'analyse factorielle exploratoire et confirmatoire des données que nous avons collectées.

Analyse Factorielle Exploratoire (AFE)

Nous avons réalisé des ACP sur les échelles de mesures utilisées dans notre étude dans le but d'évaluer leurs fiabilités et d'appliquer d'éventuelles purifications des échelles. Le tableau, ci-dessous, synthétise les principaux résultats obtenus :

Tableau 2

Résultats de l'analyse factorielle exploratoire

Variable	Dimensions	Indice KMO	Test de sphéricité de Bartlett	% de variance expliquée	Alpha de Cronbach	Interprétation
Crédibilité des Food Vlogueurs	Expertise	0,872	0,000	88,397	0,956	- Aucun item n'est supprimé - L'analyse factorielle est pertinente - La fiabilité des composantes est confirmée
	Fiabilité	0,756	0,000	87,36	0,927	- L'item 2 (/4) est supprimé - La significativité des corrélations entre les variables est confirmée - La fiabilité de l'échelle de mesure est confirmée
	Attractivité	0,874	0,000	90,254	0,964	- Aucun item n'est supprimé - L'analyse factorielle est pertinente - La fiabilité des composantes est confirmée
	Similarité	0,781	0,000	92,695	0,960	- Aucun item n'est supprimé - L'analyse factorielle est pertinente - La fiabilité de l'échelle de mesure est confirmée
Contenu publicitaire partagé	Valeur informative	0,884	0,000	75,998	0,919	- Aucun item n'est supprimé - L'analyse factorielle est pertinente - La fiabilité des composantes est confirmée
	Valeur de divertissement	0,825	0,000	77,998	0,905	- L'item 4 (/5) est supprimé - La significativité des corrélations entre les variables est confirmée - La fiabilité de l'échelle de mesure est confirmée
Attitude de la génération Z	Attitude envers la vidéo	0,859	0,000	87,321	0,951	- Aucun item n'est supprimé - L'analyse factorielle est pertinente - La fiabilité de l'échelle de mesure est confirmée
	Attitude envers la marque	0,743	0,000	86,776	0,924	- L'item 3 (/4) est supprimé - La significativité des corrélations entre les variables est confirmée - La fiabilité de l'échelle de mesure est confirmée
Intention de commerce social	Intention d'achat	0,735	0,000	85,440	0,914	- Aucun item n'est supprimé - L'analyse factorielle est pertinente - La fiabilité des composantes est confirmée
	Intention de partage social	0,745	0,000	91,379	0,953	- Aucun item n'est supprimé - L'analyse factorielle est pertinente - La fiabilité de l'échelle de mesure est confirmée

Analyse Factorielle Confirmatoire (AFC)

L'objectif des analyses confirmatoires dans le cadre de notre recherche est de valider les échelles de mesure des variables relationnelles en identifiant les relations de cause à effet entre ces variables, ce qui nous permettra de tester notre modèle causal.

Le tableau, ci-dessous, synthétise les principaux résultats issus de l'analyse factorielle confirmatoire :

Tableau 3

Résultats de l'analyse factorielle confirmatoire

Variable	Dimensions	Chi2 /ddl	GFI	AGFI	PMR	RMSEA	NFI	CFI	Interprétation
Crédibilité des Food	Expertise	1,471	0,994	0,968	0,008	0,045	0,997	0,999	- Le modèle de mesure présente un bon ajustement - Contributions fortes et significatives associées à

Vlogueurs	Fiabilité	1,614	0,995	0,973	0,041	0,051	0,997	0,999	chacun des indicateurs de mesure de la valeur - L'examen de la normalité des données montre que les conditions d'asymétrie et d'aplatissement des variables observées ont été respectées - Les conditions de multinormalité n'ont pas été respectées et ce, pour toutes les variables étudiées. En effet, le coefficient de Mardia donne une valeur supérieure à |3| pour tous les tests (M). Par conséquent, la procédure de Bootstrap (N=200) a été appliquée à toutes les variables étudiées afin de vérifier la robustesse des coefficients estimés et de faire face à la violation de la multinormalité des données
	Attractivité	1,640	0,993	0,966	0,005	0,052	0,997	0,999	
	Similarité	2,019	0,994	0,966	0,031	0,066	0,997	0,999	
Contenu publicitaire partagé	Valeur informative	2,076	0,983	0,950	0,015	0,068	0,989	0,994	
	Valeur de divertissement	1,682	0,993	0,966	0,013	0,054	0,995	0,998	
Attitude de la génération Z	Attitude envers la vidéo	2,220	0,991	0,954	0,010	0,072	0,996	0,998	
	Attitude envers la marque	3,808	0,989	0,937	0,081	0,093	0,993	0,995	
Intention de commerce social	Intention d'achat	3,543	0,990	0,941	0,053	0,094	0,993	0,995	
	Intention de partage social	2,773	0,992	0,954	0,060	0,087	0,997	0,998	

Après avoir évalué la qualité d'ajustement du modèle de mesure des variables et confirmé la stabilité de ses chargements, il est essentiel de procéder à une vérification de leur fiabilité et de leur validité à un niveau confirmatoire.

Le Modèle de Mesure Global

La Validation du Modèle de Mesure Global

Le recours à l'analyse confirmatoire permet d'évaluer la fiabilité (Rhô de Jöreskog (ρ)) et la validité convergente (Rhô de validité convergente) du modèle de mesure global, comme l'indique le tableau ci-dessous :

Tableau 4

Résultats de la fiabilité et validité convergente du modèle de mesure global

Variable	Dimensions	Rhô de Jöreskog	Rhô de validité convergente	Interprétation
Crédibilité des Food Vlogueurs	Expertise	0,959	0,853	➔ Pour toutes les variables étudiées : - Toutes les valeurs mesurées de l'indice Rhô de Jöreskog (ρ), dépassent le seuil de 0,7. Les valeurs sont donc
	Fiabilité	0,927	0,809	
	Attractivité	0,963	0,867	
Contenu	Valeur			

publicitaire partagé	informative	0,923	0,708	satisfaisantes et le modèle global est fiable. ➔ Également, pour toutes les variables étudiées : - Toutes les valeurs mesurées de l'indice Rhô de validité convergente dépassent le seuil de 0,6, ce qui confirme la validité de la structure factorielle au niveau du second ordre.
	Valeur de divertissement	0,909	0,717	
Attitude de la génération Z	Attitude envers la vidéo	0,924	0,755	
	Attitude envers la marque	0,937	0,788	
Intention de commerce social	Intention d'achat	0,917	0,786	
	Intention de partage social	0,953	0,872	

La Validité Discriminante du Modèle

Vérifier les validités discriminantes implique de s'assurer que la racine carrée du rhô de la validité convergente de chaque construit soit supérieure aux corrélations qu'il partage avec les autres construits ; comme le synthétise le tableau 5 ci-dessous :

Tableau 5

Résultats de la validité discriminante du modèle global

Variables	Valeur informative	Valeur de divertissement	Expertise	Fiabilité	Attitude envers la vidéo	Attitude envers la marque	Intention d'achat	Intention de partage social	Attractivité	Similarité
Valeur informative	0,841									
Valeur de divertissement	0,810	0,847								
Expertise	0,665	0,693	0,924							
Fiabilité	0,676	0,692	0,815	0,899						
Attitude envers la vidéo	0,766	0,799	0,675	0,661	0,869					
Attitude envers la marque	0,729	0,751	0,674	0,681	0,842	0,888				
Intention d'achat	0,682	0,720	0,738	0,788	0,755	0,701	0,887			
Intention de partage social	0,657	0,719	0,591	0,583	0,748	0,697	0,623	0,934		
Attractivité	0,769	0,790	0,743	0,751	0,782	0,747	0,753	0,694	0,931	

Similarité	0,723	0,691	0,671	0,704	0,730	0,688	0,768	0,669	0,729	0,909

- Interprétation : toutes les variables du modèle ont une validité discriminante confirmée.

Validation du Modèle Conceptuel et Test des Hypothèses

Évaluation du Modèle de Mesure Global

Le tableau 6, ci-dessous, synthétise les mesures issues de l'ajustement du modèle de mesure global ainsi que l'interprétation des résultats :

Tableau 6
Résultats de l'ajustement du modèle de mesure global

Indices	Chi -2 /ddl	GFI	AGFI	RMR	RMSEA	NFI	CFI	Interprétation
Valeurs	2,636	0,866	0,831	0,076	0,083	0,903	0,915	- Les valeurs sont satisfaisantes. - Le modèle semble correspondre aux données empiriques de cette étude.

Vérification des Hypothèses de Recherche

En utilisant le logiciel AMOS, nous avons d'abord présenté notre modèle sous la forme d'un diagramme de causalité montrant les relations directes entre les variables. Ensuite, pour évaluer la présence des liens dans le modèle structurel, il est essentiel de vérifier leur significativité en utilisant une valeur du test de Student (C.R) supérieure à 1,96 et une valeur de p inférieure à 0,05. Enfin, il est important d'examiner le signe du coefficient de contribution factorielle standardisée pour déterminer la direction du lien. Le tableau 7, ci-dessous, présente tous ces résultats ainsi que la vérification des hypothèses de recherche :

Tableau 7
Résultats des liens/ hypothèses entre les variables de la recherche

Hypothèses	Coefficient structurel standardisé	t de Student CR	P	Vérification des hypothèses
H1a : L'expérience des Food Vlogueurs impacte positivement l'attitude de la génération Z envers la vidéo	-0,006	-0,090	0,928	**Rejetée**
H1b : La fiabilité des Food Vlogueurs impacte positivement l'attitude de la génération Z envers la vidéo	-0,021	-0,274	0,784	**Rejetée**
H1c : L'attractivité des Food Vlogueurs impacte positivement l'attitude de la génération Z envers la vidéo	0,231	2,877	0,004	Acceptée

H1d : La similarité des Food Vlogueurs impacte positivement l'attitude de la génération Z envers la vidéo	0,166	2,426	0,015	Acceptée
H2a : L'expérience des Food Vlogueurs impacte positivement l'attitude de la génération Z envers la marque	0,121	1,587	0,112	**Rejetée**
H2b : La fiabilité des Food Vlogueurs impacte positivement l'attitude de la génération Z envers la marque	0,168	2,042	0,041	Acceptée
H2c : L'attractivité des Food Vlogueurs impacte positivement l'attitude de la génération Z envers la marque	0,335	3,884	***	Acceptée
H2d : La similarité des Food Vlogueurs impacte positivement l'attitude de la génération Z envers la marque	0,060	0,827	0,408	**Rejetée**
H3a : La valeur informative partagée par les Food Vlogueurs impacte positivement l'attitude de la génération Z envers la vidéo	0,187	2,272	0,023	Acceptée
H3b : La valeur de divertissement partagée par les Food Vlogueurs impacte positivement l'attitude de la génération Zenvers la vidéo	0,380	4,011	***	Acceptée
H3c : La valeur informative partagée par les Food Vlogueurs impacte positivement l'attitude de la génération Z envers la marque	0,055	0,634	0,526	**Rejetée**
H3d : La valeur de divertissement partagée par les Food Vlogueurs impacte positivement l'attitude de la génération Z envers la marque	0,204	2,094	0,036	Acceptée
H4a : L'attitude de la génération Z envers la vidéo impacte positivement leur intention d'achat social	0,386	5,485	***	Acceptée
H4b : L'attitude de la génération Z envers la vidéo impacte positivement leur intention de partage social	0,502	7,128	***	Acceptée
H4c : L'attitude de la génération Z envers la marque impacte positivement leur intention d'achat social	0,450	6,317	***	Acceptée
H4d : L'attitude de la génération Z envers la marque impacte positivement leur intention de partage social	0,296	4,212	***	Acceptée

Discussion

L'objectif de ce travail est d'évaluer l'effet de la crédibilité des foodsvloggers et du contenu partagé sur les réseaux sociaux, sur les attitudes et l'intention de commerce social des consommateurs Tunisiens de la génération Z.

Le contenu informatif, partagé par les Food Vlogueurs sur les réseaux sociaux, était en corrélation négative avec l'attitude de la génération Z Tunisienne envers les marques, tandis que leur attitude envers les vidéos était positivement associée. De même, le contenu de divertissement était positivement lié à l'attitude de la génération Z Tunisienne envers les vidéos et les marques.

De plus, l'attractivité physique des vlogueurs culinaires joue un rôle important pour cette génération, influençant à la fois leur perception des marques et des vidéos. En revanche, l'expertise des vloggers n'a pas d'influence significative sur l'attitude de la génération Z envers eux. De même, la fiabilité des vloggers n'a aucun impact perceptible sur l'attitude de cette

génération à l'égard des vidéos.

Contrairement aux recherches antérieures (Xiao et al., 2018 et Kim, et al., 2021), cette étude révèle que la valeur informative n'a pas un impact significatif sur les attitudes de la génération Z envers la marque promue. Cependant, elle met en évidence une préférence de la génération Z pour des contenus qui ajoutent de la valeur viades éléments informatifs en ce qui concerne les vidéos et via des éléments divertissants en ce qui concerne les vidéos et les marques promues.

Par conséquent, les vlogueurs culinaires devraient incorporer des récits, de l'humour et d'autres éléments captivants pour maintenir l'attention de la génération Z et rendre leur contenu attrayant et divertissant. Ainsi, les vloggers culinaires peuvent renforcer leur relation avec leur audience de la génération Z.

Les résultats de l'étude montrent que les attitudes de la génération Z envers le contenu vidéo sont influencées par l'apparence physique des vlogueurs culinaires, ce qui est en accord avec des recherches antérieures (Xiao et al., 2018).Néanmoins, les attitudes de la génération Z à l'égard du contenu vidéo n'étaient pas corrélées à l'expertise, à la fiabilité, ni à la similitude des Food Vlogueurs avec ce public.

Cette étude a démontré le rôle essentiel que jouent les attitudes positives envers le contenu et les marques associées dans la formation des intentions de comportements de commerce social de la génération Z, un résultat en accord avec des recherches antérieures (Chen &Shen, 2015 ; Sheikh et al., 2019 ; Chetioui et al., 2020).

Les conclusions indiquent que les vlogueurs culinaires ont la capacité d'augmenter leur potentiel de vente et leurs niveaux d'engagement en produisant un contenu de haute qualité qui résonne avec leur audience et influence favorablement leurs attitudes envers le contenu et la marque promue. Ainsi, ils peuvent accroître la probabilité que la génération Z adopte des

comportements de commerce social.

Conclusion

Notre recherche a exploré l'impact de la crédibilité des Food Vlogueurs et de leur contenu partagé sur les réseaux sociaux, sur les attitudes et l'intention de commerce social de la génération Z Tunisienne.

En s’appuyant sur trois théories,et des fondements théoriques relatifs au Marketing d’influence, nous avons développé notre modèle conceptuel de recherche. Nos quatre grandes hypothèses ont été testées via une enquête par questionnaire administré en ligne auprès de 237 utilisateurs des réseaux sociaux et de la génération Z Tunisienne.

Contributions Théoriques de la Recherche

Cette recherche représente une contribution significative à la littérature académique à plusieurs niveaux. Elle mobilise trois théories distinctes afin de mieux approfondir la compréhension de l'évolution continue des comportements observés chez les Food Vlogueurs. Cette approche théorique permet d'explorer de manière approfondie les interactions complexes entre ces vlogueurs, leur audience et l'impact de leurs contenus sur les habitudes de consommation. Ensuite, cette étude croise les Food Vlogueurs à un concept sous-exploité dans la littérature : l'intention de commerce social. Ce concept nous parait plus adapté au contexte digital, qui tend à changer toute la culture culinaire.

Contributions Managériales de la Recherche

Cette étude offre des perspectives précieuses pour les entreprises du secteur alimentaire en leur permettant d'optimiser leur stratégie d'influence, de mieux cibler la génération Z Tunisienne, d'améliorer l'expérience client, de renforcer leur crédibilité et de stimuler l'innovation produit et la communication. Ces contributions managériales peuvent avoir un

impact significatif sur la performance et la compétitivité pour les marques alimentaires et les entreprises désireuses de cibler de manière efficace ce segment de marché spécifique.

Limites et Voies Futures de Recherche

Comme toute recherche, ce travail présente certaines limites qui ouvrent la voie à des pistes de recherche futures intéressantes. Une limite de cette étude réside dans sa focalisation sur la génération Z au détriment des autres générations (X, Y, Alpha). Une recherche future pourrait combiner ces trois générations dans une seule étude, permettant ainsi une analyse comparative et une généralisation plus large des résultats.

Une autre piste de recherche prometteuse pour le contexte tunisien consisterait à reproduire cette étude en mettant l'accent sur le potentiel du tourisme alimentaire stimulé par les contenus des Food Vlogueurs.

En outre, cette étude quantitative nécessiterait une adaptation continue face aux évolutions numériques, notamment l'intelligence artificielle. Une recherche future pourrait comparer : Food Vlogueurs (humains) vs influenceurs culinaires virtuels.

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LES CREATEURS DE CONTENU SOCIAL ET LA CONSCIENCE DE SANTE A L'ERE DES TRANSFORMATIONS NUMERIQUES : UNE ETUDE EXPLORATOIRE

CREATEURS DE CONTENU SOCIAL ET LA CONSCIENCE DE SANTE A L'ERE DES TRANSFORMATIONS NUMERIQUES : UNE ETUDE EXPLORATOIRE

Résumé: À l'ère des perturbations numériques et sociales, les réseaux sociaux sont devenus un canal majeur de diffusion des messages de santé, où émergent de nouveaux acteurs non institutionnels : les créateurs de contenu à vocation sociale, dont la mission est avant tout de sensibiliser plutôt que de promouvoir des produits. Cette communication vise à analyser le rôle des créateurs de contenu à vocation social dans la conscience de santé des utilisateurs. À cet effet, nous avons étudié les caractéristiques des créateurs ainsi que celles de leurs contenus. Une étude qualitative a été menée à partir d'entretiens semi directifs réalisés auprès de 25 utilisateurs des réseaux sociaux. Les résultats ont été structurés selon le modèle ELM (route centrale, route périphérique). Les caractéristiques des influenceurs (crédibilité ; expertise ; altruisme ; spontanéité et similarité avec la cible) et de leurs contenus (informatif ; inspirant/motivant et créatif/original) apportent de nouveaux éclairages sur les déterminants de leur pouvoir à influencer l'adoption de comportements sains.

Mots clés: Plateformes sociales ; Créateurs de contenus sociaux ; Santé ; Comportements sains.

SOCIAL CONTENT CREATORS AND HEALTH CONSCIOUSNESS IN THE AGE OF DIGITAL TRANSFORMATIONS: AN EXPLORATORY STUDY

Abstract: Social In the era of digital and social disruptions, social media has become a major channel for disseminating health-related messages, where new non-institutional actors are emerging: socially oriented content creators, whose primary mission is to raise awareness rather than promote products. This communication aims to analyze the role of these social content creators in shaping users' health consciousness. To do so, we examined both the characteristics of the creators and those of their content. A qualitative study was conducted through semi-structured interviews with 25 social media users. The results were organized according to the ELM model (central route, peripheral route). The characteristics of the creators (credibility, expertise, altruism, spontaneity, and similarity with the target audience) and those of their content (informative, inspiring/motivational, and creative/original) provide new insights into the determinants of their ability to influence the adoption of healthy behaviours.

Keywords: Social platforms; Social content creators; Health; Healthy behaviors.

CREATEURS DE CONTENU SOCIAL ET CONSCIENCE DE SANTE A L'ERE DES TRANSFORMATIONS NUMERIQUES : UNE ETUDE EXPLORATOIRE

Introduction

Jamais auparavant un outil de communication n'avait autant façonné nos vies que les réseaux sociaux au XXIe siècle. En 2025, il est estimé que ces plateformes compteront 5,42 milliards d'utilisateurs actifs, illustrant leur influence croissante à l'échelle mondiale (Statista, 2025). Bien qu'ils constituent un levier majeur du marketing moderne (Kaplan & Haenlein, 2010),de nombreuses recherches ont mis en évidence leurs dérives : le trolling (Buckels, Trapnell, & Paulhus, 2014 ; Hardaker, 2010), l'harcèlement en ligne (O'Keeffe & Clarke-Pearson, 2011), les fake news (Allcott & Gentzkow, 2017 ; Commission européenne, 2018) et l'usage addictif des médias sociaux (Blackwel et al, 2017), générant la peur de manquer une expérience sociale «FOMO» (Przybylski, Murayama, Dehaan, & Gladwell, 2013). Ce phénomène est associé à des troubles du sommeil et à des problèmes d'anxiété pouvant entraîner des symptômes dépressifs (Levenson et al., 2016). Pellegrino et al. (2022) soulignent que les contenus diffusés sur les médias sociaux encouragent souvent le consumérisme et renforcent les valeurs matérialistes des utilisateurs, notamment à travers des discours et des mises en scène qui idéalisent les produits (De Veirman & Hudders, 2020). Par ailleurs, lorsque les influenceurs diffusent de la mésinformation sur des sujets liés à la prévention et au soin, cela peut avoir des impacts négatifs sur leurs abonnés (Hudders & Lou, 2023), les conduisant potentiellement à adopter des pratiques de vie malsaines (Suarez-Lledo & Alvarez-Galvez, 2021 ; Wang et al., 2019).

Parallèlement à ces dérives, émerge une nouvelle catégorie: les créateurs de contenu à vocation sociale, qui se distinguent des influenceurs commerciaux par l'absence de sponsoring et de promotion de produits ou services. Leurs contenus incluent généralement des histoires personnelles, des conseils pratiques ou des moments de vie, et mettent l'accent sur l'authenticité et l'expérience vécue (Zarei et al., 2020).La bonne qualité de message, tend à devenir plus organique, pertinent et moins commercial, favorisant ainsi une interaction plus authentique avec le public et contribuant potentiellement à son bien-être (Voorveld, 2019). En France, le nombre de médecins influenceurs ne cesse de se développer (Oregi et al., 2023) en prenant l'exemple de Major Mouvement Kinésithérapeute, auteur et enseignant qui est devenu la première personnalité de santé web en France ; aussi Kayla Itsines, suivie par 15,6 millions d'abonnés en 2025, partage des contenus encourageant des choix alimentaires sains. Ce mouvement reste une question peu explorée, offrant un terrain fertile pour de nouvelles recherches : Comment ces créateurs de contenu à vocation social (non commercial) peuvent influencer la conscience de santé des utilisateurs ? Pour répondre à cette question, il est indispensable d'étudier les caractéristiques propres aux créateurs ainsi qu'à leurs messages, et d'étudier comment ces éléments contribuent à adopter des comportements sains.

Dans la première partie, nous présenterons une présentation théorique des créateurs de contenus à vocation social et les théories utilisés. Dans la deuxième partie, nous décrirons la méthodologie de recherche utilisée. La troisième partie sera consacrée à la présentation des résultats et discussion. Enfin, nous conclurons en présentant les

apports théoriques et managériaux de cette étude, ainsi que ses limites et ses voies futures.

Revue de la littérature

Les créateurs de contenus à vocation sociale (non commercial): Ces influenceurs non commerciaux, également qualifiés de leaders d'opinion clés, ne considèrent pas l'activité d'influence comme une profession : elle constitue plutôt une extension de leur notoriété et de leur prestige réels. Ils peuvent être des politiciens, des universitaires, des journalistes ou des commentateurs (Geyser, 2023). Parmi eux figurent les influenceurs de santé promeuvent la santé et le fitness comme domaine d'expertise (Pilgrim & Bohnet-Joschko, 2019). En outre, les experts en santé sont des professionnels disposant de connaissances et d'une formation avancées dans les domaines liés à la santé, attestées par une formation dans des institutions accréditées; il peut s'agir par exemple de médecins, nutritionnistes ou de psychothérapeutes (Kaňková, Binder, & Matthes, 2024) qui interagissent avec les abonnés pour répondre à leurs préoccupations personnelles en matière de santé, diffuser des connaissances et les aider dans leurs décisions de mode de vie (Smailhodzic et al., 2021).Une autre catégorie apparait est celle des patients-influenceurs (E-patients) qui jouent un rôle important dans le partage d'éclairages utiles et de formes de soutien social (McCosker, 2018 ; Namkoong, Shah & Gustafson, 2017 ; Tian et al., 2017) en prenant l'exemple de Dave de Bronkart ou encore Jan Geissler qui ont pu surmonter leur cancer grâce aux informations trouvées en ligne et aux liens établis avec d'autres patients. Ces échanges leur ont permis de découvrir de nouveaux traitements ou des essais cliniques adaptés à leur situation. En outre, il a été constaté que les influenceurs encouragent les consommateurs à acheter davantage(De Veirman et al., 2017)en revanche les dé-influenceurs encouragent vers des choix plus réfléchis en diffusant un contenu «anti-haul» qui critique ou déconseille certains achats(García-de-Frutos & Estrella-Ramón, 2021 ; Wood, 2021).Ils préconisent une consommation consciente et durable (Vladimirova et al., 2024),en promouvant le minimalisme, et en remettant en question une société de consommation compulsive(García-de-Frutosj & Estrella-Ramón, 2021 ; Haines et al., 2023).

La conscience de santé et l'adoption des comportements sains : La conscience de santé évalue le degré de disposition à entreprendre des actions favorables à la santé (Oude Ophuis, 1989 ; Schifferstein et Oude Ophuis, 1998) et constitue un construit plus large reflétant la volonté d'une personne d'agir pour sa propre santé. Dans le contexte des réseaux sociaux, cette disposition peut être activée ou renforcée par l'exposition à des contenus à vocation sociale en santé. En effet, les créateurs de contenu constituent des sources d'information et d'influence susceptibles de stimuler un processus de réflexion, d'éveil ou d'implication personnelle vis-à-vis des enjeux sanitaires. L'influence d'un créateur de contenu repose sur la combinaison de caractéristiques spécifiques, incluant à la fois ses attributs personnels et ceux liés au contenu qu'il partage (Ki et al., 2020). De nombreuses études appliquent le modèle ELM (Petty et al., 1981 ; Petty et Cacioppo, 1986) à divers contextes de santé et du marketing d'influence social , en considérant à la fois les routes centrale et périphérique (Sui et Zhang, 2021 ; Wu, Q. L., 2025 ; Abbes et al., 2023 ; Elsantil et al., 2025 ; Chang et al., 2021 ; Hocevar et al., 2017).En effet, Elsantil et al. (2025) montrent que l'authenticité et la crédibilité influencent le comportement des consommateurs, confirmant l'application du modèle

ELM au phénomène de dé-influence. L'étude souligne également que l'altruisme constitue une dimension distinctive des dé-influenceurs, contrairement aux influenceurs traditionnels centrés sur la promotion de produits. Une autre étude menée par Abbes et al. (2023) indiquent que les caractéristiques du message (publication professionnelle vs personnelle ; contenu choquant vs bienséant) et celles du médecin (attractivité physique, personnalité, notoriété) constituent les déterminants clés de la crédibilité des messages médicaux sur les réseaux sociaux et que la majorité des répondants accordent une importance particulière aux déterminants centraux, ce qui corrobore les apports du modèle ELM dans l'évaluation des avis en ligne (Soulard, 2015) et plus particulièrement dans le domaine de la santé et de la médecine en ligne (Chang et al., 2021 ; Hocevar et al., 2017). De plus, l'étude de Sui et Zhang (2021) souligne que la qualité du contenu (pertinence, clarté, utilité) et la crédibilité de la source (expertise, autorité) influencent la perception de fiabilité des réfutations de la désinformation en santé. Dans le cadre de cette recherche, nous mobilisons donc le modèle ELM, qui demeure la référence pour identifier les caractéristiques des influenceurs et de leurs contenus susceptibles d'influencer la conscience de santé des utilisateurs des réseaux sociaux.

Méthodologie

Dans le cadre de cette recherche, nous avons adopté une démarche qualitative exploratoire afin de comprendre comment les créateurs de contenu social influencent la conscience de santé des utilisateurs de réseaux sociaux. Pour ce faire, 25 entretiens individuels semi-directifs ont été réalisés en face-à-face auprès d'utilisateurs âgés de 18 à 66 ans, issus de profils socioprofessionnels variés (Voir tableau 1).Les entretiens, d'une durée de 40 à 60 minutes, ont été guidés par quatre thèmes : (1) les motivations d'usage des réseaux sociaux,(2) les types de contenus suivis, (3)les caractéristiques des contenus influençant la conscience de santé et (4)les caractéristiques des créateurs perçues comme déterminantes. L'analyse a été conduite à l'aide d'une analyse de contenu thématique manuelle en 3 étapes successives : La pré-analyse; l'exploitation du matériel et l'interprétation des résultats (Bardin, 1977 ; Wanlin et Philippe, 2007). Deux niveaux d'analyse ont été mobilisés: une analyse horizontale(Roche, 2009) par thèmes et une analyse verticale (Bardin, 1977 ; Roche, 2009) par participant. Cette démarche a permis de faire émerger les caractéristiques essentielles des créateurs de contenu et des contenus.

Résultats et discussion

Les entretiens menés ont permis d'identifier 6 caractéristiques clés des créateurs de contenu social (Voir tableau 3) : la crédibilité; l'authenticité; l'altruisme ; l'expertise ; la spontanéité et la similarité avec la cible. Parallèlement, 3 caractéristiques du contenu partagé ont été relevées : contenu inspirant/motivant, contenu informatif et contenu créatif/original (Voir tableau 2). Ces traits des créateurs et de leurs contenus s'inscrivent dans les deux routes du modèle ELM (Petty & Cacioppo, 1986).De plus, nous avons pu constater que les créateurs de contenu social influencent la conscience et les comportements de santé des utilisateurs (Voir tableau 4), conformément à la théorie du comportement planifié (Ajzen, 1991).

Les caractéristiques du contenu (Route centrale)

Contenu inspirant/motivant : Les participants insistent sur le rôle des contenus inspirants, qui encouragent l'action, soutiennent l'amélioration personnelle et renforcent un état d'esprit proactif *«Un contenu très motivant..J'ai appris à écouter mon corps, à reconnaître les signaux du stress, et à adopter une hygiène de vie plus saine ! Ça m'inspire me donne envie d'essayer. C'est comme une petite dose de motivation quotidienne»*(Sabra, 51ans). Cette caractéristique constitue un apport original, car elle n'a pas été explicitement théorisée dans la littérature sur les contenus sociaux.

L'informativité perçue du contenu est un objectif fondamental de la communication, renforçant la valeur perçue du message lui-même (Lee et Hong, 2016). L'examen des propos recueillis révèle que la plupart des répondants accordent une importance considérable à la dimension informative du contenu *«Ce contenu explique le fonctionnement des menstruations et sensibilise aux signes pouvant alerter sur le cancer du col de l'utérus»(*Sihem, 43ans) et ne ressentent pas de gêne lorsque les messages contiennent des informations appropriées et pertinentes (Aitken et al., 2008 ; Martins et al., 2019)*«Avant j'étais très anxieux. Maintenant, je comprends ce que je peux manger, comment réagir en cas d'hypoglycémie, comment gérer mes émotions» (*Nizar, 40ans).

Contenu créatif /original : La créativité renvoie à un contenu rafraîchissant et novateur, évalué selon le degré de divergence et de pertinence (Haberland et Dacin,1992 ;Im et Workman, 2004 ;Till et Baack, 2005). *L'originalité* du contenu renvoie à la capacité à produire un contenu unique et innovant (Thakur et al. 2015). Les répondants expliquent que ce contenu nouveau, inhabituel et innovant sera perçu comme signifiant, utile et précieux, ce qui accroît l'attachement envers les influenceurs et leurs messages (Casaló et al., 2020 ;Kapitan et Silvera, 2016 ; Vrontis et al., 2021) *«J'aime ce type des contenus qui sont différents aux stéréotypes très consommés comme les contenus de vente, de sponsoring, ce qui m'attire, c'est l'originalité et la créativité du contenu qui éveille ma conscience de ma santé morale»*(Ayhem, 35ans). Ces résultats rejoignent ceux de Casaló, Flavián et Ibáñez-Sánchez (2021), montrant l'effet positif de la créativité sur les émotions des internautes.

Les caractéristiques des créateurs de contenu (Route périphérique)

La crédibilité fait référence à « un jugement du récepteur sur la crédibilité d'un communicateur » (O'Keefe, 1990). Les entretiens montrent que la majorité des interviewés indiquent que la crédibilité de créateur influence davantage leurs conscience et, peut conduire à un changement de comportement plus important (Gupta et al., 2021). Selon les répondants cette crédibilité repose sur la transparence, la sincérité et le réalisme *«Ils sont sincères et transparents. Ils parlent de quelque chose de réel, ce qui peut nous aider à avancer !»*(Salsabil, 18ans). Ces résultats confirment les conclusions de Djafarova & Rushworth (2017), qui soulignent que la crédibilité est désormais une nécessité pour les influenceurs, perçus non seulement comme fiables mais aussi sincères dans leurs intentions.

L'authenticité est définie comme « une représentation honnête et non altérée de soi, dépourvue d'intention commerciale excessive, renforçant ainsi la crédibilité perçue » (Djafarova et Trofimenko, 2019). Les témoignages recueillis dans notre étude montrent que les interviewés ont mis en avant l'importance de l'authenticité du créateur de contenu *« Je dirais que ces créateurs-là sont authentiques. Ils ne montrent pas seulement la réussite ou les abdos parfaits, mais aussi les moments difficiles : la fatigue, les blessures, le doute »* (Marwen, 37ans) ; *« L'authenticité…C'est ce qui me touche le plus. On ressent rapidement quand quelqu'un partage par passion ou juste pour la visibilité, une personne authentique gagne ma confiance ! »* (Ibtihel, 31ans).

L'altruisme fait référence à « la manière dont perçoivent le comportement d'autrui, qu'ils considèrent comme motivé par une préoccupation sincère et désintéressée pour les autres » (Eisenberg & Miller, 1987). Les interviewés ont souligné l'importance de cette caractéristique qui se manifeste à travers la volonté d'aide des créateurs de contenu, plutôt que par l'intérêt commercial *«Ils ne nous considéré pas comme des consommateurs..leur objectif est de transmettre l'information, pas de gagner de l'argent»*(Saif, 28ans). Ces résultats rejoignent ceux de Lu et al. (2014), qui montrent que le public s'engage davantage lorsque le contenu provient de personnes perçues comme ayant à cœur ses intérêts. Cette perception renforce la confiance et oriente les processus de décision (Lou & Yuan., 2019).

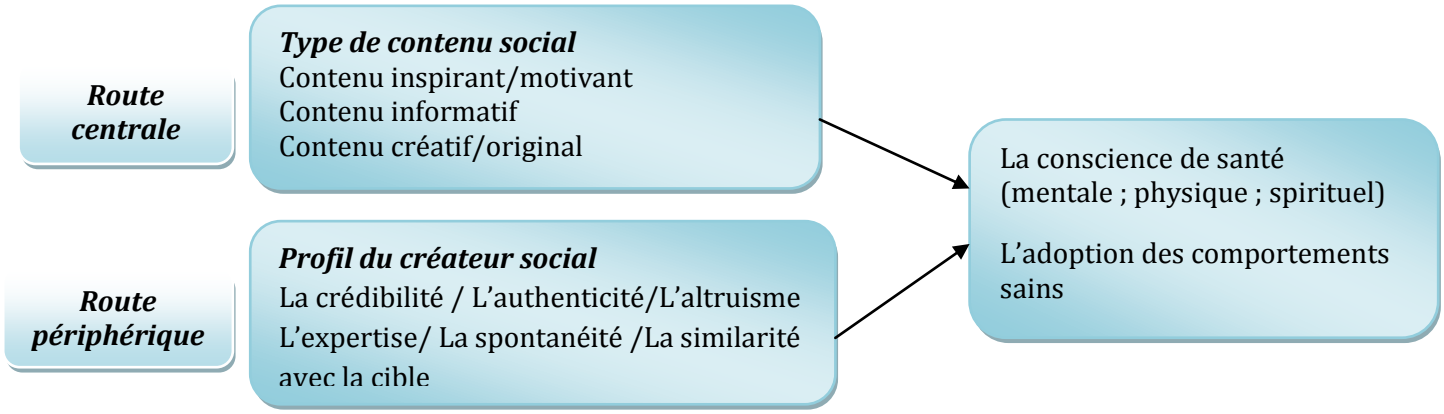
L'expertise renvoie à « la maîtrise d'un domaine d'intérêt, la possession d'une expertise ou même un titre fiable, tel qu'un doctorat, contribuent à définir l'expertise de l'orateur » (Pornpitakpan, 2004) ou « La compétence ou la qualification d'une source, y compris ses connaissances ou ses aptitudes, pour faire certaines affirmations relatives à un certain sujet ou thème » (McCroskey, 1966). Dans le cadre de notre étude, les répondants soulignent que comme l'expertise est une caractéristique primordiale qui permet d'influencer la conscience de santé et que cette expertise, souvent liée à un niveau intellectuel ou à une expérience professionnelle spécifique, confère au créateur une crédibilité scientifique et une légitimité morale dans le traitement des sujets liés à la *«Ils sont des experts du domaine, ils te donnent des informations fiables par exemple Oumaïma Trad a un doctorat en pharmacie, Nourchene est sage-femme, elle a son diplôme »* (Sihem, 43ans). Ce résultat montre que l'expertise est un facteur clé dans les contenus de sensibilisation (Hughes et al., 2019) et prédit également le changement de comportement ainsi que la prise de conscience (Durau et al., 2022).

La similarité avec la cible correspond à « *la ressemblance perçue entre la source d'un message et son récepteur »* (Kim & Park, 2011). Les interviewés expriment que cette similarité joue un rôle déterminant dans l'efficacité et le pouvoir persuasif du contenu (McGuire., 1985) « *Il me ressemble dans sa mentalité et son mode de vie, ce qui me met à l'aise et rend ses messages convaincants pour moi.»(*Chahed, 35ans). Les participants ont montré que cette similarité perçue favorise également la construction de relations parasociales plus solides, un résultat cohérent avec les travaux montrant que la similarité constitue un antécédent majeur des relations parasociales (Sokolova & Kefi, 2020 ; Aw & Chuah, 2021 ; Yuan & Lou, 2020) *«Ils dessinent un monde où je me trouve, je me sens très proche de ce créateur-là. Il vit des choses comme moi.*» (Yara, 27ans).

La spontanéité est largement soulignée par les répondants, qui la jugent importante dans la manière dont les créateurs transmettent leurs messages, en particulier lorsqu'il s'agit de contenus liés à la santé et au bien-être. Cette spontanéité, perçue comme une forme de communication naturelle et sincère, favorise la crédibilité du discours et renforce la connexion émotionnelle avec l'audience *«J'aime leur méthode spontanée pour diffuser une information liée à ma santé* (Saif, 28 ans). La spontanéité en tant que trait distinct du créateur de contenu n'a pas été formellement identifiée dans la littérature. De plus, aucun travail antérieur n'a exploré son impact direct sur la conscience de santé des utilisateurs, ce qui fait de cette observation un apport original de notre étude. Cette caractéristique émerge donc comme un levier inédit permettant de renforcer la crédibilité et l'efficacité des messages préventifs, en rendant le contenu plus attirant.

Les effets des créateurs de contenu social sur la conscience et les comportements de santé des utilisateurs : La majorité des répondants ont une attitude positive envers les créateurs de contenu soulignant leur influence sur leur conscience de santé mentale, physique et spirituelle. Beaucoup évoquent un réel éveil psychologique *«Je me contrôle et j'essaye de gérer mon stress. Ça me fait du bien psychologiquement !»*(Chayma, 27ans).Cette conscience s'étend au corps *«Même physiquement, je me sens plus légère, comme si j'avais déposé un poids que je portais depuis des années. Je dors mieux, je prends soin de mon alimentation, et je ressens une forme d'équilibre que je n'avais jamais connue avant»(*Hela, 36ans).Les interviewés soulignent à quel point la santé physique et mentale sont étroitement liées et exercent une influence réciproque par divers mécanismes (Prince et al., 2007 ; Wang et Geng ,2019 ; Dale et al., 2014)*« Quand je me sens bien physiquement, automatiquement, mon moral suit. C'est un cercle vertueux.»*(Yassine, 29ans). Ainsi, les interviewés montrent que les créateurs de contenu influencent également la dimension spirituelle *«J'ai compris que prendre le temps d'écouter mon âme améliore ma paix intérieure et, par conséquent, mon bien-être moral»* (Yara, 27ans).Ce résultat concorde avec une étude menée par De Francis,P.C.(1979) qui a révélé que la majorité des répondants indiquaient que les pratiques spirituelles affectaient les dimensions physique, mentale et sociale de leur santé. Les résultats indiquent aussi que les créateurs de contenu social (medecins,coachs) peuvent également renforcer le contrôle comportemental perçu en augmentant les connaissances de leurs abonnés, rendant ainsi plus facile la mise en pratique de comportements liés à l'exercice physique ou à l'alimentation (Ventura et al., 2021**)**.Certains participants soulignent que la présentation et la valorisation de corps variés peut améliorer l'image corporelle et renforcer le bien-être mental (Cohen et al., 2021),et que la transparence sur les difficultés vécues favorisent également l'acceptation de soi *«Ils montrent aussi bien les réussites que les difficultés, rendant leur message humain.En partageant routines, erreurs et progrès, ils motivent plutôt qu'ils ne complexent»(*Marwen,37 ans).L'analyse révèle que la majorité de répondants s'expriment une volonté de changer un comportement qui s'aligne avec ce qui est observé dans la théorie du comportement planifié (Ajzen, 1991) ; et d'adopter des comportements sains *«Avant, je négligeais beaucoup ma santé. Maintenant, j'ai intégré des réflexes de prévention :je fais des bilans médicaux réguliers, j'ai arrêté de fumer, Je mange et je dors mieux et surtout»* (Sabra, 51ans).

Figure 1 : Synthèse des routes d'influence du contenu et du créateur sur la conscience de santé des utilisateurs des réseaux sociaux



Conclusion

Cette étude a permis d'examiner le rôle des créateurs de contenu social dans la conscience de santé des utilisateurs, ainsi que leur contribution à adopter des comportements sains. En mobilisant le modèle de la probabilité d'élaboration, l'analyse thématique a permis d'identifier les caractéristiques du message (contenus inspirants, motivants, informatifs et originaux) et celles de la source qui influencent la conscience de santé des individus (crédibilité, authenticité, expertise, altruisme, spontanéité et similarité).Sur le plan théorique, cette recherche enrichit le marketing d'influence social en adaptant le modèle ELM de persuasion à un contexte non marchand. Elle met également en évidence des caractéristiques émergentes du créateur de contenu, comme la spontanéité, et souligne le rôle central des contenus motivants et inspirants dans l'activation de la voie centrale du traitement cognitif. Sur le plan managérial, les résultats offrent des orientations pertinentes pour les institutions de santé publique et ONG, qui peuvent mobiliser des communicateurs authentiques et responsables pour encourager des changements comportementaux durables. Cette étude présente toutefois plusieurs limites :une méthodologie qualitative qui réduit la généralisation et un focus exclusif sur la perception des utilisateurs. Les recherches futures pourraient inclure une étude quantitative pour confirmer les résultats, explorer le point de vue des créateurs afin de mieux comprendre leurs motivations et leur responsabilité sociale.

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Annexes

Tableau 1 : Caractéristiques de l'échantillon des utilisateurs

	Prénoms	**Sexe**	**Age**	**Profession**
1	Ayhem	H	35	Responsable commercial
2	Saif	H	28	Community manager
3	Doniez	F	24	Etudiante en Marketing
4	Salsabil	F	18	Lycéenne
5	Youssef	H	25	Propriétaire d'un Small business
6	Aziz	H	34	Gérant dans un restaurant
7	Oumayma	F	28	Chargée de clientèles dans la poste
8	Chayma	F	27	département RH Leoni
9	Sonia	F	40	Mère au foyer
10	Mariam	F	25	Entrepreneuse et violoniste
11	Tarek	H	40	Comptable
12	Houda	F	66	Propriétaire d'une maison d'hôte
13	Yassine	H	29	Coach sportif et propriétaire de vêtements de sport
14	Sihem	F	43	Responsable marketing
15	Sabra	F	51	Secrétaire dans une usine de confection
16	Marwen	H	37	Aide soignant à Canada
17	Maram	F	27	Technicienne supérieure
18	Mohammed	H	53	Garde national
19	Imene	F	29	Architecte d'intérieur
20	Hela	F	36	Enseignante
21	Kamel	H	58	Secrétaire général du gouvernorat
22	Nizar	H	40	Propriétaire d'Agence de location des maisons
23	Yara	F	27	Etudiante et écrivaine
24	Ibtihel	F	31	Graphiste freelance
25	Chahed	F	35	Comptable

Tableau 2 : Les caractéristiques de contenu qui influencent la conscience de santé

Les caractéristiques	**Exemples de verbatims**	**Nombre de répondants**
Contenu inspirant	*«Un contenu très motivant..J'ai appris à écouter mon corps, à reconnaître les signaux du stress, et à adopter une hygiène de vie plus saine »(Sabra,51 ans)* *«Ça m'inspire et ça me donne envie d'essayer .C'est comme une petite dose de motivation quotidienne»(Imene,29ans)* *«Des sujets qui touchent ma vie de tous les jours ou à mes centres d'intérêt. Contenu qui m'inspire et me motive de faire du sport et de prendre soins de mon bien être! »(Mohammed,53ans)* *«Ces contenus me rappellent chaque jour pourquoi je fais ce métier.Ça entretient ma discipline et mon état d'esprit positif. Et puis, voir des gens persévérer, ça te pousse à faire pareil. Même en tant que coach, on a besoin de modèles à suivre »(Yassine,29ans)* *«ça me donne aussi des idées pratiques et inspirants pour la maison :des conseils d'organisation de prendre soin de mon alimentation,de connaitre comment gerer le stress.. »(Sonia,40ans)* *« Je veux toujours m'éloigner des publicités, des choses commerciales. Je veux toujours rester dans les choses qui m'aident à m'améliorer… »(Chahed,35ans)*	25/25
Informativitè perçue	*«Vous savez, j'ai beaucoup mieux appris ce que je dois prendre, en quelle quantité et à quelle vitesse. J'ai appris à faire des crêpes protéinées. J'ai appris à préparer des desserts sans sucre.»(Chayma,35ans)* *«ça donnait des informations nécessaires et des conseils d'une manière très intelligente et indirecte à la fois »(Tarek,40ans)* *«elle explique vraiment comment les règles arrivent, explique le mécanisme intérieur et toutes les détails de la période du règles et comment être consciente à des maux spécifiques pour comprendre les causes du Cancer du col de l'utérus »(Sihem,43ans)* *«Ces contenus me donnent de la clarté grâce aux informations détaillés et précises. Avant, j'étais*	20/25

	très anxieux. Maintenant, je comprends ce que je peux manger, comment réagir en cas d'hypoglycémie, comment gérer mes émotions »(Nizar,40ans)	
Contenu créatif /original	*« J'aime ce type de contenu et j'aime aussi les sujets qui sont un peu, parfois, différents aux stéréotypes d'autres contenus quand nous sommes très consommés par rapport à eux, par exemple les contenus d'achat, de vente, de pub, de sponsoring, et cetera. Donc ce qui m'attire mon attention, c'est l'originalité du contenu »(Yara,27ans)* *«Ce qui attire mon attention, c'est l'originalité de la rédaction, le côté subtil de la rédaction… de la façon de relater les faits »(Houda,66ans)* *« Ainsi que la créativité et l'originalité de contenu affecte mon attention » (Tarek ,40ans)* *«Ce type de contenu, qui est moins commercial et plus créatif »(Ibtihel,31ans)* *«J'aime un contenu attirant et loin des stéréotypes »(Ayhem,35ans)*	17/25

Tableau 3 : Les caractéristiques des créateurs de contenu qui influencent la conscience de santé

Les caractéristiques	**Exemples de verbatims**	**Nombre de répondants**
La crédibilité	*« Ils sont très crédibles parce qu'ils prouvent la réalité des choses pour trouver des solutions pratiques, et n'ont pas des solutions qui sont très loin de la réalité et très difficiles à appliquer surtout que ce n'est pas un contenu simple, c'est un contenu important…la crédibilité est impérative »(Yara,27ans)* *« c'est que je sens qu'ils ont une grande crédibilité et tout, et qu'ils sont sincères dans leurs conseils »(Youssef,25ans)* *«C'est que je sens qu'ils ont une grande crédibilité, et qu'ils sont sincères dans leurs conseils »(Yassine,29ans)* *« Leur sincérité. On sent que ce ne sont pas des gens qui cherchent juste des vues. Ils partagent des choses qu'ils ont testées eux mêmes »(Sonia,40ans)* *«La crédibilité est importante. Relater les faits de façon objective, ne pas déformer la réalité »(Houda,66ans)*	18/25
L'authenticité	*«leur authenticité et leur approche unique. Ils ont aune façon très pédagogique et accessible de présenter des conseils » (Mohammed,53ans)*	13/25

	«Je dirais que ces créateurs-là sont authentiques. Ils ne montrent pas seulement la réussite ou les abdos parfaits, mais aussi les moments difficiles : la fatigue, les blessures, le doute »(Marwen,37ans)) *«L'authenticité. C'est ce qui me touche le plus. On ressent rapidement quand quelqu'un partage par passion ou juste pour la visibilité »(Ibtihel,31ans)* *«Ils sont tous authentiques à leur manière déjà. Ça veut dire, je n'identifie pas une autre personne à leur place, ou quoi que ce soit »(Mariem,25ans)*	
L'altruisme	*« Il ne t'apparaît pas qu'il te considéré comme un consommateur ou il cherche l'argent ou il va gagner grâce à toi quelque chose. Mais au contraire tu sens que leur but c'est de te passer l'information et que tu n'es pas un produit pour lui »(Saif,28ans)* *«Par exemple, un docteur dit toujours :"Vous n'êtes pas vos chiffres, vous êtes une personne avant tout."»(Nizar,40ans)* *«Ils parlent de causes humaines et sociales, pas pour l'argent mais pour sensibiliser.»(Donniez,24ans)* *«Ils ne jouent pas un rôle commercial. Leur but, c'est de faire passer l'information, le conseil, pas de vendre!»(Oumayma,28ans)*	10/25
L'expertise	*« Ghada Maatouk…elle n'est pas seulement influenceuse. Elle a étudié la pharmacie, elle a étudié d'autres choses, elle a fait de la PNL »(Chayma,27ans)* *« D'autres créateurs, comme les "coachs santé" non médecins, parlent trop de produits miracles. Moi, je fais confiance aux professionnels, pas aux vendeurs »(Nizar,40ans)* *«Je suis les gens importants, les gens qui sont intellectuellement d'un certain niveau. Leur analyse, leur subtilité, leur façon de traiter les sujets sont importants »(Houda,66ans)* *«Ce sont des experts du domaine : Par exemple, Oumaïma Trad a un doctorat en pharmacie. Nourchene est sage-femme, elle a son diplôme. L'autre est un médecin aussi, j'ai oublié son nom. Ils sont des experts du domaine, ils te donnent des informations fiables. »(Sihem,43ans)* *Il travaille déjà comme psychologue, et il donne toujours des conseils, ils sont des spécialistes »(Youssef,25ans)* *Il y a par exemple une diététicienne qui analyse ce que d'autres postent dans leurs vidéos "Ce que je mange en une journée" et explique:"Ce régime n'est pas scientifiquement validé." J'ai trouvé ça très utile d'avoir quelqu'un qui analyse le contenu d'un point de vue scientifique. Ça m'a vraiment rassurée, car je*	10/25

	préfère écouter une experte que des influenceurs sans base scientifique. »(Houda,66 ans)	
La similarité avec la cible	*« Car il a la même mentalité que moi, le même style de vie que moi. Je suis à l'aise quand je le regarde »(Chahed,35ans)* *« Je sens que quelqu'un me parle face à face, comme s'il était assis à côté de moi et qu'il me parlait. Il me transmet quelque chose de proche, une forme de proximité. Cela veut dire que ses paroles me touchent » (Salsabil,18ans)* *«Ils dessinent un monde où je me trouve, je me sens très proche de ce créateur-là..Il vit des choses comme moi.»(Yara,27ans)* *« Tu sens qu'il y a une proximité entre celui qui regarde et entre celui qui fait passer l'information. J'aime ça ! »(Saif,28ans)*	9/25
La spontanéité	*« J'aime la spontanéité, une méthode spontanée pour diffuser l'information »(Saif,28ans)* *« Ils ont souvent un humour très personnel, des concepts originaux et une vraie spontanéité, ce qui les rend uniques et très appréciés»(Tarek,40ans)*	8/25

Tableau 4 : Les effets des créateurs de contenu social sur la conscience et les comportements de santé des utilisateurs

		Exemples de verbatims	**Nombre de répondants**
Les effets des créateurs de contenu social sur la conscience et les comportements de santé des utilisateurs	Attitudes positive fondée sur l'éveil à la conscience de santé	*« je suis très reconnaissant à cet influenceur ! Avant, quand je ne faisais pas de sport, j'étais plus nerveux, plus irritable. Aujourd'hui, je me sens plus calme, plus concentré. »(Aziz,34ans)*	22/25
	Les normes sociales perçues	*« À cet égard, mon ami est mon meilleur guide. Car lui aussi aime faire du sport et essaie de manger le plus sainement possible. »(Maram,27ans)*	6/25

	Contrôle comportemental perçu	*« Il existait certains exercices que je craignais de mal réaliser s'ils essayaient, mais les influenceurs ont rendu ces comportements plus accessibles en fournissant des techniques permettant de les exécuter correctement ».*(Kamel,58ans) *«Ils ne cherchent pas à imposer un modèle de vie parfait ou à montrer une image idéale d'eux-mêmes. Ils parlent souvent de leurs propres blessures ou de leurs moments de doute… Cela me rassure et me permet de m'accepter tel que je suis et d'essayer de me développer »(Marwen,37ans)*	4/25
	Le changement de comportement et l'adoption durable de pratiques saines	*«Avant, je négligeais beaucoup ma santé. Maintenant, j'ai intégré des réflexes de prévention : je mets de la crème solaire tous les jours, je fais des bilans médicaux réguliers, et j'ai arrêté de fumer. Je mange mieux, je dors mieux, et surtout, je prends du temps pour moi ».(Sabra,51ans.* *«je commence à faire la méditation, journal de gratitude, sélection consciente des comptes sur les réseaux… vivre plus consciencieusement, à l'écoute de moi-même » (Hela,36ans)* *«J'ai changé mon alimentation, mon sommeil et ma façon de gestion mon stress… Ces contenus m'ont fait passer de la peur à la discipline »(Nizar,40ans)*	22/25

Social Media Influencers and Youth Identity in Africa: Marketing Implications in a Disruptive Era

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Abstract

The rapid rise of social media influencers has changed the way youth interact with brands, culture, and identity in digitally expanding, socioeconomically dense African settings. The current body of research on influencer marketing is largely Western and behaviour-oriented, offering little information on the role of engagement with influencers in youth identity formation and its downstream marketing implications. This theoretical paper develops a complex, multifaceted model of influencer engagement in shaping youth identity development in Africa, with perceived relatability, aspirational appeal, authenticity, trustworthiness, and interaction frequency as key elements explaining this process. The paper reconceptualises influencers as identity architects within platform economies rather than promotional intermediaries, drawing on social identity theory, platform affordance theory, and civic engagement perspectives. The formation of youth identity, operationalised as identity congruence, aspirational self-alignment, identity salience, and perceived social belonging, is theorised to mediate the relationship between influencer engagement and consumer outcomes, including purchase intention, brand association, lifestyle adoption, and advocacy behaviours. Conditioning attributes are suggested to be platform characteristics and socio-cultural setting. The framework driving the theory proposes contextual moderators that are normally ignored in hegemonic Western models and frames identity formation as a dynamic, socially situated process rather than a fixed stage of development. A set of propositions is formulated in a clearly defined manner to be used in future testing. The research has implications for marketing strategy, policy and regulation, and interventions targeting youth in African digital ecosystems.

Keywords: Social media influencers; Youth identity formation; Consumer Culture Theory; Influencer marketing; African digital cultures; Social Identity Theory; Platform affordances; Youth consumption behaviour; Identity congruence.

Introduction

The increased popularity of social media influencers has altered the ways young people form, express, and negotiate their identities in digitally mediated spaces. Despite the fact that previous studies have addressed the correlation between social media use and the formation of youth identity in both Western and a few Global South countries (e.g., Murphy et al., 2020; Ezzat, 2020), theoretical explanations do not yet adequately explain how identity develops in the particular socio-cultural and economic context, which defines most of African societies. Specifically, the conceptual clarity of how African youth connect with influence models as reference figures and how this connection leads to identity formation in the context of structural inequality, limited opportunities, and blistering digital growth is limited. In this paper, youth are defined as people aged 15-29, encompassing late adolescence and emerging adulthood. This is a very important stage of life, especially for identity development, as people negotiate goals, social belonging, and future orientation. In Africa, negotiations take place in an environment characterised by a young population, disproportionate digital access, elevated unemployment, political instability, and socio-economic instability (Sumberg et al., 2021). Africa, however, is not treated as a homogeneous entity. The differences in urban-rural digital access, socio-economic stratification, cultural norms, and institutional stability indicate that people can expect identity processes to vary between these regions and communities. These contextual factors will likely shape the nature of the interpretation, internalisation, or resistance to influencers' narratives.

In these settings, influencers play a more significant role than mere marketing mediators, serving as aspirational role models. They filter images of movement, prosperity, material accomplishment, civic engagement, and cultural pride, which can be a strong alternative for young people who struggle to find their way. However, conceptualisations of influencer marketing are most often dominated by short-term behavioural results, with less emphasis on consumer relations. Likewise, research on the application of social identity theory to digital marketing places little emphasis on structural and situational moderators that determine group membership and the development of self-concepts. Therefore, current models do not shed much light on identity formation in socio-economically transitional and digitally stratified environments. There are theoretical and practical implications of this limitation. In theory, extending identity-based accounts of influence to include contextual moderators (e.g., economic marginalisation, cultural hybridity, platform affordances) through which influencer narratives are perceived and internalised is warranted (Mwaura et al., 2023). In practice, with growing scepticism towards traditional advertising among young customers, communication through influencers increasingly shapes purchasing choices and identity discourses (Vogel et al., 2020). In the absence of context-sensitive theorisation, influencer strategies may be used by brands, development organisations, and policymakers without consideration of the realities and aspirations of diverse youths as they are experienced (Mokoena and Seeletse, 2024; Mqwebu, 2024).

Against this background, the current paper aims to achieve three goals. First, it theorises the role of influencer engagement in youth identity formation in the African contexts. Second, it postulates that identity formation among youth serves as an intermediary between influencer

involvement and its effect on consumer behaviour. Third, it recognises the platform's nature and socio-cultural contexts as moderators that precondition the intensity and nature of such relationships. To accomplish these aims, the paper elaborates a conceptual framework that integrates them by reconceptualising influencers as identity-forming cultural mediators within platform economies rather than as one-directional persuasive agents. The framework places the influencer engagement (theoreticalised in terms of perceived authenticity, relatability, aspirational appeal, and frequency of interaction) as the key antecedent, youth identity formation (identity congruence, aspirational self-alignment and perceived social belonging) as the key mediating process and consumer behaviour outcomes (purchase intention, brand attachment, lifestyle adoption) as the downstream manifestations of identity alignment. Influences are conditioned by the platform's affordances and the socio-cultural context.

The rest of the paper proceeds as follows: it presents a critical synthesis of the literature on the formation of youth identity, influencer marketing, and African online contexts, revealing certain theoretical tensions. It goes on to expound the postulated conceptual framework and to formulate testable propositions. The paper ends with a description of theoretical, practical, and policy implications, limitations, and recommendations for future research.

Literature Review

In the evolving discourse surrounding youth identity in Africa, the role of social media influencers has emerged as a critical element, particularly in the intersection of cultural expression, consumer behaviour, and identity formation. This literature review synthesises existing research on the implications of social media influencers on youth identity in Africa, focusing on the thematic intersections of globalisation, local identity, and marketing strategies in a rapidly changing social environment.

Globalisation and Youth Identity Formation

The formation of youth identity is commonly theorised as a social and relational phenomenon that is informed by symbolic interaction, group membership, and structural factors (Murphy et al., 2020; Ezzat, 2020). In the context of globalisation studies, identity is viewed as a negotiation situated between new transnational flows of culture and old local socialities (Sumberg et al., 2021). Instead of promoting cultural homogenisation, current discourses focus on glocalisation, the reinterpretation of global symbols in local contexts (Mwaura et al., 2023). This agency-based view is supported by empirical studies. Kjeldgaard and Askegaard (2006) claim that youth cultures are a two-way process in which global meanings are localised and re-embedded, allowing identities to be both globally intelligible and locally meaningful. On the same note, Erastus and Hurst (2021) demonstrate how African young people tactically blend international and local cultural and moral economies to form hybrid identities. A study of West African immigrant youth also explains that youths oppose and re-story dominant cultural discourses rather than internalising them passively (Watson and Knight-Manuel, 2017).

What is already known is that the process of youth identity formation is characterised by reflexive negotiation between global and local symbolic resources. Nevertheless, the issue that is under-theorised, especially in African settings, is the role of digitally mediated actors who

dominate, exalt, and commercialise identity stories. A large part of the literature on identity continues to presume that identity is shaped by diffuse cultural flows or peer-based socialisation. It pays insignificant attention to platform-based intermediaries, whose appearance is algorithmically organised and commercialised (Punjabi and Prasadh, 2024). In addition, the latest studies emphasise that digital mediation is imbalanced and situational. Another example is urban youth: they find it easier to navigate global and local signals than rural youth (Echesony, 2024). However, the frameworks present rarely incorporate such contextual contingencies into their explanatory models. Consequently, the identity theory is unable to explain how platform economies transform access to symbolic resources. The presence of this gap motivates the inclusion of influencer engagement as an independent antecedent variable and socio-cultural situation as a moderating factor in the proposed model. It also contributes to the formation of youth identity as a mediating dynamic process rather than a developmental outcome.

The Role of Social Media Influencers: From Persuasion to Identity Work

In the marketing literature, social media influencers are typically defined as agents who enhance interest and buying intent. Studies consistently show that influencers make perceptions more authentic, emotionally closer, and more relatable, especially among younger viewers (Ghosh & Islam, 2023; Dinh and Lee, 2021). It has been experimentally demonstrated that influencer-produced content amplifies brand interactions and social diffusion (Coates et al., 2019). The overriding explanatory rationale in this literature is based on behavioural outcomes: more liking, sharing or purchasing. Influencer engagement is commonly operationalised in terms of interaction frequency or perceived similarity. Aspirational alignment, cultural resonance, and fear of missing out (FOMO) are psychological processes that have been identified as positive triggers of consumption behaviour (Dinh and Lee, 2021).

This, however, creates a strain between behavioural and identity-based interpretations. Although the emphasis of behavioural research is on the metrics of persuasion and engagement, new researchers propose that influencer interactions constitute identity work, a process by which young people compare, imitate, and negotiate potential selves. Influencers act not only as endorsers but also as reference groups that shape aspiration templates. This dimension of identity is supported by research on normative influence. Influencers determine descriptive and injunctive norms that determine what is desirable, typical, or socially rewarded (Rothman et al., 2019). But even in this situation, there are short-term identity impacts that are not well-developed. It has been argued that identity-building based on consumption can produce instability or susceptibility, especially when self-value is pegged to branded living (Hill, 2011). These dynamics are further complicated by socio-economic disparities, as exposure to edited success stories can only exacerbate unrealistic social contrasts (Sussman et al., 1988). Therefore, it has been shown that influencers affect engagement and consumption; however, the literature is conceptually vague about how long-term exposure influences identity salience, self-concept coherence, and belonging, particularly in structurally constrained African contexts. These contradictions warrant reframing influencer engagement as a form of identity formation rather than as a persuasive concept. This encourages the formation of youth identity

as an intermediary between influencers' engagement and consumer outcomes, and the perceived attainability, alongside the socio-economic context, as a condition of the boundary.

Social Media, Civic Engagement, and Collective Identity

In addition to consumption, digital platforms are civic spaces that form groups and identities. Social media campaigns, like the one the African youth-led EndSARS movement launched, demonstrate how African youths communicate their grievances, organise opposition, and form generational identities around justice and change (Dambo et al., 2020). Digital activism creates a sense of solidarity despite geographic and ethnic boundaries and strengthens common frames with symbols (Murphy et al., 2020). Notably, marginalised groups use online spaces to affirm their identities. Studies on LGBTQ+ youth show that online communities help them accept themselves and feel a sense of belonging (Berger et al., 2022). On the same note, digital health campaigns demonstrate how identity negotiation overlaps with information spreading, forming the image of responsibility and healthy living (Burns and Arnault, 2019; Andrade et al., 2018).

This literature broadens the concept of identity beyond consumers. It demonstrates that online communities are connected to consumption, civic engagement and self-expression. Nevertheless, the dimensions of civic and collective identity are rarely incorporated into influencer marketing research. Influencers tend to work in both commercial and civic arenas concurrently, whereas theoretical frameworks consider them as disjointed. The other under-theorised aspect is the heterogeneity of context. The civic and identity implications of digital interactions vary based on the socio-political climate, institutional credibility and cultural values. However, very few models indicate the role of such contextual factors in moderating digital identity processes. This stream justifies the introduction of civic identity processes into the conceptualisation of youth identity formation and reaffirms the necessity of modelling platform affordance and social-cultural context as conditioning factors rather than background factors.

Synthesis and Conceptual Gap

Across these strands, three conclusions emerge.

First, youth identity formation is reflexive, negotiated, and shaped by global–local interactions. Second, influencer marketing research demonstrates behavioural effectiveness but insufficiently theorises the mediation of identity. Third, digital platforms function as multi-layered spaces where consumption, civic participation, and belonging intersect. What remains under-theorised—particularly in African contexts—is how *influencer engagement operates as a structured identity resource within platform economies*, and how this process translates into downstream marketing outcomes under varying socio-cultural conditions. Existing literature either:

- Focuses on globalisation without platform specificity, or
- Emphasises behavioural persuasion without identity mediation, or
- Examines civic digital engagement without integrating commercial influence.

The present study addresses this disintegration by integrating identity theory, consumer culture theory, and platform affordance theory into a unified explanatory model. Specifically, it conceptualises:

- Influencer engagement as the antecedent mechanism,
- Youth identity formation as the mediating process,
- Consumer behaviour outcomes as downstream expressions of identity congruence, and
- Platform characteristics and socio-cultural context as moderating conditions shaping the strength and direction of effects.

This synthesis lays the foundation for a theoretically disciplined conceptual framework that moves beyond persuasion metrics to examine identity-making within African digital ecosystems.

Theoretical Argument and Conceptual Development.

There is an urgent need to theorise the intersection of social media influencers and youth identity formation in Africa as a critical site, given the demographic attributes of youthfulness, socio-economic precarity, and the changing pace of cultural change. Influencers have been studied in the literature using either behavioural or communicative frameworks; these models have not been sufficient to examine the deeper aspects of identity when internalisation and the reproduction of influence occur. This part presents a conceptual argument that repositions influencers as structurally situated actors in youth identity-making, drawing on identity theory, socialisation studies, civic engagement literature, and consumer culture theory.

Conceptual Clarification

Three constructs, social media influencers, civic engagement, and youth identity, are the central elements in this analysis. Youth identity is not understood as a fixed quality but as an ever-transforming arrangement of self-concept, social identification, and cultural placement, shaped by engagement with symbolic resources and reference groups throughout adolescence and early adulthood (Johnson et al., 2011). This perception aligns with modern identity scholarship, which focuses on reflexivity, multiplicity, and context dependence rather than on linear stages of development. Here, social media influencers are described as digitally visible actors whose authority is based on their audiences following them, authenticity, and algorithmic amplification, rather than on any official institutional authority (Japheth et al., 2025). Most importantly, influencers act as cultural mediators, packaging narratives of aspiration, success, and belonging and making them relevant sources for young people whose social and economic paths are uncertain and insecure. Under this paradigm, civic engagement goes beyond formal political engagement to include digitally mediated civic activities, through which youths raise grievances, organise networks, and create collective identities (Tufekci & Wilson, 2012). Such engagement in African contexts is often incorporated into discourses of resistance, cultural affirmation, and generational self-determination, echoing the voices of historically marginalised youths (Gbandi et al., 2025). These constructs cannot be analytically disaggregated, as influencer engagement often involves a combination of consumption, self-expression, and civic positioning, creating identity effects that single-domain theories cannot adequately describe.

Identity Formation and Underlying Mechanisms of Influence.

The ability of social media influencers to condition youth identity is mediated by a complex of interconnected psychological and social processes. To begin with, digital platforms allow

constant exposure to mediated identity discourses that pre-empt aspirational lifestyles, ethical staging, and social presence. Youth interaction with influencers, therefore, is a form of symbolic alignment, with identity meanings judged, accepted, or defied through continuous interaction rather than being subject to persuasion (Mazetti et al., 2022). Second, the processes of identity salience and identity verification are core in influencer resonance. Young people prefer to view influencer content that confirms their desirable qualities or offers a plausible alternative self, thereby strengthening the consistency between self-perception and its portrayal (Reed et al., 2012). This is also amplified by social metrics of approval, such as likes, shares, and comments, which offer social validation that naturalises certain identities and aspirations. Third, the dynamics are compounded in contexts defined by cultural hybridity and structural constraints. Young African people tend to navigate among local culture, international cultural trends, and socio-economic insecurity (Arnett, 2002). By transforming abstract dreams, e.g., success, mobility, civic voice, etc., into concrete, relatable stories, influencers provide symbolic coherence amid this complexity. In this manner, they minimise the ambiguity of identity, not to mention strengthen dominant platform logics of visibility and performance.

Bringing Theoretical Perspectives Together.

To encompass these processes, the paper combines insights from various theoretical traditions. Identity development theories emphasise the formation of self-concept through social interaction and symbolic comparison, especially during the early stages of development (Syed & McLean, 2015). This is further complemented by socialisation theory, which emphasises the two-way nature of influence, whereby youth actively decode and negotiate the content of influencers rather than internalise it. This framework is further expanded by the civic engagement theory, which conceptualises identity as indivisible, encompassing both participation and voice. Digitally mediated engagement helps young people engage in citizenship through discourse, alignment, and mobilisation, and connects identity formation with meaning-making in common (Mwaura et al., 2023). Consumer culture theory is another layer concept because it describes the processing of symbols as resources for identity construction, set against a backdrop in which consumption itself represents aspiration and social positioning (Alden et al., 1999). Bringing these views together enables influencers to be seen not only as marketing agents but also as fusion points where consumption, civic expression, and identity meet. This theoretical synthesis meets the problem of siloed methods that segregate marketing impacts from other social and cultural influences.

Rebranding Influencers as Identity Architects.

Based on this integration, the paper suggests a conceptual reframing of social media influencers as identity architects. This lens emphasises their role in structuring symbolic spaces where youth identity is negotiated. Instead of merely relaying messages, influencers craft interpretative structures that condition how young people perceive success, belonging, and agency in digitally mediated spaces. This point relates to the literature on practical or performative citizenship, which situates digital engagement as the way in which identities are created and authorised (Mazetti et al., 2022). Influencers have been taking on the roles of hybrid commentators, style guides, and citizen interlocutors between youth and commercial promotion on issues of inequality, representation, and cultural heritage (Gbandi et al., 2025). Their effect is therefore not only in consumption but also in the identity governance arena, where some modes of being are made visible, desirable, and socially rewarded.

Theory and Conceptual Improvement.

This paper contributes to the existing discussion of identity formation among young people by conceptualising influencers as identity architects embedded in platform economies. It previews

identity as a dynamic product of extended digital interaction, emphasises the platform's structural role in producing influence, and reconciles consumer behaviour with the processes of civic and cultural identity. By doing so, it provides a more context-sensitive and theoretically integrated explanation of how African youth negotiate identity in digitally saturated spaces. This theoretical elaboration lays the groundwork for the framework developed in the following section and provides a background for subsequent empirical studies on the identity effects of influencer involvement in cultural and socio-economic settings.

Conceptual Framework

The proposed framework conceptualises the use of social media influencers as an identity-making process and not a linear form of persuasion. Contrary to the assumption that exposure to influencer content directly produces behavioural effects, the model maintains that youth identity formation is the key interpretive process through which engagement with influencers gains meaning and behavioural impact in the African context. Central to the framework is the following proposal, that influencer engagement (conceived not simply as exposure), but rather, as an instance of affective and symbolic interaction characterised in terms of perceived authenticity, relatability, aspirational appeal, trustworthiness and repetitive engagement, is the perfect activator of identity negotiation processes among youthful audiences. Based on social identity theory, influencers are framed as salient reference points whose stories provide symbolic guidelines for potential selves. Engagement is thus not merely a mere attention, but a comparison, a realisation, and a projection of desire.

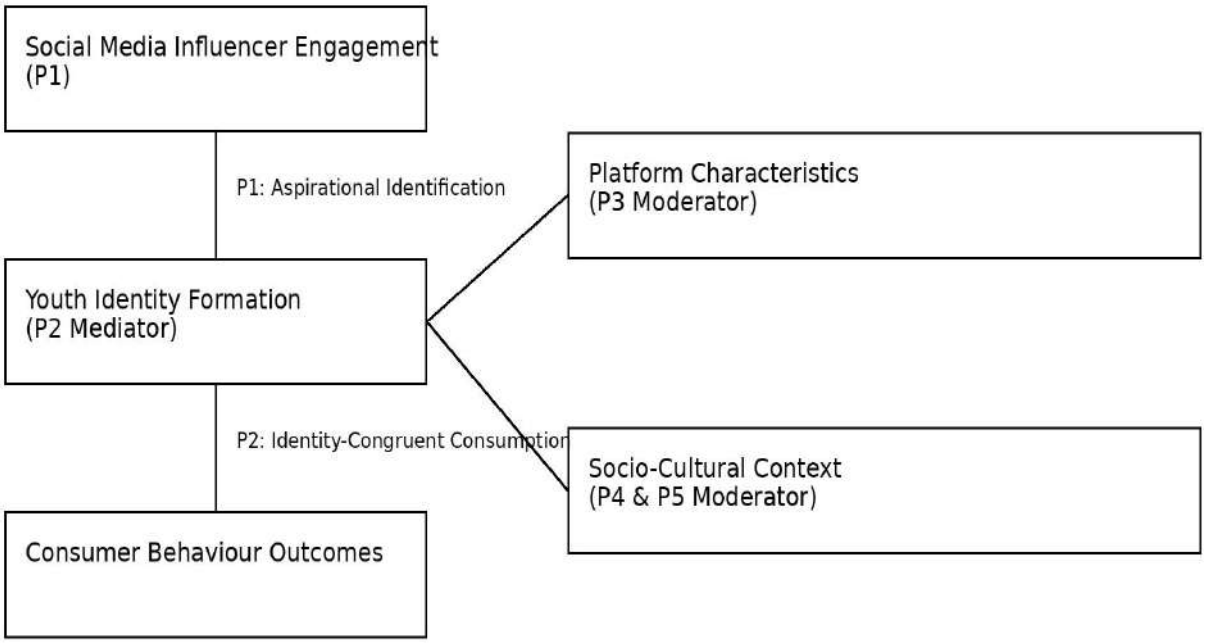
Identity formation, however, is not conceptualised as automatic or uniform. Instead, it is positioned as a dynamic, contextually situated process in which youth selectively assimilate, reactively or resistively, to influencer discourses. Identity congruence, aspirational self-alignment, identity salience, and perceived belonging are the dimensions of this process that can be operationalised and understood. In that regard, influencer narratives can be perceived as identity resources situated within a broader socio-cultural and economic context. This mediating role in identity formation is vital because, in one situation, influencer engagement leads to behavioural consequences, whereas in another, it does not. The resultant downstream behavioural implications can thus be described as identity-expressive rather than utilitarian. Theorised manifestations of identity congruence are purchase intention, brand attachment, lifestyle adoption and advocacy behaviours. According to consumer culture theory, consumption is a performative act through which youth express and indicate aspirational identities. The model, therefore, shifts the focus of persuasion from the transactional to the symbolic.

Notably, the framework acknowledges that processes occur in technologically structured environments. The degree of salience and intensity of the influencer narratives is determined by platform affordances, such as algorithmic amplification, interactivity, visibility metrics, and community-building features. The high level of algorithmic visibility and interactivity would tend to reinforce exposure repetition and social validation, thereby strengthening identity alignment processes. Meanwhile, the over-commercialisation/saturation of algorithms can decrease perceived authenticity, weakening the engagement-identity association. Characteristics of platforms thus act as conditioning processes and not passive settings. The contribution of socio-cultural context is also important. African young people are negotiating identity in environments characterised by economic precarity, cultural hybridity, heterogeneous access to digital technologies, and multiple forms of institutional distrust. These institutional facts define the senses of the legitimacy, attainability, and alienation of influencer narratives. Identity alignment is more likely to occur when influencers' lifestyles are perceived as culturally proximate and attainable for economically disadvantaged groups. On the contrary,

in contexts where stories seem disconnected from lived realities, involvement can lead to resistance, disengagement, and identity strain. The development of identity alignment and its translation into consumption behaviour are thus moderated by the socio-cultural context.

Through the combination of these components, the framework promotes context-alternative conceptualisation of the digital influence. It criticises universalist models that are mostly based on the Western consumer context and instead frames influencer marketing within African socio-economic and technological conditions. Influence is thereby redefined as a mediated identity-making process that takes place in platform economies and which is conditioned by cultural embeddedness. This discussion-based formulation makes the model's directional logic clear: influencer engagement influences identity formation among youths, identity formation mediates behavioural outcomes, and platform and socio-cultural conditions determine the strength and limits of these relationships. It also pre-empts scenarios in which the proposed relationships might break down or prove ineffective, such as when authenticity is undermined, attainability is low, or other identity anchors take over. On the whole, the framework offers a theoretically rigorous yet contextualised basis for further development of propositions and empirical testing. It does not treat youth identity formation as a marginal effect of online interaction, but rather as the key mechanism by which influencer culture shapes marketing and social implications within modern African digital ecosystems.

Figure 1. Conceptual Framework: Social Media Influencers and Youth Identity in Africa



Created by the authors

Figure 1 presents a theoretical model in which the development of youth identity is central to explaining the effects of engagement with social media influencers on consumer behaviour in African settings. The paradigm contrasts with existing behaviour-focused models by theorising the influencer interaction as a process of inspirational identification, in which influencers act as high-profile proxies that shape youths' self-concept, sense of belonging, and future aspirations. Identity formation is therefore interpreted not as an outcome but as an intermediary process which clarifies how and why influencer discourses attain behavioural meaning. The results of consumer behaviour, including purchase intention, brand attachment, and lifestyle adoption, are attributed to identity congruence rather than to direct responses to persuasive messages. The paradigm also accounts for contextual complexity by incorporating platform

capabilities and the socio-cultural milieu as driving forces. The platform affordances, interactivity, and algorithmic amplification are hypothesised to strengthen the influencer-identity relationship by increasing visibility, frequency, and social validation, whereas the socio-cultural context is suggested to shape identity formation and conversion to consumption by influencing the perceived legitimacy, attainability, and cultural relevance of influencer stories. The framework is a combination of identity-oriented and context-sensitive conceptualisation of digital influence, requiring influencer marketing to be viewed as a dynamic identity-making process that occurs within platform economies and local socio-cultural environments, rather than a single-directional approach to persuasion.

Framework Components and Relationships

Social Media Influencers

The conceptualisation of social media influencers as digitally embedded cultural mediators is based on presumed authenticity, relational proximity, and algorithmic visibility as sources of power, rather than institutional position. Influencers are usually aspirational in their messages about social mobility, success, cultural pride, and civic voice in African youth contexts. They not only impact product endorsement, but also the normalisation of lifestyles, values, and identity scriptures. In terms of social identity, influencers serve as salient reference groups that symbolise belonging and self-identification. The consumption of influencer content by youth is therefore a form of identity work, but not an entirely instrumental choice. Theoretically, Social Identity theory and symbolic interactionism propose that people should harmonise their self-concept with socially esteemed reference figures, especially in situations typified by identity doubt and structural enslavement.

Youth Identity Formation (Central Construct)

At the heart of the framework is youth identity formation, characterised as a dynamic process in which young people negotiate self-concept, social belonging, and aspirational orientation in relation to the symbolic resources of their social environment. Under digitally mediated conditions, the influence narratives are important identity resources that young people selectively adopt, struggle with or rebrand. The process of identity formation is not even presumed to be unified. Rather, it is determined by exposure repetition, social validation processes (e.g., likes, shares), and the compatibility between influencer stories and youths' realities. This is especially relevant in African settings where young people deal with the hybridity of cultures, economic insecurity, and the lack of institutional opportunities to success. Identity development theory and reflexive modernity views present identity as constantly negotiated through interaction with social symbols and imagined futures.

Consumer Behaviour Outcomes (Marketing Implications)

The downstream impact of identity alignment with influencer narratives is reflected in consumer behaviour outcomes. These results are purchase intention, brand attachment, lifestyle adoption and advocacy behaviours. Notably, the framework holds that consumption is not solely reactive but also expressive, i.e., youth consumption behaviours indicate identity congruence and social status. As youth identify with projects influenced by the brand or lifestyle endorsed by influential people, consumption becomes a way to perform and certify the self. This shifts the marketing effectiveness of transactional persuasion toward symbolic resonance. According to consumer culture theory and identity-based branding research, a brand's value increases when it serves as an identity marker rather than a utilitarian good.

Platform Characteristics (Conditioning Mechanism)

Platform characteristics are the technological capabilities of social media, such as interactivity, algorithmic curation, visibility metrics, and community-building features. Those characteristics determine the way the influencer's content is received, assessed, and socially justified. Platforms do not exist as passive spaces of interaction; they exert influence through active structuring, amplifying specific narratives, prioritising engagement-driven content, and strengthening performances of identity. Influencer salience is heightened by high interactivity and algorithmic reinforcement, thereby amplifying identity effects. Theoretically, the approach proposed by affordance theory and platform economy studies holds that technological infrastructures define how people interact by facilitating and constraining social interaction.

Socio-Cultural Context (Contextual Moderator)

Socio-cultural context includes cultural norms in the area, socio-economic status, historical disparities, and the institutional framework that shapes how youth interpret influencers' content. In the African context, these aspects shape perceptions of whether influencer discourses are achievable, legitimate, or alienating. The socio-cultural context moderates the development of identity meanings through influencers' engagement, resulting in variation in outcomes across regions, communities, and social groups. This context-sensitivity concerns universalist models of influencers prevalent in Western marketing research. The cultural embeddedness theory underscores that meaning-making processes are shaped by structural and cultural contexts and are not solely guided by individual cognition.

Conceptual Framework to an Empirically Testable Model.

It takes more than merely the technical operationalisation of constructs to translate the proposed conceptual framework into an empirically testable model; it also requires serious consideration of what is being tested, why it is of theoretical interest, and where current empirical methods fall short. The framework advances one key argument: that influencer engagement mediates consumer outcomes via youth identity formation, and that this relationship is mediated by platform infrastructures and socio-cultural environments. To test this argument, then, we have to break out of many of the prevailing exposure-behaviour paradigms that have dominated much of influencer marketing studies. One key starting point concerns the operationalisation of influencer engagement. Many available sources quantify engagement using superficial measures such as the number of interactions or perceived credibility. Such measures are helpful but could confound attention with identification. To maintain the theoretical distinctiveness of the current framework, the concept of influencer engagement should be theorised as a symbolic and relational construct that encompasses perceived authenticity, aspirational appeal, relatability, and trustworthiness. These dimensions indicate how strongly one feels influenced by reference figures, rather than being a visible content producer. It becomes necessary to empirically distinguish between passive exposure and identity-relevant engagement lest the model collapse into persuasion theory.

The intervening variable of youth identity formation presents even greater substantive methodological issues. The view of identity as an attribute of stability or as a demographic description is commonly used in empirical studies, whereas the frameworks portray identity as an act of negotiation. To operationalise identity congruence, aspirational alignment, identity salience, and perceived belonging, special instruments are needed that are sensitive to interpretive meaning rather than mere attitudinal agreement. Without this subtlety, empirical testing will treat identity as another attitudinal variable, weakening the framework's ability to explain the transformation it aims to add. Also, the mediator role of positioning identity formation has significant theoretical implications. It also suggests that the effects of influencers

are neither direct nor homogeneous; conversely, the final behavioural consequences emerge when the influencers' stories are appropriately incorporated into young people's self-concept. When testing empirically, the effects to test are conditional indirect, rather than simple main effects. A moderated mediation design, i.e., structural equation modelling with interaction terms, would be particularly suitable, as it would enable the researcher to determine whether influencer engagement predicts consumer behaviour not only through identity alignment but also under which circumstances.

The fact that platform features are included only adds to the empirical landscape's complexity. Potential (i.e., platform) affordances: algorithmic amplification, interactivity, and visibility metrics are often relegated to the background of marketing research. However, the current paradigm implies that they are simultaneously constitutive of influence. This creates a very important question: do influencer effects lie in the individual charisma and narrative skill, or do they get exaggerated, and possibly misrepresented, by platform infrastructures that incentivise specific types of visibility and engagement? Empirical designs must thus specify the perceived algorithmic visibility, the intensity of social validation and the interactivity not as contextual terms but as moderators that can either enhance or deter identity alignment processes. Of the same importance is the influence of the socio-cultural context. A lot of influencer research implicitly assumes the universality of behaviour, based on Western consumer samples. This assumption is contested by the framework, which suggests that economic precarity, cultural hybridity, and perceived attainability are key factors in determining identity formation processes in African settings. The contextual indicators to be used in empirical studies should therefore include socio-economic status, perceived legitimacy of influencer lifestyles, and cultural value orientation, lest the same conclusion of universalism be reached. Conducting a conditional mediation test across socio-cultural statuses would help researchers determine whether identity-mediated influence is significant across communities.

A reasonable empirical strategy that aligns with this reasoning would include a survey-based moderated mediation model, which we would analyse using structural equation modelling, supplemented by qualitative interviews. Direct effects and interaction terms would be estimated using quantitative modelling, whereas qualitative methods would be used to clarify how youth recount identity alignment, ambivalence, or resistance. Mixed-method designs would be especially useful in the interpretive and contextual details that the framework would focus on. Nevertheless, potential limitations also should be mentioned. Identity negotiation measured using cross-sectional survey designs could be too busy to reflect over time. The longitudinal or experimental designs would also provide a stronger causal inference, especially in determining whether protracted engagement with influencers redefines aspirational self-concepts in the long run. In addition, self-reported measurements can also underscore insensible normative pressures or algorithm-shaping processes.

In the final analysis, the empirical test of this framework is not merely a matter of validating a mediation model; rather, it is a challenge to the more fundamental assertion that digital influence in African settings is an identity-making process linked to technological and socio-cultural systems. Examining moderated mediation rather than the direct effects of persuasion, in turn, allows researchers to transcend simplistic assumptions about the effectiveness of various influencers and to identify how identity, infrastructure, and context collectively drive marketing consequences. In this, the shift from the conceptual framework to the empirical model is not merely methodological but also theoretical. It forces the realignment of influencer marketing studies with identity processes, contingency in context and platform co-production. Provided it is rigorously tested, the model has the potential to rebalance how digital influence is interpreted in fast-changing African digital ecosystems.

Propositions Development

This section presents a set of theoretically grounded and empirically testable propositions derived from the conceptual framework. In line with the model, youth identity formation is placed at the centre, mediating between influencer engagement and consumer behaviour outcomes, while platform characteristics and the socio-cultural context act as conditioning factors. The propositions take a sequence to respond to the frame's causal reasoning.

The Influencer Engagement and Youth Identity Formation.

The model assumes that influencer engagement is a relational and symbolic process that exposes young people to aspirational stories and potential selves. Influencers are seen as authentic, relatable, and culturally proximal, making them salient reference groups. The fact that these stories are being repeated is likely to augment identity congruence and aspirational self-congruence.

P1: There exists a positive relationship between the influencer contact and the formation of youth identity.

This hypothesis posits that influencers' contact, realised through perceived authenticity, relatability, aspirational appeal, and interaction frequency, strengthens identity congruence, identity salience, and a sense of belonging. This association will be based on social identity theory and symbolic interactionism, which suggest that people align their self-concepts with preferred reference groups.

Identity Development and Consumer Behaviour Results.

The framework further supports the perspective that young people consume products not merely as a need, but as an identity statement. Influencer narratives become symbolic practices of identity performance and validation when incorporated into self-concept.

P2: The process of youth identity formation has a positive correlation with consumer behaviour outcomes.

The fact that the argument is based on the congruence between identity and aspirational alignment, which is expected to enhance purchase intention, brand affiliation, lifestyle adoption, and advocacy actions, supports this suggestion. The alignment of identity with consumer culture theory offers an interpretive framework through which influencer narratives acquire meaning from behaviour.

Mediation through Youth Identity Formation.

The key theoretical contribution of the model is to position identity formation as the process through which influencers' engagement is converted into behavioural outcomes.

P3: The connection between influencer engagement and the consumer behaviour outcomes is mediated by youth identity formation.

This suggestion implies that influencer engagement does not directly influence behavioural change; rather, its effects are mediated by identity congruence and aspirational alignment. This mediated pathway can be empirically distinguished by comparing persuasion-based and identity-based accounts of influencers' effectiveness.

Moderating Effect of Characteristics of Prospects.

Online spaces are not safe mediums of influence. Interactive and social validation measures, such as algorithmic amplification, can increase exposure levels and socialisation of identity.

P4: Platform features mediate the relationship between influencers' engagement and youth identity development in a positive way, with this relationship being more robust in highly interactive, algorithmically enhanced environments.

This proposal exemplifies the platform affordance viewpoint, as it acknowledges that technological infrastructures organise visibility and validation procedures. It is assumed that identity salience will increase with high levels of algorithmic reinforcement and social feedback, and that identity alignment will weaken with low visibility or reduced interactivity.

Mediating Effects of Socio-Cultural Situation.

The process of youth identity formation is inherent in the socio-economic reality and culture. Influencer narratives can have various impacts depending on perceived attainability, legitimacy, and cultural proximity.

P5: There is a moderate effect of socio-cultural context on influencer engagement-young identity formation relationship, i.e., a stronger relationship is observed between the two variables when the narratives of the influencers are considered as culturally acceptable and economically accessible.

This suggestion recognises contingency in a situation and questions universalism. Engagement might not result in identity alignment, where the influencer's lifestyle is viewed as unachievable or variously dissonant with cultural values and traditions.

Conditional Indirect Effects.

Considering the moderating effects of platform attributes and socio-cultural context, the general indirect impact of influencer engagement on consumer behaviour would differ across technological and contextual environments.

P6: The moderating influence of influencer engagement on the effect on consumer behaviour results based on the youth identity formation is greater in the case of high platform amplification and high alignment of the socio-cultural conditions.

The mediated mediation form of the model is encapsulated by this last suggestion. It stresses that identity-mediated consumption is not unequivocal; it depends on both the presence of technological enhancement and the resonance of the context.

Collectively, these propositions conceptualise the identity formation influenced by the community of influencers as a context-sensitive process rather than a linear persuasion mechanism. The bridging of interpretive formulation between engagements and behavioural expression is situated within identity formation, and the platform infrastructures and socio-cultural conditions shape the process's strengths and limits. The framework will provide a clear basis for empirical modelling with a moderated mediation design by spelling out these propositions in stand-alone, testable ways. It further underscores the paper's broader theoretical contribution by returning social media influencers to their role as identity-constituting actors integrated into platform economies and socio-cultural regimes, rather than treating them as discrete marketing tools.

Table 1. Conceptual Framework: Social Media Influencers and Youth Identity in Africa

Proposition	Diagram Representation	Conceptual Role
P1	Influencer Engagement → Youth Identity	Core causal mechanism (aspirational identification)
P2	Youth Identity → Consumer Behaviour	Identity-based consumption logic
P3	Platform Characteristics → P1	Technological amplification
P4	Socio-Cultural Context → P1	Contextual interpretation
P5	Socio-Cultural Context → Indirect Path	Conditional mediation

Table 1 explicitly shows identity as the mediating construct, not behaviour as a direct outcome of influence. It illustrates how social media influencer engagement shapes youth identity formation in Africa and translates into consumer behaviour outcomes. Youth identity operates as the central mediating mechanism, while platform characteristics and socio-cultural context condition the strength and direction of influence.

Implications

The framework constructed in this paper reposes influencer marketing in the African settings as an identity-mediated and structurally predisposed mechanism. The analysis generalises current scholarship by foregrounding the construction of youth identity as the interpretative mediating variable between influence, engagement, and consumer behaviour, and by providing theoretical, practical, policy-focused, and methodological implications.

Theoretical Implications

Theoretically, the study can be seen as a contribution to the current discussion of identity formation in digitally mediated space. Earlier research has identified that the concept of identity among youth is negotiated through interaction, visibility, and social validation (Brough et al., 2020; Ezzat, 2020), although much of this literature views identity as a demographic attribute or a comparatively fixed antecedent of consumption. In comparison, the current framework conceives identity as relational and dynamic - being constructed with the repetitive intercourse with influencers who act as figures of the cultural reference obtainable in platform economies and which are available to view. It is based on social identity theory and incorporates the focus on symbolic consumption and identity performance of consumer culture theory (Brough et al., 2020). In addition, the framework proposes increased contextual sensitivity of marketing theory. Research on influencers has been skewed towards the West and has usually assumed stable consumer conditions and homogeneous digital infrastructures. The model attacks tacit universalism by pre-empting economic precarity, cultural hybridity, and structures of unequal opportunity in African contexts (Sumberg et al., 2021; Mwaura et al., 2023). It is recommended that identity alignment processes are determined not only by symbolic narratives but also by socio-economic realities that predetermine their perceived feasibility and authenticity. By doing so, the research expands the body of scholarly work on digital identity by situating influencer impacts within a structurally limited yet culturally diverse space (Echesony, 2024).

Practical and Policy Implications.

In practice, the results imply that influencers' effectiveness cannot be determined solely by reach and engagement metrics. When there is congruence between identity and behaviour, then symbolic resonance is a more valuable strategic measure. It has been shown that influencers'

credibility, perceived authenticity, and relatability are key factors in influencer credibility among young people (Dinh and Lee, 2021; Ghosh and Islam, 2023). Thus, influencer relationships to consider more are those with cultural proximity and narrative consonance than aspirational distance, which may lead to alienation. In situations where influencers' narratives resonate with meaningful local aspirations (e.g., mobility, entrepreneurship, or local recognition), the possibility of identity-mediated engagement increases. On the contrary, when lifestyles are perceived as beyond economics or culturally incongruent, participation can produce tension rather than congruence (Hill, 2011). Ethical and regulatory implications are also discussed. The sphere of influencer communication is becoming increasingly important in shaping not only consumption patterns but also identity discourses (Vogel et al., 2020). Consequently, there is a need to foster transparency in sponsorship disclosures and to establish clearer accountability criteria, especially when working with young age groups (Cao & Belo, 2024). Regulatory vigilance is justified, as there is evidence that normative portrayals can shape perceptions of acceptable behaviour (Rothman et al., 2019) and that social comparison processes can contribute to the formation of unrealistic expectations (Sussman et al., 1988). In addition to the regulatory approach, the framework identifies positive ways to leverage influencer partnerships for public value. Influencers have proven to organise youth civic action (Dambo et al., 2020) and effectively deliver culturally appealing health-related messages (Andrade et al., 2018; Burns & Arnault, 2019). These partnerships should, however, not be tokenistic or ethically compromised, as they are prone to commodifying vulnerability.

Methodological Implications

The theoretical perspectives discussed in this paper also indicate significant methodological factors for future studies on social media, identity, and consumer behaviour. Due to the contextual sensitivity and complexity of influencer-youth interactions, there is a need to shift toward approaches that are not single-method designs. To gain a more detailed insight into how identity meanings are formed and negotiated in the context of digital interaction, be considered a valid choice (Wilf & Wray-Lake, 2021). Wilf and Wray-Lake (2021) note that quantitative modelling is preferable to qualitative investigation because it can help to study psychopolitical and identity relationships in digital environments. Similarly, participatory methods that engage young individuals as co-researchers may also lead to greater contextual validation and minimise interpretive imposition (Jancey et al., 2024; Watson & Marciano, 2015). It is especially so in non-Western settings, where imported measurement structures may be insufficiently culturally sensitive and may reflect structural disparities (Votta et al., 2024). Test of identity-mediated influence models, therefore, requires a context-sensitive methodology, which is desirable.

These implications call for an overall re-evaluation of digital marketing scholarship. Influencer marketing in Africa operates within identity ecosystems shaped by platform affordances, socio-economic constraints, and cultural negotiation. The success of digital influence is not determined by the intensity of exposure but rather by the correlation between the influencing side's storylines and the amplification of infrastructures and socio-cultural legitimacy. In the case of theory, this requires identity-oriented and context-specific models. To practice, it needs authenticity- and attainability-based selection of influencers with resonance quality. In the case of policy, it requires clear regulation and empowerment of the youth. By incorporating influencers' engagement into identity processes and structural conditions, the study offers a more responsible and sophisticated insight into digital influence in fast-changing African digital environments.

Conclusion

This theoretical paper has explored social media influencer-youth identity creation in African contexts, arguing that influencer engagement should be viewed as an identity-mediated phenomenon rather than a transactional, linear path to persuasion. The key contribution is the rethinking of influencers as culturally rooted mediators whose power extends beyond consumption to symbolic bargaining over belonging, aspiration, and self-definition. Influencer material is not merely relevant in this reading because it is also promotional, but because it provides the resources of identity that young people choose to adopt, rebrand, or selectively oppose as they negotiate among uncertainty, cultural hybridity, and socioeconomic restriction. As a result, the framework argues that youth identity development is the primary mechanism by which influencers' engagement can be translated into downstream marketing practices, and that, through platform affordances and socio-cultural context, relationships can be stronger and more directional.

Another contribution of the paper is the possibility of situating influencer culture within broader arenas of civic engagement and self-expression. Social media in most African contexts is not just a marketing infrastructure but a platform on which youth identities are externally enacted, resisted, and collectivised through community-building and digitally mediated activism. This is important because civic engagement and consumption are not neatly separable; instead, they often coexist within the same platform ecosystems and influencers' narratives. Digitally mediated civic engagement and youth-led movements can both demonstrate how platforms help African youth to take charge and form generational identities that cross into the commercial sphere (Gbandi et al., 2025). Identifying this overlap is essential to understanding why influencer narratives are likely to exhibit higher levels of legitimacy, resonance, or resistance, depending on the extent of their alignment with local moral economies and lived realities.

Simultaneously, the conceptual approach has obvious limitations that should be mentioned. To start with, the model makes no empirical judgment between rival causal explanations, nor can it even affirm in advance that identity formation is related to, or even concurrently develops with, consumption, or that it is sometimes even affected by it. Second, there is no single African analytical setting: the model must overlook significant heterogeneity in digital connectivity, socio-economic inequalities, cultural values, and institutional credibility. Third, the model fails to answer the question of time in relation to permanence- can the alignment of identity driven by influencers be short-term, intermittent, or long-term? Lastly, platform development and algorithmic transformation are not fully reflected in the framework, and they can remake visibility, perceptions of authenticity, and identity processes in ways that cannot be easily theorised using stagnant concepts.

These restrictions directly indicate future empirical study priorities. First, research must be conducted to verify the model using moderated mediation designs that treat identity formation as a mediating variable and the platform/context as conditioning factors, and to explore other pathways. Second, empirical studies ought to focus on contexts that are most theoretically informative rather than on those that are convenient. Comparing designs across urban and rural contexts, or high- and low-connectivity contexts, would help clarify when influencer narratives lead to identity congruence and when they do not. Third, it is necessary to do platform-specific analysis: compared to platforms where identity performance is more controlled and persistent (such as Instagram), short-form video platforms with rapid algorithmic amplification (such as TikTok) may promote social comparison and identity salience more. Fourth, rival explanations must be explicitly tested, such as peer influence, family socialisation, offline community norms, and socio-economic constraints, so that the

effect of the influencers cannot be attributed to them excessively. Longitudinal designs would be particularly useful for determining whether identity change is maintained and whether cumulative effects or diminishing returns are observed with repeated exposure.

In practice, the framework suggests that influencer marketing strategies should be evaluated based on reach and engagement metrics, as well as the level of cultural resonance, perceived credibility, and relatability inherent in influencer narratives. For policymakers and educators, this implies that influencer ecosystems can be mobilised to benefit people, including through civic engagement and social awareness, but that clear ethical protections and accountability mechanisms must be put in place, given the vulnerability of youth during identity formation. Generally, influencer marketing in Africa is reconceptualised in an identity-based, context-sensitive manner, as developed in the paper. The framework provides a platform for more theoretically rigorous, empirically grounded studies by treating influence as an identity-making process co-determined by platform affordances and socio-cultural realities, and no longer reliant on overarching assumptions, thereby representing the complexity of contemporary African digital life.

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The Influence of Digitalization of Hotel Services on Marketing Performance: A Case of Dar es Salaam Hotels

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Abstract

This study examines the influence of digitalization on marketing performance within the hotel industry, specifically, it focuses on hotels in Dar es Salaam City Tanzania. The study examines the link between marketing performance and three key aspects of digitalization in hotels which are online booking systems, digital marketing strategies, and customer relationship management (CRM) systems. Through confirmation factor analysis approach, the study finds that all three studied digital components positively influence hotel marketing performance. Online booking systems enhance operational efficiency and customer convenience, leading to improved marketing outcomes. Digital marketing efforts, including social media and targeted online campaigns, significantly boosts hotel visibility and engagement with potential guests. CRM systems contribute to personalized customer interactions and loyalty, further driving marketing success. This study provides valuable insights for hotel managers and industry stakeholders, by highlighting the importance of digitalization in achieving marketing excellence. The results support a comprehensive marketing strategy that, in order to meet the demands of the modern hotel market, the advantages of digital tools and customer relationship management are vital.

Keywords: *Digitalization; Online Booking System; Digital Marketing Strategies; Customer Relationship Management (CRM) Systems.*

Introduction

Marketing performance is a critical indicator of a hotel's success, reflecting its ability to attract customers, generate revenue, and maintain a competitive position in the market (Harif, Nawaz, & Hameed, 2022). Globally, the hotel industry has undergone a digital transformation, with many businesses leveraging digital technologies to enhance their marketing strategies (Lazić, Bradić-Martinović, & Banović, 2023). The integration of online booking systems, digital marketing, and Customer Relationship Management (CRM) systems has become key to improving customer experiences and achieving better marketing outcomes (Adnan, Rahayu, Hendrayati, & Yusuf, 2021). Digital platforms allow hotels to expand their market reach, streamline operations, and deliver personalized services, all of which contribute to improved marketing performance (Geremew, 2024).

With the advent of digital technologies and their integration into the hospitality industry, hotels have witnessed significant improvements in their marketing performance (Yeo, Tan, Kumar , Tan, & Wong, 2022). The utilization of digital platforms has become a necessity for hotels to stay competitive and meet the evolving demands of their target audience (Parvez, Öztüren, Cobanoglu, Arasli, & Eluwole, 2022). How services are offered using digital transformation in the hotel industry encompasses various aspects, including the adoption of technology-driven marketing strategies, the implementation of advanced software and systems, and the

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enhancement of customer experiences through digital innovations (Jayawardena, Ahmad, Valeri, & Jaharadak, 2023). By embracing digitalization, hotels can effectively engage with their target market, create personalized marketing campaigns, and gain a competitive edge in the industry (Jayawardena et al., 2023).
In Africa, the adoption of digital technologies in the hospitality sector is growing rapidly, driven by increasing internet penetration, mobile phone usage, and changing consumer behavior (Ejiofor, Ajah, & Ogbonna, 2020). Countries such as South Africa, Kenya, and Nigeria have experienced significant growth in the use of digital marketing tools and online booking platforms, which have helped local hotels enhance visibility and customer engagement (Mkwizu, 2020). In Tanzania, the hospitality industry is beginning to embrace digitalization as hotels seek to improve service delivery and enhance competitiveness in the global market (Abeba, 2024). However, the relationship between digitalization and marketing performance in Tanzania's hotel industry remains under-explored, making it a key area for further research (Esho & Verhoef, 2020).

The impact of service digitalization is profound, with the advent of digital technologies and their integration into the hospitality industry. Hotels have witnessed significant improvements in their marketing performance (Yeo et al., 2022). The utilization of digital platforms has become a necessity for hotels to stay competitive and meet the evolving demands of their target audience (Parvez et al., 2022). How services are offered using digital transformation in the hotel industry encompasses various aspects, including the adoption of technology-driven marketing strategies, the implementation of advanced software and systems, and the enhancement of customer experiences through digital innovations (Jayawardena et al., 2023). By embracing digitalization, hotels can effectively engage with their target market, create personalized marketing campaigns, and gain a competitive edge in the industry (Jayawardena et al., 2023).

In the competitive hospitality market of Dar es Salaam, Tanzania, where customer preferences and behaviors are continually evolving, the adoption of digital solutions offers hotels a chance to optimize their marketing efforts, reach a broader audience, and build lasting customer relationships (Bardukova, 2023). Online booking systems simplify the reservation process, digital marketing enables hotels to engage with customers through personalized and targeted campaigns, and CRM systems help manage customer interactions, enhancing customer satisfaction and loyalty (Halkiopoulos, Antonopoulou, Papadopoulos, Giannoukou, & Gkintoni, 2020). Despite these benefits, there is still a need to empirically assess how these digitalization efforts translate into improved marketing performance (Barakael, 2021).

The digital revolution has fundamentally transformed hotel operations and management, positioning digital technologies as key drivers of efficiency and competitive advantage within the sector (Busulwa, 2020). Traditionally viewed as a labor-intensive industry, hotels have seen significant changes in operations and performance due to the integration of digital technologies (Ahmad & Scott, 2019). Digital transformation, defined as "a process aimed at enhancing an entity by initiating significant changes through the integration of information, computing, communication, and connectivity technologies" (Vial, 2021), has introduced innovations like self-service technologies, robots, block chain, big data analytics, mobile apps, social media, and information systems, revolutionizing hotel management and value chains (Buhalis et al., 2019; Pencarelli, 2020).

These technologies enable hotels to streamline services, manage orders, optimize demand and resources, and enhance relationships with both customers and suppliers. As a result, hotels experience improved financial performance, increased competitiveness, enhanced service quality, better resource utilization, greater flexibility, and innovation (Lenuwat & Boon-itt,

2022). While the global hotel industry has benefited from the adoption of digital technologies, the extent to which digitalization influences hotel marketing performance in Tanzania remains unclear (Mwemtsi, William, & Mhache, 2023). The use of online booking systems, digital marketing, and CRM systems is becoming more prevalent, yet there is limited empirical evidence to support the direct impact of these technologies on marketing performance in the local context (Chinakidzwa & Phiri, 2020). This study specifically analyzes influence of digitalization of hotel services on marketing performance taking hotels in Dar Es Salaam as example.

Theoretical Reviews

The resource-based view (RBV) theory, introduced by Barney (1991), posits that companies can create a sustainable competitive advantage by effectively leveraging and combining their unique resources. These resources encompass both tangible and intangible assets, including physical, financial, human, and technological resources (Hancco, 2022). The RBV theory emphasizes that the strategic utilization and integration of these resources in a way that is difficult for competitors to imitate or replicate can lead to superior performance and market success (Madhani, 2021).

In the context of this study, the RBV theory provides a valuable framework to examine the influence of service digitalization on the marketing performance of hotels in Tanzania. By identifying and leveraging digital innovations as valuable resources, hotels can enhance their performance advantage and differentiate themselves in the market. The theory suggests that the adoption and effective utilization of digital resources, such as digital marketing strategies and innovative technologies, can lead to improved marketing performance, customer loyalty, and perceived quality of hotel services.

Empirical Reviews

Premasinghe et al. (2021) examined the pivotal role of digital marketing platforms in enhancing hotel marketing and customer interaction strategies, recognizing that contemporary hotel customers increasingly depend on digital media. Despite this trend, the adoption of digital marketing tools among listed hotels in Sri Lanka remains relatively low, largely due to a lack of familiarity and confidence in the effectiveness of these tools for achieving desired financial and non-financial results. Chakraborty and Biswal (2020) examined a growing trend where consumers increasingly rely on online hotel reviews to inform their booking decisions. The study pointed that exposure to these reviews shapes the brand perception of hotels, thereby influencing consumers' intentions to book. Specifically, it investigates the mediating role of brand image in the relationship between credible online hotel reviews and consumers' booking intentions.

Khalayleh and Al-Hawary (2022) assessed the impact of the digital content marketing mix on the marketing performance of five-star hotels in Jordan. The study identifies four key dimensions of the digital marketing mix-digital marketing database, social media platforms, digital pricing, and digital advertising-and assesses their influence on marketing performance indicators such as customer loyalty, customer satisfaction, and the ability to attract new customers. Findings reveal that all dimensions of the digital marketing mix positively affect the marketing performance of these hotels.

Al-Gasawneh et al. (2021), evaluated the understanding of service quality by exploring the effects of customer relationship management (CRM) dimensions through the lens of resource-based view (RBV) theory. Employing a quantitative methodology, the study collected data from general managers of hotels in Jordan and analyzed it using partial least squares structural equation modelling (PLS-SEM). The findings reveal that key CRM dimensions-

customer focus, knowledge management, and CRM-based technology-positively influence service quality, highlighting their importance in the hospitality sector. Conversely, the study finds that the organizational aspect of CRM negatively affects service quality. These insights provide valuable implications for hotel management in Jordan and may serve as a reference for hotels worldwide facing similar challenges, emphasizing the need to prioritize effective CRM strategies to enhance service quality

Khaki and Khan (2024) examined the factors that motivate hotels in Jammu and Kashmir to adopt social media marketing (SMA) with the goal of improving performance, while also investigating the mediating role of customer relationship management capabilities (CRMC). Findings reveal that factors such as perceived usefulness, perceived ease of use, cost-effectiveness, institutional pressure, and structural assurance significantly influence hotels' adoption of SMA. Additionally, SMA adoption was shown to enhance hotel performance, with CRMC playing a partial mediating role.

Online Booking and Hotel Marketing Performance

Online booking involves enabling customers to make reservations through digital platforms, offering convenience and accessibility. It enhances customer experience by simplifying the booking process and allowing access to hotel services at any time (El-Said, 2020). Online booking systems have a substantial effect on hotel marketing performance by expanding market reach and improving customer engagement. They significantly boost hotel visibility, improve customer acquisition, and facilitate better customer relationship management (Chakraborty & Biswal, 2020).

Research indicates that online booking systems contribute to higher customer satisfaction and retention rates, as they streamline operations and create a seamless customer experience (Abdalla, 2024). Online reviews, a key component of online booking systems, influence booking decisions and impact the reputation and marketing outcomes of hotels. Managing customer feedback and reviews is crucial to maximizing booking conversions (El-Said, 2020).

***H_1**: Online booking has a positive influence on hotel marketing performance*

Digital Marketing Strategies and Hotel Marketing Performance

Digital marketing encompasses the use of various digital channels, such as social media, search engine optimization, and online advertising, to engage customers and promote hotel services. It plays a critical role in building brand visibility, enhancing customer relationships, and driving sales (Khalayleh & Al-Hawary, 2022). Digital marketing has a substantial effect on hotel marketing performance by improving customer engagement, boosting brand loyalty, and attracting new customers (Hudak, Kianičková, & Madleňák, 2017).

Research shows that digital marketing strategies, such as personalized promotions and interactive content, positively influence customer satisfaction and retention rates (Giantari, Yasa, Suprasto, & Rahmayanti, 2022). Digital marketing efforts, particularly through social media and email campaigns, can lead to significant increases in hotel bookings and customer loyalty (Nuseir & Refae, 2022). Moreover, data-driven digital marketing helps hotels optimize their marketing efforts by targeting the right audience and improving conversion rates (Thaha, Maulina, Muftiadi, & Alexandri, 2021).

***H_2**: Digital marketing has a positive influence on hotel marketing performance*

Customer Relationship Management Systems and Hotel Marketing Performance

Customer Relationship Management (CRM) systems involve managing a hotel's interactions with current and potential customers. They help in maintaining relationships, analyzing customer data, and personalizing services, which enhances customer satisfaction and loyalty (Sofi, Bashir, Parry, & Dar, 2020). CRM systems have a substantial effect on hotel marketing performance by improving customer retention and engagement (Al-Gasawneh, Anuar, Dacko-Pikiewicz, & Saputra, 2021).

CRM systems positively affect brand building, customer relationships, and overall service quality, enabling hotels to deliver personalized experiences (Nuseir & Refae, 2022). Studies show that CRM systems also contribute to better customer satisfaction rates and higher profitability by enhancing customer communication and tailored offerings (Mahafzah, Aljawarneh, Alomari, Altahat, & Alomari, 2020). CRM-based technologies allow for effective data management, helping hotels optimize their marketing strategies and customer retention efforts (Sofi et al., 2020).

H3: Customer relationship management systems have positive influence on *hotel marketing performance*

Methods

This study was conducted in the Dar es Salaam region which is the biggest Commercial city in Tanzania. The region has also been selected given its leading position in tax collection in the country which entails the liveliest business dealings across the country. The study has focused on business hotels and given the city's status as a major economic and commercial hub in Tanzania, there are several business hotels catering to the needs of business travelers. The sample size was 206 hotels and data collection was conducted using questionnaires with a 5-point Likert scale, which included close-ended questions ranging from 1 = Strongly Disagree to 5 = Strongly Agree. A total of 119 males participated in the study, accounting for 58% of the total participants, while 87 females participated, representing 42% of the respondents. A total of 167 hotels (67%) rated up to 3 stars and remaining 69 hotels (33%) were rated 4-5 stars.

Results

Reliability of the data used to determine whether a collection of items consistently measured the same characteristics and was assessed using Cronbach's Alpha and Composite Reliability (CR). Table 1 below shows that Cronbach Alpha for each construct has exceeded the required limit of 0.70 according to Nunnaly and Bernstein (1994). Composite reliability values were all found to exceed a benchmark of 0.7 (Hair et al., 2010). Convergent Validity intends to see how big indicator converges or shares in a single construct. An indicator is said to converge if it has a factor loading value which is high and significant. In addition, it has a standardized factor loading estimate greater than 0.5 (Hamdan et al, 2011). Convergent Validity was determined by Average Variance Extracted (AVE) and was found to be above the threshold value of 0.50 for all constructs (See table 1 for details).

Table 1: Construct Reliability and Convergent Validity

Items	Cronbach's Alpha	Composite Reliability	AVE
Customer Relationship Management (CRM)	0.859	0.861	0.641
Digital Marketing (DM)	0.825	0.832	0.535
Hotels Marketing Performance (HMP)	0.881	0.884	0.629
Online Booking (OB)	0.783	0.789	0.532

Source: AMOS 23 Output

Structural model and path analysis

The results with path coefficients are presented as Table 2 which shows that four out of five predictors to have a significant impact on e-commerce practices; thus supporting all the four hypothesized relationships while one predictor (perceived risk) found to be insignificant. The squared multiple correlation of the study was 0.592 which means, 59.2% of the variations in the hotel marketing performance is explained with the three predictors. Using Hair et al. (2017) criteria for R^2 the model moderately predicts hotel marketing performance.

Table 2: Estimated results of the structural model and hypotheses test outputs

Hypothesized Relationship	Standard Estimates	t-value	p-value	Decision
CRM -> HMP	0.248	3.834	0.016	H1 Supported
DM -> HMP	0.376	4.733	0.018	H2 Supported
OB -> HMP	0.307	4.243	0.029	H3 Supported
R-Square	0.592			

Source: AMOS 23 Output (2024)

Model Fit

The model-fit measures were used to assess the overall goodness using CMIN/df; Comparative Fit Index (CFI); Normed Fit Index (NFI); Tucker- Lewis Index (TLI); Standardized Root Mean Squared Residual (SRMR) and Root Mean Square Error of Approximation (RMSEA) and all values were found to be within their respective common acceptance levels as detailed in table 3 below.

Table 3: Model Fit Thresholds

Fit Indices	**Recommended Value**	**Sources**	**Obtained Value**
CMIN(Chi-square/df)	<3.0	Kline (2005)	1.783
CFI	>.90	West et al (2012) Fan et al (1999)	.979
TLI	>.90	Bentler and Bonett (1980)	.950
SRMR	<.05	Diamantopoulos and Siguaw (2000)	.043
RMSEA	.05 – .10	MacCallum et al (1996)	.052

Source: AMOS 23 Output

Discussion

Hypothesis 1 asserts that Online Booking (OB) positively affects hotel marketing performance (HMP). The study's results show a path coefficient of $\beta = 0.307$ with a p-value less than 0.005, indicating a significant and positive relationship. The positive relationship between online booking and marketing performance highlights the critical role of digital channels in modern hotel marketing. These results concur with Sakas et al. (2022) who reveals that; in contrast to the websites of other industries, such as logistics where customers want to complete their inquiries as quickly as possible and leave the webpage, it is advantageous for tourism websites to keep customers' attention more in their websites to increase visibility.

Hotels might consider expanding their online presence, optimizing their websites for search engines, and engaging more actively with customers on social media to maximize their marketing impact. This investment not only helps in increasing bookings but also in building a stronger brand presence in a competitive digital landscape.

Hypothesis 2 examines the relationship between Digital Marketing (DM) and hotel marketing performance, revealing a path coefficient of $\beta = 0.376$ and a p-value less than 0.005. This significant positive effect indicates that digital marketing activities-such as content marketing, email campaigns, and pay-per-click advertising-substantially contribute to enhancing hotel marketing performance.

The strong relationship between digital marketing and marketing performance suggests that digital marketing strategies are highly effective in driving hotel success. Digital marketing encompasses a broad range of techniques that can be tailored to target specific customer segments and track performance metrics accurately. This result highlights the importance of integrating diverse digital marketing tactics to achieve optimal results. These results resonate with Nuseirand Refae (2022) who validated that digital marketing capabilities have a significant impact on business performance. The implication is that hotels should adopt a comprehensive digital marketing approach, leveraging various tools and platforms to boost their visibility and attract a larger audience.

Hypothesis 3 investigates the impact of Customer Relationship Management (CRM) systems on hotel marketing performance. The path coefficient of $\beta = 0.248$ and a p-value less than 0.005 indicates a positive relationship. CRM systems facilitate improved customer service, targeted promotions, and better customer insights, but these benefits may translate into marketing performance over a longer period or in combination with other strategies. These results are closely similar to those by Rane, Achari and Choudhary (2023) who delved into measuring and sustaining customer experience, particularly in online settings, and discussed the impact of social media and technology on the customer experience. The authors indicated that Customer relationship management (CRM) is a crucial strategy for enhancing customer loyalty. Hotels might need to complement CRM systems with strong online and digital marketing initiatives to fully leverage their benefits.

Conclusion

The findings highlight the significant role of online booking, digital marketing, and customer relationship management (CRM) systems in enhancing hotels' marketing performance. As evidenced by the study, it is crucial for hotels to invest in improving their online presence and digital marketing strategies while integrating robust CRM systems. Enhancing website usability, optimizing social media engagement, and utilizing data-driven CRM tools can help

hotels better understand and cater to customer needs. By focusing on these areas, hotels can significantly improve their marketing performance and gain a competitive advantage in an increasingly digital marketplace.

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Understanding Indigenous Language Communication at Home: A Social Marketing Integrative Theory Approach to Parents' Indigenous Language Use Intention in Ghana

Introduction

Indigenous languages not only carry traditions, customs, and collective memories but also play an important role in effective communication. UNESCO states that indigenous languages strengthen cultural identity, promote social inclusion, and embody the essence of people's identities, cultures, and knowledge systems. UNESCO observes that children with a solid foundation in their mother tongue tend to develop strong literacy skills in the language used at school (UNESCO, 2023; Taff et al., 2018). Conversely, early exposure to a foreign language disrupts their vocal and verbal abilities, thought processes, and cognitive balance. In Ghana, more than 73 indigenous languages are spoken, with 11 having written forms approved for use in schools (Ethnologue, 2025; Bureau of Ghana Languages, 2021).

Despite this linguistic diversity, English remains the preferred and most "prestigious" language for communication in most Ghanaian homes. This preference is so strong that even parents who are not fluent in English often communicate in a pidgin form of the language rather than in their native tongue. In many Ghanaian households, speaking English with children has become the norm, even though the home is considered the best place to preserve and pass on indigenous languages to younger generations. As a result, the use and intergenerational transmission of indigenous languages have steadily declined, especially in urban areas (Ansah, 2014; De Houwer, 2007). This decline has serious implications for cultural alienation, limited access to public services for non-English speakers, and the eventual loss of linguistic diversity.

To address these challenges, the Government of Ghana has launched initiatives to promote the use of indigenous languages among parents and teachers, including the National Literacy Accelerated Programme (NALAP). Recently, the Ministry of Education's mother-tongue policy has aimed to use local languages as a medium of instruction in public basic schools to enhance children's cognitive development (myjoyonline, 2025). However, implementation challenges remain, and the expected behavioral shift toward using indigenous languages at home has not been fully realized. This study emphasizes the need for interventions that go beyond policy and suggests the application of social marketing theories grounded in behavior change to influence parents' use of indigenous languages when communicating with children at home.

While previous research on indigenous languages has mainly focused on policy, sociolinguistic dynamics, and institutional reforms (Polsky, 2009; Hornberger & King, 2001; Grenoble & Whaley, 2006; Dako & Quarcoo, 2023), there appears to be a paucity of studies that apply a social marketing framework grounded in behavior change theories to influence behavior related to indigenous language use. This study fills that gap by proposing a social marketing model grounded in integrative behavioral change theories to understand parents' intentions to use indigenous languages in Ghanaian homes. The study responds to the idea that well-designed social marketing efforts, grounded in integrative behavior change models, significantly improve indigenous language use behaviors (Amoah et al., 2022; Grenoble & Whaley, 2006).

Therefore, this study combines the Theory of Planned Behavior (Ajzen, 1991) and Social Cognitive Theory (Bandura, 2001) to explain intentions to use indigenous languages in Ghanaian homes. Scholars argue that integrating multiple theories offers a more effective approach to promoting behavior change (Gourlan et al., 2016; Ntoumanis et al., 2021). They suggest that no single theory fully explains the complexity of human behavior, and that combining them helps clarify why people act as they do. For example, while Theory of Planned

Behavior (TPB) explains intention based on attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991), and does not account for environmental influences,

Social Cognitive Theory (SCT) emphasizes behavior can be influenced by environment, self-efficacy, observational learning, and reinforcements, and overlooks the roles of attitudes, subjective norms, and perceived control in shaping intentions (Glanz, Rimer, & Viswanath, 2015). We believe that integrating these theories addresses the various factors that influence parents' intentions to use indigenous languages (NSMC, 2012; Gourlan et al., 2016; Ntoumanis et al., 2021).

This study makes several contributions: first, it highlights the importance of integrating multiple theories to understand complex behaviors, such as language use. Second, it develops a framework to explain what drives parents' intentions to use indigenous languages in behavior-change campaigns. With this, Ghanaian parents can be encouraged to include indigenous languages in their communication with children at home. The findings will inform public policies, educational programs, and advocacy efforts. Additionally, the study supports Ghana's development goals by fostering the preservation of linguistic heritage and promoting indigenous languages. Lastly, it examines how attitudes, subjective norms, and self-efficacy relate to parents' intentions to use their native language, and how reinforcement, behavioral capacity, and environmental factors mediate these relationships. Thus, the study aims to achieve the following objectives: 1. To investigate the relationship between attitude, subjective norms, and self-efficacy and parents' indigenous language use intention, 2. To determine the mediating role of reinforcement, behavioral capacity, and environmental forces on the relationship between attitude, subjective norms, self-efficacy, and parents' indigenous language use intention.

Theoretical Review

The Theory of Planned Behavior posits that intention is determined by attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991). Thus, individuals develop an intention based on a favorable attitude, positive opinions of significant others, and the perception that a particular behavior is under their control. TPB has been applied to household recycling behavior, pro-environmental behavior, physical exercise behavior, and health behavior, among others (Zhang et al., 2025; Tweneboah-Koduah et al., 2023).

On the other hand, Social Cognitive Theory (SCT) explains how human behavior is shaped by the continuous, reciprocal interaction among personal, behavioral, and environmental factors, with observational learning and self-efficacy playing central roles (Bandura, 1977). SCT provides a foundation for understanding how individuals acquire knowledge, skills, and behaviors through social interactions (Dodgers et al., 2023; Tang et al., 2023). The theory thus suggests that humans can acquire knowledge and skills by observing others and has been employed in tobacco use campaigns among youth (Evans et al., 2015), recycling behavior (Tabernero & Hernández, 2011), and physical activity interventions (Plotnikoff et al., 2010).

While this study draws on both the Theory of Planned Behavior (TPB) and Social Cognitive Theory (SCT), it integrates only a subset of constructs from each theory. Specifically, perceived behavioral control is excluded due to its conceptual overlap with self-efficacy; both constructs capture an individual's perceived capability to perform a behaviour, and; including both would introduce redundancy and multicollinearity into the model

(Montano & Kasprzyk, 2015; Glanz et al., 2015). Self-efficacy has been found to be a strong predictor of intention (Bandura, 1997; Montano & Kasprzyk, 2015).

Similarly, observational learning was excluded from SCT because it has a conceptualization similar to that of subjective norms (Bandura, 1986; Ajzen, 1991). These adaptations follow the recommendations of Glanz et al. (2015) and Luca & Suggs (2013), who advocate for theory integration based on contextual relevance and parsimony. Therefore, the study theorizes that attitude, subjective norms, and self-efficacy directly influence parents' intention to use their indigenous language at home. At the same time, this relationship is mediated by SCT's reinforcement, behavioral capacity, and environmental factors.

Hypotheses Development

Attitude and Parents' Indigenous Language Use Intention

According to Ajzen (1991), individuals with favorable attitudes toward a behavior are more likely to form strong intentions to perform that behavior. This has been supported in various contexts, including language use, health behavior, and consumer behavior. For instance, Tulloch (2018) found that in indigenous communities in Canada, positive attitudes toward native languages strongly predicted both intention and actual use. Similarly, Albury (2018); Nyamekye (2024) found that students were more likely to intend to use Indigenous languages when they held a favorable disposition toward them. In a study on language use among university students in Ghana, Nyamekye (2024); Dzameshie (2002) reported that positive attitudes significantly influenced the intention to speak indigenous languages. Anyidoho and Kropp Dakubu (2019) analyzed Ghanaian language practices and emphasized that positive attitudes, fostered through education, significantly influence the intention to preserve indigenous languages. We therefore hypothesize that parents' positive attitudes toward indigenous languages are likely to lead to an intention to use them.

H1: Attitude towards indigenous language use positively influences Parents' intention to use indigenous languages.

Subjective Norms and Parents' Indigenous Language Use Intention

Subjective norms refer to the perceived social pressure to perform or avoid behavior. According to the Theory of Planned Behavior (TPB), individuals are more likely to form intentions that align with the expectations of important referents, such as family, peers, educators, and community leaders (Ajzen, 1991). Thus, Truong & Hall (2016) find that subjective norms significantly influence pro-environmental behaviors in social marketing interventions in Southeast Asia. In Kim et al.'s (2020) study, subjective norms were found to increase participation in health screening through social marketing messages in collectivist cultures. Similarly, Eshun & Glover (2022) found that Ghanaian youth were more likely to use indigenous languages when their peers viewed it as "cool" or "expected." Albury (2018) and Anyidoho and Kropp Dakubu (2019) suggest that individuals are more likely to engage in indigenous language use when they perceive it as valued and endorsed by others in their social

environment. Therefore, we hypothesize that parents' intention to use an indigenous language will be determined by their perception that their relevant others are highly supportive of this behavior.

H2: Subjective norms positively influence Parents' intention to use indigenous languages.

Self-Efficacy and Parents' Indigenous Language Use Intention

Self-efficacy, a central construct in Bandura's Social Cognitive Theory (1986), refers to an individual's belief in their capability to perform a specific behavior. In the context of language use, self-efficacy refers to an individual's confidence in their ability to understand, speak, and apply the indigenous language effectively in various communication settings. Pérez-Rodríguez et al., (2021) suggest that individuals who feel confident in their language proficiency are more likely to use the language. Thus, when people perceive that they can effectively use an indigenous language, their behavioral intention to use it increases (Bandura, 2001). We therefore hypothesize that parents with high self-efficacy are more likely to develop intention to use indigenous language even when faced with social pressures to conform to dominant language norms.

H3: Self-efficacy positively influences Parents' intention to use indigenous language

Mediation Role of Reinforcements, Behavioral Capacity, and Environmental Factors

In Social Cognitive Theory, reinforcements are responses that increase or decrease the likelihood that behavior will recur. Reinforcements can be positive (e.g., praise, social approval, rewards) or negative (e.g., disapproval, sanctions, criticism) (Bandura, 1986). Accordingly, Bandura (2001) suggests that consequences shape behavioral patterns and influence how personal factors such as attitudes, perceived norms, and self-efficacy translate into behavioral intentions. Reinforcements can mediate the relationship between individual predictors, such as attitudes, subjective norms, and self-efficacy, and the intention to use an indigenous language by providing motivation. Thus, when individuals receive positive reinforcement, their intention to continue using the language is likely to increase (Tang et al., 2013). On the other hand, a lack of positive reinforcement can weaken behavioral intention, even if attitudes are initially favorable (Bandura, 1986; Baker, 2011).

Moreover, when people perceive that significant others expect them to use the indigenous language (subjective norms), they are more likely to comply when reinforced with social approval from family, peers, or elders. Fishbein & Ajzen (2010) suggest that normative beliefs are most effective when reinforced by actual approval or disapproval from others. Dyers (2018) noted that students who received positive social feedback from peers and teachers were more likely to develop an intention to use indigenous languages at school.

Reinforcements can also enhance an individual's self-efficacy in performing a behavior. For example, Zimmerman & Schunk (2011) argue that self-efficacy is strengthened through reinforcements. Pérez-Rodríguez et al. (2021) found that perceived self-efficacy significantly predicts language-use intention. In Social Cognitive Theory, behavioral capacity refers to an individual's knowledge and skills necessary to perform a behavior. Therefore, people will form intentions when they have the ability to do so competently. Hornberger &

King (2001) emphasize that positive language ideologies alone are not enough; communicative competence is essential for behavior change. García & Wei (2014) argue that individuals often underuse indigenous languages because they lack confidence in their language skills.

Behavioral capacity, then, provides the tools necessary for compliance with social norms. Spolsky (2009) observes that, despite strong family norms supporting indigenous language use, actual use was minimal in households where youth lacked linguistic skills. Lee & Kim (2018) and Pérez-Rodríguez et al. (2021) found that efforts to promote the use of indigenous languages increased only when language proficiency was adequate. Environmental factors in SCT refer to the physical, social, and cultural contexts in which behavior occurs. Bandura (1986) stresses that behavior results from the interaction between personal factors such as beliefs, attitudes, and environmental conditions. Studies suggest that individuals with a positive attitude toward indigenous languages may not use them unless the environment is supportive (Dako & Quarcoo, 2023; Afrifa et al., 2019). King (2001) notes that Quechua speakers in Peru held favorable attitudes toward their language but used it only in limited contexts due to restrictive sociolinguistic environments. Fishman (1991) emphasized that for attitudes to translate into language maintenance, supportive institutional and community structures are necessary.

Regarding subjective norms, the use of an indigenous language by significant others can validate social expectations. Spolsky (2009) found that environmental factors strongly influence language use intention. Grenoble and Whaley (2006) added that the visibility of indigenous languages in signage and media reinforces norms and encourages usage. Moreover, individuals' self-efficacy in using the language supported by environmental factors tends to be associated with a higher intention to do so. For example, a lack of opportunities for practice or peer support can reduce intention, even among confident individuals. Pérez-Rodríguez et al. (2021), supporting this, state that self-efficacy predicts intention only when the environment supports and encourages indigenous language use. De Houwer (2007) also highlights that supportive home and school environments are crucial for building language skills and confidence for actual use. We thus hypothesize that the relationship between parents' attitudes, subjective norms, self-efficacy, and their intention to use an indigenous language is mediated by reinforcements, behavioral capacity, and environmental factors.

Drawing on Social Cognitive Theory (Bandura, 1986), reinforcement, behavioral capacity, and environmental factors are theorized as mediators rather than direct predictors of intention. These constructs represent the mechanisms through which cognitive and normative beliefs are translated into behavioral intention. That is, a favorable attitude or supportive social norm may not independently generate intention unless it is activated by reinforcing feedback, adequate linguistic capacity, or a supportive environment. They are therefore conceptualized as the pathways through which the independent variables operate, rather than as independent drivers of intention (Glanz et al., 2015; Bandura, 1986). We therefore hypothesize that;

H4a: Reinforcements mediate the relationship between attitude and parents' indigenous language use intention.

H4b: Reinforcements mediate the relationship between subjective norms and parents' indigenous language use intention.

H4c: Reinforcements mediate the relationship between self-efficacy and parents' indigenous language use intention.

H5a: Behavioral capacity mediates the relationship between attitude and parents' indigenous language use intention.

H5b: Behavioral capacity mediates the relationship between subjective norms and parents' indigenous language use intention.

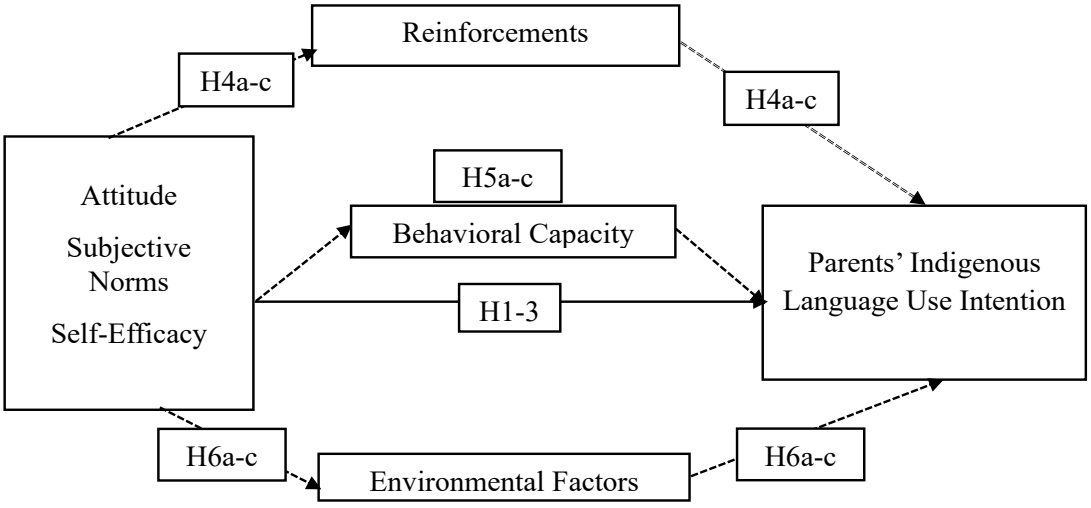
H5c: Behavioral capacity mediates the relationship between self-efficacy and parents' indigenous language use intention.

H6a: Environmental factors mediate the relationship between attitude and parents' indigenous language use intention.

H6b: Environmental factors mediate the relationship between subjective norms and parents' indigenous language use intention.

H6c: Environmental factors mediate the relationship between self-efficacy and parents' indigenous language use intention.

Figure 1: Research Model



Note: ⟶ Direct paths (H1-H3) ⇢ Mediation paths (H4a-c -H6a-c)

Source: Authors' conceptualisation

Methodology

The study adopted a quantitative, cross-sectional survey design, consistent with theory-testing research that requires the statistical evaluation of hypothesized relationships between latent constructs (Bryman, 2016; Creswell & Creswell, 2018). The target population comprised parents residing in Ghana who had at least one child living with them at the time of data collection. Given the recognized primacy of parents as agents of early language acquisition and intergenerational transmission (Fishman, 1991; De Houwer, 2007), parents were selected as the unit of analysis. A parent was defined as any adult (18 years or older) in a primary caregiving role, whether biological, adoptive, or otherwise, for a child residing in the household.

In the absence of a sampling frame for parents in Ghana, a convenience sampling technique was employed, recruiting respondents across multiple community settings, including basic schools, churches, and residential neighborhoods, to enhance sample heterogeneity (Etikan et al., 2016; Hair et al., 2019). A target sample size of 400 was used, consistent with Hair et al.'s (2019) recommendation of 200 to 400 respondents for CB-SEM models. Five hundred (500) questionnaires were administered to account for anticipated attrition; 399 were retained in the final analysis, yielding a usable response rate of approximately 79.8%.

A structured questionnaire was developed using validated scales from TPB and SCT. Attitude items were adapted from Ajzen (1991) and Tulloch (2018); subjective norms items from Ajzen (1991) and Kim et al. (2020); self-efficacy items from Bandura (1997) and Perez-Rodriguez et al. (2021); and items for reinforcement, behavioral capacity, and environmental factors from Bandura (1986) and Glanz et al. (2015). Intention items were adapted from Ajzen (1991). All items were adapted to reflect indigenous language use in Ghanaian homes. Each construct was measured with five items on a five-point Likert scale (1 = strongly disagree; 5 = strongly agree). A pilot study with 30 participants confirmed item clarity and face validity. Questionnaires were administered face-to-face to improve response quality and minimise common method bias (Podsakoff et al., 2003; Maier et al., 2023). Data were analysed using Structural Equation Modeling (SEM) in AMOS.

Results

Table 1: Demographic Profile of Respondents

		Frequency	Percentage
Gender	Male	214	53.6
	Female	185	46.4
Age	Below 25	74	18.5

	25–34	125	31.3
	35–44	177	44.4
	45 and above	23	5.8
Education	Basic	164	41.1
	Secondary	170	42.6
	Tertiary	50	12.5
	Postgraduate	15	3.8
Language	Twi	350	87.7
	Ga	33	8.3
	Fante	16	4.0
Children	1	75	18.8
	2	86	21.6
	3	121	30.3
	4 or more	117	29.3
Frequency of using IL	Often	158	39.6
	Sometimes	16	4.0
	Rarely	147	36.8
	Never	78	19.5

The demographic profile shown in Table 1 indicates a fairly balanced gender distribution, with males making up 53.6% of respondents and females 46.4%. The sample mainly includes adults aged 35–44 (44.4%), followed by those aged 25–34 (31.3%). Younger respondents aged 25 and below (18.5%) and those aged 45 and above (5.8%) represent smaller groups. Educationally, most participants have either basic (41.1%) or secondary education (42.6%), with only a small percentage holding tertiary (12.5%) or postgraduate qualifications (3.8%). The language spoken shows a strong dominance of Twi speakers (87.7%), with Ga (8.3%) and Fante (4.0%) speakers comprising smaller portions. The number of children indicates that most respondents have between one and three children; the largest group has three (30.3%), and 29.3% report having four or more. Regarding how often they speak their indigenous language at home, 39.6% say they do so "often," while 36.8% say they "rarely" do. 19.5% say they "never," do, and o 4% indicate they "sometimes" do.

Table 2: Descriptive Statistics

Constructs	**Mean**	**Std. Deviation**

Attitude	3.8241	.62544
Subjective Norms	2.8732	.72919
Self-Efficacy	3.6757	.83431
Reinforcements	3.8356	.57331
Behavioral Capacity	2.3063	.79315
Environmental Factors	3.7228	.72421
Intention	3.5243	.79735

The descriptive statistics presented in Table 2 generally indicate positive perceptions across most constructs, except for Behavioral Capacity. Attitude (M = 3.82), Reinforcement (M = 3.84), Environmental Factors (M = 3.72), and Self-Efficacy (M = 3.68) all show relatively high mean scores, suggesting respondents have favorable views, feel supported, and perceive supportive environmental conditions. Intention also shows a positive mean (M = 3.52), indicating a reasonable chance of engaging in the target behavior. However, Subjective Norms (M = 2.87) are below the mid-point of the scale (3.00), signaling weaker perceived social influence. Behavioral Capacity (M = 2.31) has the lowest mean, suggesting respondents feel less confident in their knowledge or skills to perform the behavior. Standard deviations across the constructs range from moderate to slightly high, reflecting some variation in responses but no extreme differences in perceptions.

Model Fit Measures

The model fit indices show that the structural model meets widely accepted standards for a good fit. The chi-square value (CMIN = 490.086, df = 278) results in a CMIN/DF ratio of 1.763, which is within the recommended range of less than 3.0 (Kline, 2015). Absolute fit indices also support the model's adequacy, with a GFI of 0.905, which exceeds the commonly accepted cutoff of 0.90 (Hu & Bentler, 1999). Incremental fit indices, including IFI = 0.972, TLI = 0.967, and CFI = 0.972, all exceed the 0.95 threshold, indicating excellent comparative fit (Hu & Bentler, 1999). The SRMR = 0.04 is well below the maximum recommended value of 0.08, reflecting low residual discrepancies (Hu & Bentler, 1999). Additionally, the RMSEA = 0.044, along with a high PClose = 0.947, suggests a close-fitting model, as RMSEA values under 0.06 are considered strong evidence of good fit.

Table 3: Model Validity Measures

	SE	**BC**	**INT**	**EF**	**ATT**	**SN**	**RF**
SE	**0.900**						
BC	0.012	**0.846**					
INT	0.065	0.238***	**0.836**				
EF	0.018	0.027	0.017	**0.881**			
ATT	0.023	0.224***	0.427***	0.045	**0.782**		
SN	0.037	0.367***	0.523***	0.055	0.317***	**0.790**	
RF	-0.042	0.195**	0.427***	0.178**	0.689***	0.435***	**0.808**

Note: Square root of the AVEs are on the diagonal, and the inter-construct correlations are off-diagonal. AVE = average variance extracted.

The model validity results indicate strong evidence of convergent and discriminant validity based on the Fornell-Larcker criteria (see Table 3). The square roots of the AVE values (shown on the diagonal) are all above the recommended threshold of 0.70, ranging from 0.782 (ATT) to 0.900 (SE), demonstrating adequate convergent validity (Fornell & Larcker, 1981)

Table 4: Confirmatory Factor Analysis

	Items	Factor Loadings	CR	AVE	Cronbach Alpha
Self-Efficacy			0.945	0.810	0.943
	SE1	.933			
	SE3	.864			
	SE4	.944			
	SE5	.856			
Behavioral Capacity			0.926	0.716	0.924
	BC1	.781			
	BC2	.851			
	BC3	.881			
	BC4	.857			
	BC5	.858			
Intention			0.921	0.700	0.918
	INT1	.768			
	INT2	.887			
	INT3	.858			
	INT4	.887			
	INT5	.774			
Environmental Factors			0.933	0.777	0.930
	EF1	.820			
	EF2	.897			
	EF3	.951			
	EF4	.853			
Attitude			0.825	0.611	0.825
	ATT2	.731			
	ATT3	.810			
	ATT4	.802			
Subject Norms			0.831	0.623	0.827
	SN2	.854			
	SN3	.812			
	SN5	.694			
Reinforcement			0.789	0.654	0.784
	RF2	.742			
	RF3	.869			

Note. AVE = average variance extracted; CR = Composite Reliability; CA = Cronbach's alpha.

The CFA results in Table 4 indicate a well-performing measurement model with strong reliability and convergent validity. Most retained items exhibit factor loadings at or above the recommended threshold of 0.70, with the exception of SN5 (loading = 0.694), which marginally falls below this threshold but was retained due to its theoretical relevance and the

overall acceptable fit of the measurement model, indicating adequate representation of their underlying constructs (Hair et al., 2019). Composite reliability (CR) values range from 0.789 to 0.945, and Cronbach's alpha values similarly exceed the 0.70 benchmark across all constructs, confirming internal consistency (Nunnally & Bernstein, 1994). The AVE values are all above the 0.50 cutoff, indicating that each construct accounts for a sufficient proportion of the variance in its indicators (Fornell & Larcker, 1981). We note that although each construct originally consisted of five measurement items, several items were removed during model modification due to high modification indices or cross-loadings that threatened discriminant validity. The following items were dropped: Self-Efficacy (SE2); Attitude (ATT1, ATT5); Subjective Norms (SN1, SN4); Environmental Factors (EF5); and Reinforcement (RF1, RF4, RF5). Each deletion was guided by modification indices and theoretical coherence, consistent with standard CFA practice (Hair et al., 2019). This improved the overall model fit.

Direct Path Results

The structural model in Table 5 revealed that Attitude significantly and positively predicted Intention ($\beta = 0.260$, $p < .001$), supporting H1. Subjective Norms emerged as the strongest predictor of Intention ($\beta = 0.404$, $p < .001$), supporting H2. Self-Efficacy did not significantly predict Intention ($\beta = 0.042$, $p = .315$), thereby rejecting H3.

Table 5: Direct Path Results

Hypothesis	Path	Estimate (beta)	p-value	Outcome
H1	Attitude → Intention	0.260	< .001	Supported
H2	Subjective Norms → Intention	0.404	< .001	Supported
H3	Self-Efficacy → Intention	0.042	.315	Not Supported

Mediation Path Results

Mediation was tested using bootstrapped indirect effects with 5,000 bootstrap samples and bias-corrected confidence intervals (Hayes, 2013; Preacher & Hayes, 2008). Reinforcements partially mediated the Attitude → Intention pathway (direct effect reduced from 0.260 to 0.182; indirect effect = 0.002, $p < .05$) and the Subjective Norms → Intention pathway (direct effect reduced from 0.404 to 0.371; indirect effect = 0.001, $p < .05$), providing partial support for H4a,b. The direct effects remained significant after the introduction of the mediator in both cases, consistent with partial mediation (Baron & Kenny, 1986). H4c was not supported as Reinforcements did not mediate the Self-Efficacy → Intention pathway; both the direct and indirect effects were non-significant (see Table 6).

Behavioral Capacity did not mediate any of the hypothesized relationships (H5 not supported). For Attitude, the direct effect changed only marginally from 0.260 to 0.225 with a non-significant indirect effect of 0.408. For Subjective Norms, the direct effect moved from 0.404 to 0.392 with a non-significant indirect effect of 0.536. For Self-Efficacy, the direct path remained non-significant with an indirect effect of 0.728, thereby providing no support for H5a-c (see Table 6).

Similarly, Environmental Factors did not mediate any relationships (H6a-c not supported). For both Attitude and Subjective Norms, the direct effects remained unchanged after introducing the mediator (0.260 and 0.404, respectively), with very high but non-significant indirect effects (0.962 and 0.939). For Self-Efficacy, the path remained non-significant throughout (see Table 6).

Table 6: Mediation Results

Mediator	Pathway	Direct (Before)	Direct (After)	Indirect	Outcome
Reinforcements	Attitude → Intention	0.260***	0.182***	0.002*	Partial Mediation
Reinforcements	Subj. Norms → Intention	0.404***	0.371***	0.001*	Partial Mediation
Reinforcements	Self-Efficacy → Intention	0.042 n.s.	0.049 n.s.	0.096 n.s.	No Mediation
Behavioral Capacity	Attitude → Intention	0.260***	0.225***	0.408 n.s.	No Mediation
Behavioral Capacity	Subj. Norms → Intention	0.404***	0.392***	0.536 n.s.	No Mediation
Behavioral Capacity	Self-Efficacy → Intention	0.042 n.s.	0.043 n.s.	0.728 n.s.	No Mediation
Environmental Factors	Attitude → Intention	0.260***	0.260***	0.962 n.s.	No Mediation
Environmental Factors	Subj. Norms → Intention	0.404***	0.404***	0.939 n.s.	No Mediation
Environmental Factors	Self-Efficacy → Intention	0.042 n.s.	0.042 n.s.	0.963 n.s.	No Mediation

*Table 6: Mediation Results. *** $p < .001$; * $p < .05$; n.s. = not significant*

Discussions

Using TPB and SCT, this study hypothesized that attitudes, subjective norms, and self-efficacy directly influence indigenous language use intention, with reinforcement, behavioral capacity, and environmental factors mediating these relationships. Overall, the findings provide empirical support for an integrative theoretical approach in explaining complex sociocultural behaviors such as indigenous language use, while revealing contextual nuances specific to Ghana. The results show that attitude has a significant positive effect on parents' intention to use indigenous languages, thus supporting H1. This finding supports the proposition of the Theory of Planned Behavior (Ajzen, 1991), that favorable evaluations of behavior increase the likelihood of developing strong behavioral intentions. Consistent with prior language studies (Nyamekye, 2024; Albury, 2018; Anyidoho & Kropp Dakubu, 2019), which state that parents who perceive indigenous language use as valuable for cultural identity and effective communication are more likely to develop an intention to use it at home. The finding further implies that Ghanaian parents who hold favorable views about the value and identity-affirming nature of indigenous languages are more likely to intend to use them with their children at home. This underscores the importance of attitude-shaping campaigns in social marketing interventions aimed at revitalizing indigenous language use.

Subjective norms emerged as the strongest direct predictor of parents' intention to use their indigenous language, supporting H2. This finding corroborates the TPB proposition that

social pressure from significant others, including family, peers, educators, and community leaders, plays a pivotal role in shaping behavioral intentions (Ajzen, 1991). The results resonate with those of Kim et al. (2020), who report that subjective norms significantly drive health screening participation in collectivist cultures through social marketing messages. Albury (2018) and Anyidoho and Kropp Dakubu (2019) further support this by showing that perceived social endorsement from one's social environment enhances intentions to use an indigenous language. The finding is particularly significant in the Ghanaian sociocultural context, where collective norms and social approval carry considerable weight in shaping behavior.

Regarding H3, the study found that self-efficacy has no significant direct effect on parents' language-use intention, thereby rejecting H3. While Bandura (2001) and Pérez-Rodríguez et al. (2021) suggest that individuals with high self-efficacy are more likely to develop strong behavioral intentions, the findings of this study do not support that assertion in the context of indigenous language use among Ghanaian parents. This unexpected result may be due to several contextual factors. First, many parents feel ill-equipped with the linguistic skills and knowledge needed to use indigenous languages, which may undermine their confidence in using them. Second, the dominant social norm in many Ghanaian households favoring English communication may neutralize any self-efficacy advantage.

For H4a-c, the findings suggest partial mediation of the relationships between attitude and intention, and between subjective norms and intention, and no mediation of the relationship between reinforcements and self-efficacy. Taken together, the partial mediation of reinforcements aligns with prior research in language-use contexts. Dyers (2018) found that students who received positive social feedback from peers and teachers were more likely to develop an intention to use indigenous languages. Similarly, Zimmerman and Schunk (2011) documented that reinforcement strengthens both motivation and self-efficacy in learning contexts.

Again, behavioral capacity failed to mediate any of the relationships between the independent variables and intention and therefore did not support H5a-c. This is surprising given that SCT theorizes that behavioral capacity provides the competence-based foundation through which beliefs and norms are translated into action. However, the present results suggest that behavioral capacity does not function as a pathway through which attitudes, subjective norms, or self-efficacy generate intention among Ghanaian parents. This indicates a widespread perception among respondents that they lack the linguistic knowledge and skills needed to use indigenous languages at home, consistent with Hornberger and King (2001).

From the results, environmental factors did not mediate any of the relationships providing no support for H6a-c. This means that the Ghanaian linguistic environment is so uniformly dominated by English that it lacks the variability needed to differentially mediate the relationship between individual-level predictors and intention. This finding is consistent with King (2001) who reports a similar dynamic among Quechua speakers in Peru. He suggests that individuals who held favorable attitudes toward their language only used it in restricted contexts due to inhospitable sociolinguistic environments.

Implications and Conclusions

This study makes meaningful contributions to the theoretical landscape of indigenous language use and social marketing by integrating the Theory of Planned Behavior (TPB) and

Social Cognitive Theory (SCT). It demonstrates that no single theory is sufficient to explain the complexity of language-use behavior, and that integrative frameworks offer greater explanatory power. Specifically, the study shows that TPB constructs, particularly Attitude and Subjective Norms, are robust predictors of language-use intention in the Ghanaian context, even when SCT constructs such as Reinforcements, Behavioral Capacity, and Environmental Factors are introduced as mediators.

The partial mediation of Reinforcements provides theoretical support for the idea that cognitive evaluations and social norms must be activated by tangible feedback mechanisms to influence intention more fully. On the other hand, the failure of Behavioral Capacity and Environmental Factors to mediate any relationships suggests that the active ingredients for indigenous language-use intention in Ghana are primarily attitudinal and normative rather than environmental or competence-based, at least at this stage of language shift. The findings of the study collectively suggest that indigenous language revitalization in Ghana is, at its core, a social and normative challenge as much as an individual one. Parents' intentions are shaped more powerfully by what their community values and expects than by their personal confidence or the linguistic environment around them. This underscores the strategic importance of community-centered social marketing approaches that mobilize social networks, respected figures, and collective cultural pride to shift normative expectations around language use. This study is not without limitations. The convenience sampling method limits generalizability beyond the sample, and the cross-sectional design prevents causal inferences. Future research should employ longitudinal designs to track how changes in attitudes, norms, and reinforcements translate into actual language-use behavior over time.

Additionally, investigating potential moderators such as urban versus rural residence, level of English proficiency, or generational differences could yield deeper insights into the conditions under which these relationships vary.

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University Brand Evangelism: The Role of Brand Attachment and Administrative Service Experience in Higher Education Institutions

Higher education has become increasingly marketised and brand-driven. Despite the growing interest in student-led brand advocacy as a critical asset for institutional sustainability, the literature remains theoretically underdeveloped, relying on fragmented and composite conceptualisations that obscure how distinct attachment dimensions drive brand evangelism in the context of higher education. Drawing on attachment theory, this study develops and tests a multidimensional model of student-institution brand attachment comprising identity-based, bonding-based, and emotion-based dimensions, and examines how administrative service experience (ASE) conditions their effects on university brand evangelism. A quantitative, cross-sectional survey was conducted among 871 past and present students of public and private universities in Ghana. Data were analysed using covariance-based structural equation modelling (CB-SEM) to assess direct, mediating and moderating relationships within the proposed model. The findings indicate that identity-based and bonding-based attachments operate largely through emotion-based attachment to drive brand evangelism, with social interaction ties emerging as the strongest direct predictor. Brand trust exerts influence only indirectly, while ASE selectively strengthens attachment-evangelism relationships. This study contributes to the brand attachment and higher education branding literature by providing a more theoretically integrated understanding of the antecedent and intermediary effects of a multidimensional model of student-institution attachment on the propensity to engage in brand evangelistic behaviours. It further extends understanding of everyday institutional touchpoints as contextual boundary conditions that strengthen the attachment–brand supportive behaviour relationship. This study is one of the first to comprehensively examine these issues in the context of higher education. Practically, the study highlights the strategic imperative for higher education institutions to align brand relationship management with administrative service design in fostering sustained student brand advocacy.

Keywords
Brand attachment, Brand evangelism, Higher education, Administrative service experience, student-institution relationships

Track 7 - Operations, Supply Chain and Project Management

A Dynamic, Behaviorally Informed MADM Framework for Mental Health App Evaluation: Fusing Multimodal User Feedback, Temporal Dynamics, and Objective Weighting

Abstract

The rapid growth of digital mental health applications has generated large volumes of user-generated reviews. However, existing evaluation approaches often rely on either ratings or textual feedback in isolation. They also assume static user preferences and overlook behavioral decision factors, reducing reliability and practical relevance. To address these issues, this study proposes a probabilistic reliable linguistic regret-based dynamic linear assignment method (PRL–RD–LAM) for evaluating mental health applications. A dataset of 110,335 valid reviews from five applications (2022–2024) is analyzed. Using topic modeling and hierarchical clustering, six key evaluation attributes are identified: sleep and relaxation, app functionality and updates, mindfulness and personal growth, subscription and payment, value and service quality, and stress and anxiety management. Sentiment scores are combined with ratings to construct the evaluation structure. The proposed method advances decision-making in three ways. First, it incorporates regret theory to capture sensitivity to relative performance differences. Second, it introduces a dynamic weighting scheme that combines entropy-based time-weighting with data-driven objective weighting. Third, it develops a dynamic linear assignment method for ranking alternatives. The model is subsequently applied to rank the five applications. Its performance is evaluated using comparative and statistical analyses. The results show strong agreement with established methods, with Spearman correlation coefficients exceeding 0.80. The dynamic framework produces meaningful rank changes compared to static evaluation by improving discrimination among closely ranked alternatives. Unlike traditional static models, the proposed framework integrates multimodal data, temporal dynamics, and behavioral mechanisms. It complements existing approaches and enables adaptive evaluation. Theoretically, it embeds behavioral decision theory into a dynamic data-driven framework. In practice, it supports platform operators, developers, and users in making informed application choices and has the potential to improve mental health decision-making.

BALANCING SPEED AND QUALITY IN BUILDING PROJECTS: POSITIONING THEIR RELATIONSHIP

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Abstract

Construction speed and quality are two critical aspects of project management that must be carefully balanced to ensure successful outcomes. The adversarial or supportive relationship between construction speed and quality has an upshot on the performance of the project which is the quest of this paper. The main purpose of this paper is to examine the relationship between construction speed and quality and determine whether accelerating project delivery necessarily compromises quality outcomes. A quantitative research approach was adopted to collect data for the study. Using questionnaires, 70 responses were obtained from contractors registered by Contractors Registration Board (CRB) of Tanzania in Class I and II out of 93 distributed. Data was analyzed using correlation analysis in IBM SPSS Statistics 20, focusing on key factors influencing construction speed and quality. The findings reveal that several quality-related factors including tools for assessing efficiency and quality outcomes, quality of materials, consistency in quality standards, and, minimization of rework are positively correlated with speed-enhancing practices such as effective planning, stakeholder coordination efficiency, labour productivity and prioritizing speed over quality. These results challenge the traditional assumption of a trade-off, demonstrating instead, that construction speed can reinforce, rather than compromise quality when supported by integrated project management practices. It is therefore concluded that achieving an optimal balance between speed and quality requires an integrated approach that considers the interdependence of these factors with their relationship mediated by management practices, coordination mechanisms, and process control systems. These findings contribute to construction management knowledge by providing empirical evidence from Tanzania and offer practical insights for contractors, project managers, and clients to improve project delivery without sacrificing long-term performance or safety.

Keywords: Construction projects, Contractors, Project management, Quality, Tanzania

1.0 INTRODUCTION

Construction speed and quality are the two critical aspects of project management that must be carefully balanced to ensure successful outcomes. The world's society and economy have suffered human and financial losses because of poor quality management in the construction industry; therefore, the need for quality products and services is vital (Suganthi *et al.,* 2017). Throughout the world the construction area is one of the most hazardous industries where poor design and maintenance are the major factors that affect construction (Shehu *et al.,*2014). Therefore when the speed and quality collide as the result client's requirements, the consideration of the image of the industry should a prerequisite in managing a project. Studies have shown that the issue of balance between the main criteria of a project, which was first brought up in 1961 and was related to two factors - time and cost, was gradually considered in project management by the emerging of quality in modern engineering contracts, the balancing of time and quality costs (Hosseini *et al.,* 2017). Now there is need to go beyond normal time estimated for construction and focus to speed. It is evident that when the need for faster construction arise it will eventually reduces costs and meet urgent housing needs (backlog). However, rushed projects are associated with poor workmanship, substandard materials and non-compliance with building regulations leading to defective structures and increased maintenance expenses.

In project management, construction speed is influenced by factors such as labour productivity, resource availability, stakeholders' prioritization, planning processes,

technology integration and coordination efficiency (Cao, 2018; Gunduz & Al-Naimi, 2021; Karlsone & Ozola, 2023). On the other hand, construction quality is shaped by variables including material quality, performance measurement frameworks, tools for assessing outcomes, rework reduction, continuous improvement practices and consistency in quality standards (Cao, 2018; Safety Culture Team, 2024; Wawak *et al.,* 2020). Therefore, it is high time to assess the relations between the factors of the two the dimensions and inform how they can be optimized to balance speed and quality.

2.0 LITERATURE REVIEW

2.1 Factors of construction speed

Construction speed is a results of requirements of the client or the signs of project delays that necessitate acceleration. When the project is completed on time, one of its objectives is achieved and it brings in a passenger benefits of cost reduction and client satisfaction, thus reflects the efficiency of planning, coordination and resource utilization. Various factors come into play on how quickly construction progresses, each contributing uniquely to either accelerating or delaying project delivery. Construction makes use of resources that must be supplied throughout the project life cycle. Vigneshwar and Shanmugapriya (2022) found that inconsistent supply chains and procurement delays are among the top causes of slowdowns. Chang *et al.* (2017) also highlight that logistical planning is crucial to avoid bottlenecks. Similarly, stakeholders have their priorities regarding speed, cost or quality that influence decision making. Consequently, misaligned stakeholders priorities can lead to scope changes and inefficiencies (Gunduz and Al-Naimi,2021). Nonetheless, early goal setting and stakeholder alignment are essential for avoiding delays (Rafeh *et al.* 2023). In the course of balancing speed and quality, construction activities can be accelerated through modern technologies like BIM, prefabrication and automation. Cao (2018) and Khudzari *et al.* (2023) found that technology adoption improves coordination and quality control. However, resistance to change and lack of digital infrastructure can hinder the use of digital tools. The construction speed can be realized through strategic planning that consider scheduling, sequencing and risk anticipation in the process. Akinola *et al.* (2019) emphasize that poor planning is a root cause of delays, especially in developing contexts. Gunduz and Al-Naimi (2021) also link planning to performance measurement frameworks.

Smooth coordination among contractors, consultants and clients is vital in harmonizing their speed goals as it helps resolve emerging issues quickly and keeps the project on track. Cao (2018) and Asma & Sunny (2018) note that poor communication and unclear responsibilities often lead to delays. On the one hand, fast tracking projects will seem beneficial, but it can compromise quality if not managed carefully. This is argued by Wawak, *et al.,* (2020) that excessive focus on speed can lead to rework, safety risks and long-term performance issues. This trade off is also explored in Gunduz and Al-Naimi (2021) integrated performance framework. The other factor is Iabour productivity that directly affects the pace of construction. Productivity is shaped by workers' skills, motivation and supervision (Karlsone and Ozola, 2023). Absenteeism, lack of training and poor site management are major constraints of labour productivity (Nguyen *et al.,* 2020). Similarly, Cao (2018) identifies labour utilization as a key factor influencing both speed and quality. Table summarizes factors of speed extracted from literature.

Table 1: Factors of speed

S/N	Factor	Author (s)
1.	Resource availability and reliability	Vigneshwar and Shanmugapriya 2022; Chang *et al.,* 2017
2	Stakeholders' prioritization	Gunduz and Al-Naimi, 2021;Rafeh *et al.* , 2023
3	Technology integration	Cao, 2018 ; Khudzari *et al.* 2023
4	Planning process	Gunduz and Al-Naimi, 2021; Akinola *et al.,* 2019
5	Stakeholders' coordination efficiency	Asma & Sunny, 2018; Cao, 2018
6	Impact of prioritizing speed on quality	Gunduz and Al-Naimi, 202; Wawak, *et al.,* 2020
7	Labour productivity	Cao, 2018; Karlsone and Ozola, 2023; Nguyen *et al.,*2020

2.2 Factors of construction quality

Construction quality is a fundamental benchmark of project success, reflecting not only the durability and safety of the built environment but also the effectiveness of project management and stakeholder collaboration. Construction quality is shaped by a combination of material integrity, process control and organizational practices. Understanding the key factors that influence quality is essential for developing strategies that ensure compliance with standards, minimize defects and enhance long term performance (Wawak, *et al.,*2020). There are several factors that either contribute to quality achievement or quality disruptions. For instance, material quality directly impacts structural integrity of the constructed structure. Cao (2018) and Chin, *et al.,* (2024) reveal that substandard materials often result from weak quality control systems. Quality is achievement is assessed by using tools outlined in the project specifications. Cao (2018) emphasizes the importance of structured tools and metrics to evaluate both process efficiency and output quality. Combining efficiency indicators with effectiveness measures provides a holistic view of performance (Carmichael, 2001). Other studies propose the use of performance measurement frameworks in quality assurance at different stages of the project. Gunduz and Al-Naimi (2021) propose the use of integrated balanced scorecard and quality function deployment models to track quality and project progress while Wawak *et al*. (2020) categorize quality into process, organizational and product dimensions. Furthermore, compromising quality can lead to rework and therefore rework reduction should be at the forethought. Efficient project management, education and change control are the key to minimizing rework (Taghizadeh *et al.,* 2021; Safety Culture Team, 2024). Quality attainment is not a one time activity but a continuous process. Ongoing refinement of processes through audits, feedback and lean principles enhances quality over time (Chang, 2002; Safety Culture Team, 2024). Likewise, maintaining uniform quality practices across teams and phases is essential as it enhances consistency in quality standards. Quality consistency is the alignment of strategic goals and operational practices (Hjelm,1993) . The Safety Culture Team (2024) also emphasizes the importance of shared standards to avoid fragmented efforts. Table 1 summarizes factors of speed extracted from literature.

Table 2: Factors of quality

S/N	Factor	Author (s)
1.	Quality of material	Chin, *et al.,* 2024; Cao, 2018
2	Tools for assessing efficiency and quality outcomes	Cao, 2018; Carmichael, 2001
3	Performance measurement frameworks	Gunduz and Al-Naimi, 2021; Wawak, *et al.,* 2020
4	Rework reduction	Taghizadeh *et al.,* 2021; Safety Culture Team, 2024
5	Continuous improvement practices	Chang, 2002; Safety Culture Team, 2024
6	Consistency in quality standards	Hjelm,1993;Safety Culture Team, 2024

2.3 METHODOLOGY

This study adopted a quantitative research approach to collect data on balancing speed and quality in building projects. The target population comprised ongoing construction projects registered by the Contractors Registration Board (CRB) of Tanzania in with their sites located in Dar es Salaam City. A total of 121 projects registered between January 2022 and December 2024 undertaken by Contractors registered in class I and II were established. The 2022 to 2024 time-frame in this research aimed to capture completed or near-completion building projects. These projects were distributed according to the class of registration of contractors as follows: Class One 78 and Class Two 43, and the value of the projects included in the survey was TZS 3 billion and above. The sample size was calculated using Slovin's formula which is widely applied in social science researches when the population is known and the acceptable margin of error is specified. The resulting sample size is 93 building projects.

Data was gathered using structured questionnaires with closed-ended questions on speed and quality respectively, rated on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The selection of respondents was guided by systematic and random sampling techniques to ensure representation of various roles and levels such that only site engineers, quantity surveyors and architects were earmarked. Out of 93 distributed questionnaires, 70 were completed and returned (with a 75.27% response rate). This return rate is considered satisfactory for field-based research and provides a reliable basis for data analysis and interpretation. Data was coded and analyzed using IBM SPSS Statistics Version 20, employing descriptive statistics (frequencies) and correlation features.

3. ANALYSIS AND RESULTS

4.1 Respondents information

Table 3 presents respondents information. Respondents had varying levels of experience in the field, 41.4% had less than 5 years of experience followed by 37.1% with 5 to 10 years. This mix highlights the inclusion of both early careers and more seasoned professionals. Among the respondents, 75.7% were male (53) and 24.3% were female (17) which reflects the current gender composition in the construction sector, where male participation is typically higher. Including this group in the survey helps to ensure a broader understanding of perspectives within the industry. On the professionals participation, majority were site engineers (48.6%) followed by quantity surveyors (28.6%) and the least were others. Those in the other category

included (Environmental, Social, Health and Safety) ESHS experts, a materials engineer, safety officer and a project manager. This variety of roles ensured a broad range of perspectives on speed and quality in construction. These respondents reported varying levels of project involvement**,** 38.6% had worked on 5 to 10 building projects followed by 34.3% had participated in fewer than 5 projects, while 27.1% had worked on more than 10 projects. These findings suggest that the majority of respondents had meaningful hands-on experience, with over 60% having completed five or more projects during their careers, strengthening the credibility of the data provided.

Table 3: Respondents information

Variable	Frequency	Percent
Experience		
Less than 5 years	29	41.4
5 -10 years	26	37.1
11-15 years	11	15.7
Over 15 years	4	5.7
Gender		
Male	53	75.7
Female	17	24.3
Position on site		
Quantity surveyors	20	28.6
Architects	11	15.7
Site engineers	34	48.6
Others	5	7.1
Projects undertaken		
Less than 5 projects	24	34.3
5 -10 projects	27	38.6
More than 10 projects	19	27.1

4.2 The relationship between speed and quality in construction projects

Table 4 presents the Pearson correlation analysis of construction speed and quality. A total of 13 variables, six representing quality related elements (RQ1 to RQ6) and seven representing speed related elements (RS1 to RS7) are correlated. Generally, the relations ranges from strong to moderate positive relationship. Tools for assessing efficiency and quality outcomes is positively correlated with planning processes ($r = 0.564$, $p < 0.000$) and technology integration ($r = 0.465$, $p < 0.001$). Consistency in quality has positive relationship with labour productivity ($r = 0.561$, $p < 0.000$), resource availability and reliability ($r = 0.560$, $p < 0.000$), stakeholder coordination and efficiency ($r = 0.457$, $p < 0.001$ and planning process ($r = 0.429$, $p < 0.003$). Quality of materials has positive relationship with stakeholder coordination and efficiency (= 0.563, $p < 0.000$), resource availability and reliability (0.463). Rework Reduction has positive relationship with how prioritizing speed impacts quality ($r = 0.529$, $p < 0.000$), technology integration ($r = 0.420$, $p < 0.003$), and planning process ($r = 0.418$, $p < 0.003$). Continuous improvement practices have a positive relationship with stakeholder coordination and efficiency ($r = 0.480$, $p < 0.001$) and how prioritizing speed impacts quality ($r = 0.417$, $p < 0.004$).

Table 4: Correlation of factors of construction speed and quality

		RQ1	RQ2	RQ3	RQ4	RQ5	RQ6	RS1	RS2	RS3	RS4	RS5	RS6	RS7
RQ1	Pearson Correlation	1												
	Sig. (2-tailed)													
RQ2	Pearson Correlation	0.223	1											
	Sig. (2-tailed)	0.132												
RQ3	Pearson Correlation	0.109	.325*	1										
	Sig. (2-tailed)	0.465	0.026											
RQ4	Pearson Correlation	0.146	.484**	.343*	1									
	Sig. (2-tailed)	0.328	0.001	0.018										
RQ5	Pearson Correlation	0.249	.356*	.437**	.500**	1								
	Sig. (2-tailed)	0.092	0.014	0.002	0									
RQ6	Pearson Correlation	.309*	.381**	.569**	.298*	.430**	1							
	Sig. (2-tailed)	0.035	0.008	0	0.042	0.003								
RS1	Pearson Correlation	0.283	0.177	.432**	0.174	.358*	.561**	1						
	Sig. (2-tailed)	0.054	0.234	0.002	0.241	0.014	0							
RS2	Pearson Correlation	0.035	0.166	.463**	0.231	0.178	.560**	.418**	1					
	Sig. (2-tailed)	0.813	0.265	0.001	0.119	0.232	0	0.003						
RS3	Pearson Correlation	0.285	0.179	.462**	.529**	.417**	.388**	0.249	0.266	1				
	Sig. (2-tailed)	0.052	0.227	0.001	0	0.004	0.007	0.091	0.07					
RS4	Pearson Correlation	.346*	.392**	0.269	.404**	0.096	.304*	.402**	0.109	.302*	1			
	Sig. (2-tailed)	0.017	0.006	0.068	0.005	0.523	0.038	0.005	0.464	0.039				
RS5	Pearson Correlation	0.076	.465**	.329*	.420**	.397**	.314*	-0.036	.299*	.345*	0.055	1		
	Sig. (2-tailed)	0.61	0.001	0.024	0.003	0.006	0.032	0.812	0.041	0.017	0.711			
RS6	Pearson Correlation	0.105	.564**	.493**	.418**	0.167	.429**	0.283	.432**	0.199	.341*	0.26	1	
	Sig. (2-tailed)	0.484	0	0	0.003	0.261	0.003	0.054	0.002	0.181	0.019	0.077		
RS7	Pearson Correlation	.301*	.373**	.563**	.354*	.480**	.457**	.532**	0.268	.346*	.424**	0.105	.315*	1
	Sig. (2-tailed)	0.04	0.01	0	0.015	0.001	0.001	0	0.068	0.017	0.003	0.485	0.031	

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

QUALITY PERCEPTIONS	SPEED PERCEPTIONS
RQ1=Performance Measurement Frameworks	RS1=Labor Productivity
RQ2=Tools for assessing efficiency and quality outcomes	RS2=Resource availability and reliability
RQ3=Quality of material	RS3=How prioritizing speed impacts construction quality
RQ4=Rework reduction	RS4=Stakeholders prioritization
RQ5=Continuous improvement practices	RS5=Technology Integration
RQ6=Consistency in Quality standards	RS6=Planning processes
	RS7=Stakeholders' coordination efficiency

4. DISCUSSION

The correlation analysis revealed several meaningful relationships between quality-related variables and elements influencing construction speed. These findings support the notion that increasing construction speed does not have to come at the expense of quality, but rather, the two can compliment each other through strategic planning, coordination and process control.

4.1 Tools for assessing efficiency and quality outcomes (RQ2) and planning processes (RS6)

Tools for assessing efficiency and quality outcomes and planning processes have a strong positive correlation (r = 0.564). Effective planning is linked to strong evaluation tools which implies that contractors who plan in advance are well placed to monitor their project performance. Performance measurement frameworks like the Balanced Scorecard contribute significantly to effective planning and tracking in fast paced construction environments (Gunduz and Al-Naimi, 2021). Technological integration is also moderately correlated to the tools for assessing efficiency and quality outcomes (r = 0.465). Technology integration has the ability to streamline

workflows and reduce human error (Ghaffar *et al.,* 2022) and smart tools can boost efficiency and consistency when properly integrated (Safety Culture Team 2024). Moreover, integration process require careful planning to streamline existing and advanced tools to balance speed and quality. In line with the tools and the plan process, Cao (2018) and Leo Xander Construction (2023) underscore that robust scheduling and execution strategies are key to balancing speed and output reliability.

4.2 Quality of material (RQ3) and stakeholders' coordination efficiency (RS7)

Quality of material and stakeholders' coordination efficiency have a strong positive correlation (r = 0.563). Improvements in coordination among stakeholders has an influence on quality of materials used. Effective coordination among stakeholders improves procurement decisions and material handling, which ultimately enhances the overall quality of construction outputs (Cao, 2018). When clients are clear and actively engaged in the project life cycle, it leads to fewer late-stage revisions and improved project outcomes (Boyd and Chinyio (2006).

4.3 Consistency in quality standards (RQ6) and labour productivity (RS1)

Consistency in quality standards (RQ6) and labour productivity (RS1) have a strong positive correlation (r = 0.561). The need of more speed in labour productivity should be continuously aligned to quality requirements. The Safety Culture Team (2024) underscores the importance of shared standards to avoid fragmented efforts..This resonates with Wawak *et al.* (2020) who emphasized the importance of aligning quality management practices across teams to maintain performance momentum. However, productivity is shaped by workers' skills, motivation and supervision (Karlsone and Ozola, 2023) and absenteeism, lack of training and poor site management are major constraints (Nguyen *et al.* 2020). On the other hand, substandard materials often result from weak quality control systems (Cao, 2018; Chin *et al.,*2024). Consistency in quality standard is also positively related to resource reliability and availability (r=0.561) that in turn affect labour productivity. Labour productivity is one of the most decisive factors in overall construction performance (Hanna, 2016) which cannot be realized without readily available and sufficient resources. While Consistency in quality standards and labour productivity can be observed to balance speed and quality, there are other factors that affect quality and labour respectively that can compromise the process.

4.4 Rework reduction (RQ4) and how prioritizing speed impacts quality (RS3).

Rework reduction (RQ4) and how prioritizing speed impacts quality (RS3) have a positive strong correlation (r=0.529). When speed is carefully planned and monitored, rework and waste can be minimized, resulting in higher quality outcome (Safety Culture Team, 2024). Likewise, project management, education and change control are the key to minimizing rework (Taghizadeh *et al.,* 2021; Safety Culture Team 2024). Excessive focus on speed can lead to rework, safety risks and long-term performance issues (*Wawak, et al.,* 2020). Similarly, while it is acknowledged that accelerated construction techniques improve efficiency, they often introduce risks such as structural defects, poor material durability and compromised workmanship (Phakoe, 2023). On the one hand, Cao (2018) and Leo Xander Construction (2023) associate rigorous quality checks with reduced rework and improved speed.

4.5 Quality of material (RQ3) and planning processes (RS6)

Quality of material and planning processes have a moderate positive correlation (r = 0.493). This suggests that better material decisions are made when project planning is thorough and proactive (Akinola *et al.* (2019). Clear planning frameworks are vital to maintaining momentum and quality (Dykstra, 2018). Inconsistent supply chains and procurement delays are among the top causes of slowdowns (Vigneshwar and Shanmugapriya, 2022) and logistical planning is crucial to avoid bottlenecks (Chang *et al.* 2017).

4.6 Continuous improvement practices (RQ5) and stakeholders' coordination efficiency (RS7)

Continuous improvement practices and stakeholders' coordination efficiency have moderate positive correlation (r = 0.480). Continuous improvement in quality delivery is the joint effort of stakeholders involved in the construction process and cannot be attained in isolation. It emphasizes on communication, shared understanding and collaborative workflows as key drivers of both speed and quality (Chang, 2002; Cao, 2018). Aligned stakeholder expectations are vital to minimizing disruptions and fostering collaborative decision-making (Chinyio and Olomolaiye 2010). Stakeholder alignment is a strategic approach to maintaining schedule discipline and project coherence, particularly in complex construction environments (CQRA Pvt Ltd, 2023).

5. CONCLUSION

This paper sought to establish the relationship between the factors of construction speed and quality which can guide balancing of the two dimensions. Accordingly, the strong positive relationship exists between tools for assessing efficiency and quality outcomes and planning processes; quality of material and stakeholders' coordination efficiency; consistency in quality standards and labour productivity; and, rework reduction and how prioritizing speed impacts quality. The stronger relationships that exist between these factors indicate that speed and quality are complementing each other if properly supported by integrated systems. Proper planning processes, when unified with performance assessment tools, create clarity in workflow sequencing, resource allocation, and risk mitigation, enables timely delivery without affecting quality. The observed linkage between material quality and coordination efficiency implies that supply chain reliability and stakeholder alignment significantly reduce delays and defects. Consistency in quality standards enhances labour productivity by minimizing ambiguity and errors, while reducing rework directly improves schedule performance and protects quality outcomes.

To attain the balance between construction speed and quality, project management practices should :

- Integrate project planning systems with quality assessment tools, ensuring that schedule monitoring is aligned with quality control checklists and performance standards.

- Involve stakeholder in the project through structured communication channels, regular progress meetings, and other approaches.and ensure they are conversant with quality of materials
- Implement continuous improvement in quality standards through periodic quality audits and align with labour productivity to avoid poor workmanship.
- Focus practices to shifting from a reactive "speed versus quality" mindset to a proactive "speed through quality" strategy.

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CAN DISRUPTIVE TECHNOLOGIES MITIGATE GREENHOUSE GAS EMISSIONS IN SELECTED PORTS IN AFRICA?

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This research focuses on the process by which disruptive technologies, such as Digital Twin Technology (DTT), can enhance port operations, especially in mitigating environmental risks. The port is a beehive of activity, with several processes contributing to GHG emissions. However, several African Ports have not been able to harness the potential of DTT in mitigating environmental risk. This exploratory research examines how selected Ports in Selected Developed Nations and Africa have been mitigating environmental risks and discusses the implications for African ports. The selected ports in developed nations that have adopted DTT include the Port of Singapore, the Port of Rotterdam (Netherlands), the Port of Antwerp-Bruges (Belgium), Busan Port (South Korea), the Port of Valencia (Spain): Port of Hamburg (Germany). The research examines the following selected ports in developing countries to ascertain what strategies were used to mitigate GHG emissions. The Ports are: Port of Durban in South Africa, Port of Kenya in Mombasa, Port of Tema in Ghana, West Africa, Lagos Port Complex in West Africa, Walvis Bay, Namibia, Port of Port Louis in Mauritius, and the Port of Tangermed in Morocco. This is a case study research design that adopts an in-depth, qualitative investigation of many cases, in this case, ports in Africa and Developed nations within their real-world context. The findings of the research show that only Tangermed ports is making use of DTT; all other African ports have not been able to harness the benefits of disruptive technologies. Therefore, it is recommended that maritime stakeholders collaborate to develop sustainable strategies to enhance the adoption of smart technologies, more so because these emissions affect lives, ports in Africa. The implication of this research is to harness the potential of disruptive technologies to enhance sustainability.

Keywords: Digital Twin Technology, Disruptive Technologies, Environmental Risks, Greenhouse Gas Emissions, Ports, Africa.

1. INTRODUCTION

Ships are cost-effective for moving large volumes of cargo from origin to destination, and they serve as the basis for the maritime transport supply chain. Maritime transport is the spine of global trade, as more than 80 percent of goods are transported by sea (World Bank Group, 2025). The maritime sector is a major source of greenhouse gas emissions (GHG) because the entire shipping value chain, which includes vessel fleets, ports, terminals, and hinterland transportation, contributes massively (Eom et al 2023). Greenhouse gas emissions from ships have emerged as a major concern for the environment in which they occur (Sun et al., 2026). Nevertheless, Global trade is an important revenue-generating activity. Alamoush et al. (2022) also confirm the significance of ports in global trade. This is because developing nations depend on ships to

transport general cargo, containers, oil, and gas from the port of origin to the port of destination; this accounts for approximately 55% of seaborne exports and 61% of imports (World Bank Group, 2025). Due to the massive scale of maritime trade and its anticipated growth, the shipping industry continues to have a burgeoning effect on global greenhouse gas emissions (Sun et al., 2026). Liu et al. (2025), posit that since Ports are pivotal nodal points in maritime supply chains, they are under intense pressure to reduce emissions, optimize resource use, and adopt digital technologies. Digital technologies are disruptive in nature.

Disruptive technologies are a set of digital technologies that cause a significant shift in the modus operandi. It changes processes and procedures. Due to the various benefits of disruptive technology, developed nations have embraced the various types of disruptive technologies, such as Digital Twin Technology, Artificial Intelligence, Big Data, Blockchain, and Internet of Things, just to name a few. This research focuses on the role of DTT in mitigating GHG emissions.

DTT can only operate where there are smart ports, as it operates with structured data. Many ports in Africa are still predominantly traditional and very paper-based. Therefore, it is necessary to examine the role of DTT in mitigating environmental risks, especially in the selected ports that have started implementation. This can serve as an impetus for ports in Africa.

Many tools can assist in decarbonisation; the most immediate solution for reducing carbon emissions is to reduce vessel waiting time near ports and increase operational efficiency (Eom et al., 2023). Operational efficiency improvement in maritime stakeholders' port operations can be achieved using data. This data collection and operational efficiency improvement can be realized using a digital twin (Eom et al., 2023).

This research is significant because it aligns with several UNSDG (2030), such as SDG 9 on modernizing port infrastructure; SDG 13 on climate action, reducing GHG; SDG 8, Sustainable ports; SDG 11, Sustainable cities and communities. This research is also critical for maritime stakeholders to make critical decisions in terms of the adoptions of DTT. The following section, which forms the pillars of this study, includes the objectives of the research, an abridged literature review, the methodology, discussion, conclusion, and recommendations.

2. OBJECTIVES OF THE RESEARCH

- Examine how ports in developed nations mitigate GHG using DTT
- Examine which ports in Africa use DTT to mitigate GHG
- Discuss the implications of GHG mitigation using DTT to African ports

3. ABRIDGED LITERATURE REVIEW

Worldwide, climate change is a reality that has spared no one. As climate change becomes gradually evident, the urgency to address maritime decarbonization has reached a climax (Eom et al., 2023). From the time a vessel berths to the point the container leaves the port, there are carbon emissions. In 2018, the International Maritime Organization (IMO) agreed to reduce GHG emissions, which include carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O), from international shipping by at least 50% by 2050 (relative to 2008) (IMO, 2018).

The dependence of ships and ports on fossil fuel generates anthropogenic emissions, which include environmental externalities, such as greenhouse gas (GHG) emissions and air pollutants (Sulphur emissions (SOx), Nitrogen Oxide (NOx), and particular matters (cited in Alamoush et al, 2022). DTT's interactive scheduling for the proposed model improves predictions of vessel arrival time and voyage carbon emissions (Eom et al., 2023).

Digital twin technology (DTT) is a replica of a real-life entity. According to Kan et al. (2021), DTT enables smart ports to have a digital representation of reality at every part of the port. Eom et al (2023) also confirm that DTT represents a virtual counterpart of a physical object, system, or process and is continually updated with real-time data from its physical counterpart. One of the benefits of DTT-enabled management is that it can predict potential risk in the smart port supply chains. Even though DTT has considerable potential to transform port operations, high implementation costs and uncertain benefits have constrained its adoption (Saragani et al., 2026; Nurrosyidah et al., 2026).

3.1 Theoretical Framework

The digital transformation theory applies to this research because it explains the nexus of technology, people, and process that transforms organisations (Elia et al., 2024). The application of this theory is that DTT can be used as a tool to mitigate GHG emissions. This theory implies that DTT mitigates the underlying risk that emanates from GHG emissions.

3.2 DTT as a Disruptive Technology

DTT is a disruptive technology because it not only changes the processes and procedures, but it also causes an improvement. Lacy et al. (2020) posit that the 4th Industrial Revolution (4IR) is characterized by various technologies disrupting and affecting all industries across the globe.

Lacey et al., (2020) further outlines four major features of disruptive technologies firstly they are an, "enabler of greater efficiencies by reduced wastage, which is obvious in the ability of DTT to provide predictive maintenance; secondly, they "enhance innovation by allowing new entrants to disrupt existing markets while challenging incumbent companies to pivot into new business models and new markets". Thirdly they "increase information transparency", collection and analysis of data quickly to enhance decision making and finally, they provide a shift from the traditional to the contemporary. All these features manifest in DTT.

Eom et al. (2023) state that a port digital twin serves as a digital replica of a physical port in the real world, encompassing vessels, quay cranes, yard tractors, and hinterland transportation. These digital models allow port stakeholders to monitor and forecast operational efficiency in real time, thereby reducing energy consumption and promoting greener port operations Eom et al, 2023)

4. METHODOLOGY

This section provides an overview of the philosophical underpinning, research design, approach, and strategy used for this study. It describes the relevant research methodology and practical approach used to achieve the set of research objectives. The philosophical underpinning of this research is critical realism (CR). CR is a nascent and sustainable philosophical paradigm that serves as a practical alternative to predominant paradigms such as positivism, interpretivism, and pragmatism (Lawani, 2020). Stutchbury (2021) affirms that critical realism is about explaining reality through the lenses of invisible causal factors that affect experiences and events. CR is relevant as it explains why most ports in developing nations have not adopted disruptive technologies such as DTT. Stutchbury (2021) further explains that most of reality is like the iceberg; even though it is invisible to the observer, it is a major causal factor that gives rise to various experiences and events. This study adopts the qualitative research design that leans towards an inductive approach. The case study research strategy applies to this study. Case Study Research is relevant when a contemporary phenomenon is to be studied (Srilata and Satyendra, 2019). It provides a detailed understanding of the phenomenon (Gagnon, 2010). Yin (2003) posits that case study research investigates a contemporary phenomenon within a real-life context. Document analysis over a period will be used as a data collection tool.

5. DISCUSSION

DTT is a type of disruptive technology that can mitigate environmental risk. This section discusses how DTT enables ports in developed and developing nations to mitigate GHG. The following ports have adopted DTT: Port of Singapore; Port of Rotterdam (Netherlands); Port of Antwerp-Bruges (Belgium); Busan Port (South Korea); Port of Valencia (Spain): Port of Hamburg (Germany). This discussion ends with its application to selected African ports.

5.1 How have ports in developed nations mitigated GHG using DTT

This section examines selected ports in developed nations and how they have mitigated GHG emissions using DTT. Table 1 shows the application and benefits of DTT in the seven selected ports. These ports represent Europe, Asia, and North America. A central theme is that DTT provides an opportunity to monitor emissions at various operational levels. Also, to curb waste, DTT enables the port authority to provide predictive maintenance. The selected ports have used DTT to monitor and curb GHG emissions. For ports like Busan in South Korea, the DTT model has provided savings of 75% of carbon emissions (Eom et al., 2023). The Port of Rotterdam (2026) indicated that DTT allows the port to provide just-in-time sailing for vessels. This means that vessels do not spend more time than needed, hence reducing CO2 emissions by 14%.

Table 1: Application of DTT in reducing GHG in Selected Developed Countries

	Port	Application of DTT
1.	Maritime Port of Singapore	DTT provides real-time vessel monitoring and underwater visualisation of hull inspection and cleaning (MPS, 2026)
2.	Port of Rotterdam	The Port of Rotterdam focuses on Just in Time sailing, which is port call optimisation. The Port of Rotterdam states that it is about making port calls as efficient as possible. For example, container ships can reduce their CO2 emissions by 14% on average if they utilise just-in-time (jit) sailing. Eliminating paper documents to reduce carbon footprints. Green & Digital Corridors' to achieve CO2-neutral and digital supply chains on specific routes together with other ports and significant stakeholders.
3	Port of Antwerp Bruges	To Monitor Carbon emissions
4	Busan Newport	The DTT model saved the Busan Newport over 75 % of carbon emissions
5	Port of Valencia	(González-Cancelas et al. 2025) states for ports in Spain, DTT enhances the efficiency of production processes by enabling real-time monitoring, predictive maintenance, and optimized decision-making
6	Port of Montreal	Green corridors; Augmented Reality; Improve infrastructure planning; three dimensional port locations and facilities

7	Port of Hamburg	The entire port is cloned and monitored. Smart Bridge; Preventive maintenance, and automated traffic control

Source: Osundiran, 2026

5.2 Ports in Africa that used DTT to mitigate GHG

As of the time of this research, digital twins have not been adopted by many African ports. Awaga et al., (2026) confirm that African ports have had difficulties implementing the greening of ports project due to economic, technological, socio-cultural, legal, topographical, and fiscal constraints. Even though digitalisation has emerged as a pivotal solution to operational inefficiencies, the process of adoption of digitalisation in African Ports is slow (Almedia and Okon, 2025). This now leads to the question of how ports in Africa mitigate GHG emissions. Seven Ports will be examined in Africa. They include the Port of Durban in South Africa, the Port of Kenya in Mombasa, the Port of Tema in Ghana, West Africa, Lagos Port Complex in West Africa, Walvis Bay, Namibia, the Port of Port Louis in Mauritius, and the Port of Tangermed in Morocco. Table 2 shows how selected African ports have been mitigating GHG emissions. Transnet does not use DTT to mitigate GHG emissions. The port makes use of upgraded terminal equipment. (ECR 2025). The Kenya Port Authority has a Green Port Policy 2024-2028 that stipulates its strategies and plans for the next four years (WPSP, 2026). Out of the 7 selected ports from developing nations, only the port of Tangermed in Morocco makes use of DTT. Tangermed Port in Morocco uses DTT to predict and monitor, optimise maintenance operations (Tangermed Special Agency, 2026).

Table 2: Mitigation of GHG emissions in Selected African Ports

	Port	Mitigation Strategies of GHG
1.	Port of Durban, South Africa	Transnet does not use DTT to mitigate GHG emissions. The port makes use of upgraded terminal equipment. (ECR 2025)
2.	Port of Kenya, Mombasa	The Kenya Port Authority has a Green Port Policy 2024-2028 that stipulates its strategies and plans for the next four years (WPSP, 2026) 75% of Kenya's energy mix is renewable (hydro, geothermal, wind, and solar), Shore power for vessels (cold ironing) is being piloted, with full implementation expected by December 2025, significantly cutting emissions from docked ships (WSPS, 2026)
3	Port of Tema, Ghana, West Africa	Cleaner energy; Installation of Solar Panels (Sustainable Stories Africa, 2026)
4	Lagos Port Complex, West Africa	Energy Management Policy (NPA, 2026) . There are no clear evidence of the policy being achieved.
5	Walvis Bay, Namibia, Southern Africa	Namport (2026) states that it is dedicated to reducing its carbon footprint by 10 percent through alternative energy sources. However, Projects such as the feasibility

		study on solar and wind energy at the Port of Walvis Bay are currently being considered.
6	Port of Port Louis	Mauport (2026) MPA has installed a Solar Photovoltaic (SPV) plant of 10 kWp capacity at the Oil Jetty to power the electrical system.
7	Port of Tangermed, Morrocco	Application of DTT to predict and monitor; optimise maintenance operations (Tangermed Special Agency, 2026)

Source: Osundiran, 2026

5.3 Implication of DTT to African Ports

There are several reasons why ports in Africa have not been able to harness DTT. DTT, as well as other disruptive technology works with very well-organised data. Most ports in Africa are still traditional-based. The transition to smart ports has not been fully optimised.

Smart port requires adequate preparedness. The port environment must be conducive to accommodating such changes. Daniel et al (2025) posit that many ports, especially in developing regions, lack cohesive strategies, resulting in fragmented adoption and limited interoperability.

However, stakeholder collaboration is critical. Establishing partnerships is key to bringing technological innovations to ports, improving automation, security, and data management (Almeidia, 2023)

6. CONCLUSION AND RECOMMENDATIONS

Can Disruptive Technologies Mitigate Greenhouse Gas Emissions in Selected Ports in Africa? Yes, it can. However, many African ports have not adopted disruptive technologies to mitigate GHG emissions.

According to the World group (2025), 3% of global greenhouse gases through climate change already takes its toll on ports and maritime chokepoints, putting global supply chains at risk. Resilient port infrastructure and enhanced digital solutions will protect ports against shocks and increase operational efficiency (World Bank Group, 2025).

All the selected ports in developed nations that have adopted DTT include the Port of Singapore, the Port of Rotterdam (Netherlands), the Port of Antwerp-Bruges (Belgium), Busan Port (South Korea), the Port of Valencia (Spain): Port of Hamburg (Germany). The research also examines the following selected ports in developing countries to ascertain what strategies were used to mitigate GHG emissions. The Ports are Port of Durban in South Africa, Port of Kenya in Mombasa, Port of Tema in Ghana, West Africa, Lagos Port Complex in West

Africa, Walvis Bay, Namibia, Port of Port Louis in Mauritius, and the Port of Tangermed in Morocco. The findings of the research show that only Tangermed ports are making use of DTT; all other African ports have not been able to harness the benefits of disruptive technologies. Therefore, it is recommended that maritime stakeholders collaborate to develop sustainable strategies to enhance the adoption of smart technologies, more so because these emissions affect lives; ports in Africa should explore digital twin technology initiatives to mitigate them. The implication of this research is to harness the potential of disruptive technologies to enhance sustainability. Further research will be to examine peculiar challenges that act as a barrier to the adoption of disruptive technologies.

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Construction risks in confined heritage urban setting: empirical evidence from a Case Study of Stone Town, Zanzibar, Tanzania.

Abstract

Construction in confined heritage urban areas poses significant risks due to spatial constraints, aging infrastructure and heritage preservation. While construction risk management frameworks are widely applied, they are largely generic and provide limited guidance for the projects in dense historic urban environments where heritage sensitivity and urban confinement coexist.

The study aims to identify predominant construction risks, examine their impacts, and propose context-specific mitigation strategies appropriate for confined heritage settings. This study adopted a mixed method, single case study design, combining quantitative data from 64 structured questionnaires with qualitative insights from 9 semi-structured interviews and systematic field observations. Quantitative data were analyzed using descriptive statistics and relative importance measures to prioritize risks, while qualitative data were used to contextualize risk mechanisms and existing management practices.

Findings indicate that workers' fatigue, restricted emergency access, delayed material delivery, and pedestrian obstruction are among the critical risks affecting construction activities in Stone Town. Additional risks include noise pollution, theft, environmental degradation, and unintended damage to adjacent historic structures, resulting in unplanned restoration costs and schedule disruptions. These risks are exacerbated by limited site space, high pedestrian activity, and inadequate coordination among construction stakeholders and heritage authorities. To address these challenges, the study recommends implementing regular safety training programs, developing site-specific emergency response plans, and strengthening coordination between contractors and regulatory authorities to improve site safety and accountability in confined heritage urban areas.

Key words: *Construction risk management, Heritage urban environments, Confined construction sites, Stone Town-Zanzibar, Risk mitigation strategies, Construction safety*

1. Introduction

Rapid urbanization in many developing countries has intensified construction in already dense and historically significant urban cores. In these contexts, construction operations must coexist with aging infrastructure, limited space, high pedestrian activity and heritage conservation requirements. Construction Risk Management (CRM) frameworks have evolved to address uncertainties in cost, time, quality and safety. However, these frameworks are largely generic and developed for conventional or greenfield projects that assume adequate access, logistical flexibility and stable regulatory conditions (Project Management Institute PMI, 2021; (Khatatbeh, 2025;

Abaza and Kisi, 2024). As a result, they may not fully capture the compounded operational and contextual risks in confined heritage urban environments.

Urban construction research shows that spatial congestion, restricted access routes and limited staging areas increase logistical inefficiencies and safety risks (Doloi, 2012; Lingard & Rowlinson, 2005). In dense historic hubs, these challenges are further intensified by structurally vulnerable buildings and strict regulatory oversight. Heritage conservation literature emphasises that historic structures often built with traditional materials are particularly sensitive to vibration, dust, and unintended structural loading during adjacent construction activities (Ali et al, 2024; Forma et al, 2023; Stubbs, 2009). The coexistence of development pressures and conservation mandates therefore creates a complex risk landscape that requires context-specific management approaches. Dense historic urban cores are characterised by spatial confinement, high pedestrian activity, aging infrastructure, and conservation controls, all of which intensify logistical safety and coordination risks during construction activities.

Stone Town, Zanzibar, exemplifies these conditions. Recognised as a World Heritage Site for its Swahili coastal architecture and cultural importance, it presents a blend of urban density and heritage preservation, a compact morphology with a mix of residential and commercial spaces and narrow streets, structurally vulnerable coral buildings, and regulated conservation regime create a context in which conventional CRM approaches may be insufficiently responsive to localised spatial and institutional constraints. The ongoing restoration and infrastructure projects in this compact area pose challenges for pedestrian flow, tourism, and regulatory compliance. Conservation efforts focus on maintaining authenticity and integrity but offer limited guidance for managing construction risks in tight urban settings.

Existing studies on construction risk management have largely focused on generic project environments, emphasising standard risk identification and assessment, without accounting for spatial or regulatory constraints (PMI, 2021). Research on urban construction highlights challenges related to congestion, access limitations, and safety in dense settings (Doloi, 2012; Lingard & Rowlinson, 2005), while heritage conservation studies extensively examine vulnerability of historic structures to construction-induced impacts, particularly focused on assessing structural responses, mapping exposures and developing monitoring techniques. There is limited attention to integrated risk management approaches for construction activities in complex and congested heritage contexts. (Kosikova et al, 2025; Azam et al, 2024; Kong, 2024; Montabert et al, 2024; Stubbs, 2009). Despite the practical importance of managing risk in such environments, there is inadequate empirical research systematically identifying and prioritising construction-related risks in confined heritage urban settings.

This gap constrains the development of content-sensitive mitigation strategies capable of balancing operational efficiency, worker safety, and heritage preservation in confined historic urban settings.

The study addresses this gap by examining construction related risks in confined heritage urban environments, using Stone Town, Zanzibar, as an empirical case. It focuses on identifying and prioritising the predominant risks associated with construction activities in such settings, and analysing their implications for project performance, worker safety, public accessibility, and integrity of adjacent heritage buildings. In doing so, the study advances context-responsive risk management by proposing mitigation measures that reflect the spatial, operational, and regulatory constraints characteristic of these environments.

The study contributes to construction risk management by extending existing frameworks beyond conventional project settings to account for the complexities of dense, historically sensitive urban contexts. By integrating spatial constraints and heritage considerations into risk identification and prioritisation, it provides empirically grounded insights for improving safety, coordination, and conservation outcomes. The findings offer practical relevance for construction practitioners and urban managers, while also contributing to the limited body of knowledge on risk management in confined heritage urban environment.

2. Construction Risk in Confined Heritage Urban Settings: Contextual and Literature Background

Construction risk in confined heritage urban environments lies at the intersection of construction risk management (CRM), urban construction logistics, and heritage conservation. While CRM frameworks provide structured approaches to risk assessment (PMI, 2021; Zou et al, 2007), studies on sense urban construction and heritage conservation highlight additional spatial, operational, and regulatory constraints (Lingard & Rowlinson, 2005). However, these perspectives are rarely integrated, limiting context-specific understanding of risk in confined heritage settings.

2.1 Construction Risk Management: concepts and limitations

The Construction Risk Management (CRM) refers to the systematic processes involving risk identification, analysis, response planning, monitoring, and control throughout the project lifecycle (PMI, 2021). Core CRM scholarship emphasises structured classification of risks, financial, contractual, technical, environmental, and safety-related, supported by probability–impact matrices and quantitative prioritization tools (Akintoye & MacLeod, 1997). These approaches have strengthened methodological rigor in construction management research and practice.

Critiques of mainstream CRM highlight limitations in contextual adaptability. Taroun (2014) argues that construction risk research often overemphasizes probabilistic modelling while under-theorizing situational and environmental variables that shape risk manifestation. Similarly, Chapman and Ward (2011) stress that risk frameworks must be responsive to project-specific conditions rather than applied as standardized templates.

Current risk management frameworks provide important foundations for heritage and urban risk assessment but remain limited in their capacity to address operational construction risks in confined heritage settings. The Historic Urban Landscape (HUL) framework promotes integrated heritage management and policy-oriented urban conservation but limited guidance for construction operations in dense heritage environments (Coimbra et al., 2025). ISO 31000 provides general principles of risk management, but historic urban areas need context-specific analysis given their specific vulnerabilities and complex urban arrangements (Ferreira & Ramírez Eudave, 2022). Failure Mode and Event Analysis (FMEA) consider interdependent urban systems such as buildings, utilities and heritage assets; yet, it provides limited integration of cultural heritage values and conservation restrictions (Ferreira & Ramírez Eudave, 2022). The heritage risk management frameworks of the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) are primarily focused on preventive conservation and deterioration processes rather than on operational risks during the construction phase (Pedersoli et al., 2016). Additionally, advanced computational frameworks have been developed to enhance optimisation and robustness analysis in complex systems, such as Multiobjective Evolutionary Algorithms (MOEAs). However, these frameworks are largely model-driven and have limited relevance in the context of empirically grounded construction risk identification in confined heritage urban environments (Liu et al., 2023). The limitations highlight the need for empirical studies on construction risks in confined heritage urban areas like Stone Town, Zanzibar.

Although these critiques acknowledge contextual variability, empirical studies operationalizing CRM in spatially confined, heritage-sensitive environments remain limited. Furthermore, Doloi (2012) shows that risk factors affect project performance differently across organisational and environmental conditions. This reinforces the argument that risks are not static categories; rather, they are contingent on spatial, institutional, and socio-technical contexts. These insights directly inform the present study's focus on confined heritage urban areas, where spatial and regulatory constraints shape both the likelihood occurrence and consequences of risk events.

2.2 Construction in dense and confined urban settings

Urban construction research identifies logistical congestion, restricted access, and limited storage space as key operational constraints in dense inner-city projects (Tam et al, 2004). Studies indicate that these constraints heighten schedule uncertainty, safety risks, and material-handling inefficiencies (Lingard & Rowlinson, 2005). These findings are particularly relevant to building and civil engineering operations in narrow urban morphologies.

Research on urban megaprojects further shows that restricted access routes and high pedestrian flows increase interaction risks between construction activities and the public domain (Love et al., 2016). Confined sites limit the flexibility of heavy-equipment movement and emergency response, thereby amplifying operational vulnerability. Although these studies examine dense urban construction broadly, they rarely integrate heritage sensitivity as an additional risk dimension.

Doloi (2012) emphasizes that time- and cost-related risks in construction are closely linked to logistical inefficiencies and stakeholder coordination challenges. In spatially constrained environments, such inefficiencies are likely to intensify, emphasising the need for context-specific assessment. The study examines how confined urban morphology interacts with heritage conditions to shape risk profiles.

2.3 Heritage sensitivity and construction risk

Heritage conservation literature underscores the fragility of historic building fabric and the importance of preserving authenticity and structural integrity during interventions (Stubbs, 2009). Construction activities near historic structures can generate vibration, dust, and unintended load redistribution, accelerating deterioration (Avrami, Mason, & de la Torre, 2019). These impacts extend beyond technical damage, affecting cultural value and regulatory compliance. Roders and van Oers (2011) argue that heritage cities require integrated management frameworks that balance development pressures with conservation objectives. UNESCO (2019) operational guidelines emphasize coordinated governance and careful monitoring in historically sensitive areas. However, these frameworks primarily address planning and conservation oversight rather than construction-phase operational risks. Pendlebury (2013) introduces the concept of the "heritage planning assemblage," highlighting the multiplicity of actors involved in conservation decision-making. This institutional complexity has implications for construction risk management, as coordination gaps and regulatory ambiguities can introduce additional uncertainty. Despite this, empirical studies integrating heritage governance with CRM methodologies remain sparse.

2.4 Governance, institutional complexity, and urban risks

Institutional fragmentation and multi-level governance structures significantly affect the effectiveness of risk management in urban projects (Love et al., 2016). Heritage areas often involve municipal authorities, conservation agencies, and community stakeholders, increasing coordination demands. Inadequate communication among these actors may exacerbate project delays and compliance risks. PMI (2021) emphasizes stakeholder engagement as a critical element of risk mitigation. However, the application of stakeholder-based risk strategies in confined heritage contexts has not been systematically examined. Existing literature tends to separate governance analysis from operational risk assessment, leaving a conceptual gap that this study addresses.

2.5 Heritage and cultural preservation challenges

Heritage and cultural preservation are critical considerations in construction within confined urban areas, particularly in historically significant contexts such as Stone Town, Zanzibar, a UNESCO World Heritage Site. These environments are characterized by closely spaced buildings constructed using traditional materials such as coral stone, lime mortar, and carved timber elements (UNESCO, 2023). Such materials are highly sensitive to vibrations, moisture, and incremental structural stress, making them vulnerable to damage from nearby construction activities. Even

minor interventions can therefore result in structural instability or irreversible alternation of cultural assets. Construction in heritage urban areas must also maintain architectural authenticity by using compatible materials and techniques while avoiding intrusive or irreversible changes (Nocera, 2017). This often restricts the use of heavy machinery and modern construction methods, particularly in areas with fragile foundations or limited access. These constraints intensify operational challenges, requiring careful planning, specialized skills and close regulatory oversight. Consequently, construction activities in such environments are shaped not only by technical considerations but also by cultural, materials, and institutional sensitivities.

3. Methodology

3.1 Urban context, historical and architectural significance-the case study area

The study was conducted in Stone Town, Zanzibar. Stone Town forms the historic core of Zanzibar City. Geographically positioned along the Indian Ocean seaboard of East Africa, the area has historically served as a trading hub linking Africa, the Middle East, and Asia. Stone Town is characterized by a built environment consisting of narrow streets, 1.5-2.5 meters wide and high building density. Vehicular access is limited in many areas, and pedestrian movement dominates daily activity. This spatial configuration creates inherent logistical constraints for building, particularly in material delivery, equipment maneuverability, temporary storage and emergency access. Stone Town is widely recognized for its architectural and cultural heritage, reflecting Swahili, Arab, Persian, Indian, and European influences. The building stock is predominantly constructed of coral rag stone and lime mortar, materials that are structurally vulnerable to vibration, moisture, and incremental physical stress. Many structures are over a century old and require periodic maintenance and restoration. The historic core is subject to conservation regulations administered by heritage management authorities, which oversee alterations, renovations and new construction. Construction activities in this environment must therefore comply with general building codes, occupational safety standards, and conservation guidelines intended to preserve the architectural character and structural integrity of adjacent buildings.

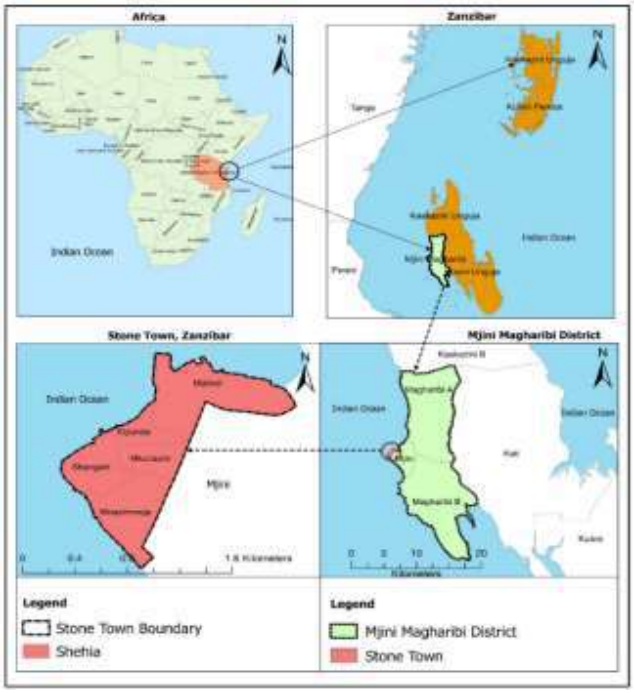


Figure 1: Locational map of Stone Town, Zanzibar

Stone Town supports intense mixed-use activity and high pedestrian movement, increasing sensitivity to obstruction, noise, dust and service disruption during construction operations. The urban infrastructure includes aging drainage networks, narrow access corridors, and limited vehicle parking spaces. Underground services are often poorly mapped, increasing the risk of accidental damage during excavation or rehabilitation work. Limited staging space restricts on-site material storage, encouraging phased or just-in-time delivery. Emergency access is also constrained. Firefighting and ambulance services may face delays due to narrow streets and congestion, underscoring the importance of proactive site-level risk mitigation. These infrastructural realities align directly with the study's aim of assessing construction-related risks in confined, historically sensitive urban settings.

Stone Town presents a convergence of spatial confinement, heritage sensitivity, dense public interaction and regulatory oversight. These characteristics reflect the conceptual issues identified in the literature review: the limitations of generic construction risk management frameworks in a typical urban context. The area provides a suitable empirical setting for identifying predominant risks, examining their impacts, and proposing mitigation strategies tailored to confined heritage environments. By focusing on Stone Town, the study generates insights transferable to other dense historic urban centers experiencing similar development pressures and conservation constraints.

3.2 Research design

This study employed a mixed-methods single case study design to assess construction-related risks in a confined heritage urban environment. The case study strategy was appropriate because the

research examines construction risk within real-life spatial and regulatory context, where operational practices are inseparable from the surrounding urban morphology and governance framework (Yin, 2018). Stone Town was treated as a bounded case characterized by spatial confinement, high pedestrian density, and active construction activities. A convergent mixed-methods approach was adopted (Creswell & Plano Clark, 2018), which involved simultaneous qualitative and qualitative data collection, which were analysed separately, and merged during interpretation. The quantitative component identified and prioritized predominant risks using structured survey data, while the qualitative component provided contextual explanations of risk mechanisms, impacts, and mitigation practices through interviews and field observations. Integration occurred at the interpretation stage, strengthening construct validity through methodological triangulation.

Risk levels were classified into five categories (very high, high, medium, low and very low), consistent with categorization approaches commonly adopted in construction management studies (Enshassi et al, 2010; Azman et al, 2019; Boakye et al, 2023). Considering the relatively narrow range of observed RII values (0.522 – 0.644), equal interval thresholds were applied to derive the specific category boundaries: very high (0.620-0.644), high (0.596-0.619), medium (0.572-0.595), low (0.548-0.571), and very low (0.522-0.547).

The primary unit of analysis was active building construction sites within the historic core of Stone Town. These sites represent operational spaces where the confined urban form, infrastructural constraints, and heritage oversight intersect. The institutional actor, which was STCDA was treated as a secondary analytical unit, with coordination and compliance processes influencing risk dynamics.

Sampling and sampling strategy

The study population comprised construction stakeholders directly involved in active construction sites within Stone Town, including contractors, site engineers, supervisors and regulatory officials from the Stone Town Conservation and Development Authority (STCDA). An initial sample size of 96 was estimated using Cochran's (1977) formula for sample size determination, assuming a 95% confidence level and a 5% margin of error. However, due to practical field constraints, including limited access to active construction sites and respondent availability within the bounded case study area, 81 questionnaires were distributed. Of these, 64 valid responses were obtained, representing a response rate of 79%, which formed the final analytical sample used for the quantitative analysis. The sampling approach combined purposive and stratified techniques to capture perspectives across relevant professional roles involved in construction activities, consistent with non-probability sampling approaches in applied field research (Bryman, 2016; Patton, 2015). The questionnaire survey involved 64 respondents drawn from six active construction sites within Stone Town, comprising of 40 construction workers (skilled and unskilled labourers from different trades), 19 site engineers and 5 architects, all of whom were directly involved in ongoing construction activities. In line with case study methodology, the findings are intended to provide context-specific insights grounded in the Stone Tonw case (Yin, 2018).

3.3 Data collection instruments

Structured questionnaire

The questionnaire comprised five sections: respondent profile, risk frequency, impact assessment, mitigation measures, and open-ended recommendations. Risk frequency was measured on a five-point Likert scale (1 = Very rare; 5 = Very often). Impact assessment captured probability (High/Medium/Low) and severity as a percentage (0-100%). Mitigation importance was rated from 1 (Very unimportant) to 5 (Very important). Likert scaling is widely used in construction risk research for its suitability for ordinal ranking (Doloi, 2012).

Semi-structured interviews

Interviews explored professional background, risk experiences, impacts on stakeholders, mitigation strategies, regulatory frameworks, and implementation challenges. Semi-structured interviewing enabled probing of governance complexity and context-specific mitigation mechanisms (Bryman, 2016).

Field observation

Systematic on-site observation documented access limitations, storage constraints, pedestrian congestion, and proximity to adjacent heritage structures. Observation enhanced contextual validity and triangulated survey findings.

Data collection

Primary data were collected using structured questionnaires, semi-structured interviews and systematic field observation. The instruments were designed to capture predominant construction-related risks in confined heritage areas; the impacts of these risks across safety, environmental, and structural dimensions; and, existing mitigation measures and institutional coordination practices. A total of 96 respondents were initially targeted. Of these, 64 respondents completed structured questionnaires and 9 participated in semi-structured interviews.

Data Category	Targeted sample	Valid responses	Survey response rate (%)
Questionnaires	81	64	79%
Interviews	15	9	60%
Total Respondents	96	–	–

Semi-structured interviews were conducted with nine key informants, including contractors actively engaged in confined-site construction and government officials from the Stone Town Conservation and Development Authority (STCDA). The interview guide was designed to prompt detailed insights on risk experiences specific to Stone Town's spatial configuration; perceived impacts on workers, residents, businesses and adjacent heritage structures; institutional coordination and regulatory interactions; and, risk mitigation practices and implementation barriers.

3.4 Data analysis

Quantitative data were analyzed using descriptive statistical techniques, including frequencies, means and standard deviations, to summarize respondent characteristics and assess the distribution of risk perceptions. To prioritize the identified construction -related risks, the Relative Importance Index (RII) was computed for each risk variable, calculated as:

$$RII = \frac{\sum W}{A \times N}$$

Where W = weight assigned, A = highest weight (5), N = total responses (Zou et al., 2007). RII facilitates transparent prioritization of ordinal survey data in construction research. RII values range from 0 to 1, where higher values indicate greater perceived severity of a given risk. Qualitative data were analyzed using thematic analysis. Codes were developed inductively to identify patterns in spatial constraints, risk escalation mechanisms, and governance coordination.

3.5 Construct validity and triangulation

Construct validity was ensured through theoretical grounding of risk categories in established construction risk literature (Zou et al., 2007); explicit alignment between research questions and instrument sections; methodological triangulation (Creswell & Plano Clark, 2018); and, cross-validation of RII rankings with qualitative themes. Convergence between data sources strengthened internal consistency and reduced measurement bias.

3.6 Ethical compliance

Participants were informed about the objectives of the study. Informed consent was obtained from all interview participants prior to participation, where respondents were assured of confidentiality and anonymity, and the information collected was used solely for the purposes of this study.

4. Findings

4.1 Predominant construction risks (RII analysis)

Risk prioritization was conducted using the Relative Importance Index (RII), based on five-point Likert scale responses. Twelve risks were evaluated. The highest-ranked risks were worker fatigue due to prolonged shifts (RII = 0.644), limited access for emergency vehicles (RII = 0.644), obstruction of pedestrian pathways (RII = 0.638), delayed material deliveries (RII = 0.634), and, conflict between stakeholders (RII = 0.626). Based on the adopted RII classification approach, the identified risks were grouped into five risk levels (very high to very low) according to their RII values, as presented in Table 4.1, to facilitate interpretation of their relative severity. This categorization complements the ranking by providing a clearer distinction of priority levels, thereby supporting more targeted risk management and mitigation strategies.

Table 4.1: Construction risks RII

Specific Risk during construction	N	Mean	Std. Dev.	Relative Importance Index (RII)	Rank	Risk level
Worker fatigue due to prolonged shifts	64	3.22	1.506	0.644	1	Very high
Limited access for emergency vehicles	64	3.22	1.464	0.644	2	Very high
Obstruction of pedestrian pathways	64	3.19	1.521	0.638	3	Very high
Delayed material deliveries	64	3.17	1.475	0.634	4	Very high
Conflict between stakeholders	64	3.13	1.409	0.626	5	Very high
Insufficient storage space for materials	64	3.09	1.498	0.618	6	High
Theft or vandalism of construction materials	64	3.05	1.419	0.610	7	High
Noise pollution affecting residents	64	2.97	1.512	0.594	8	Medium
Structural damage to nearby historical buildings	64	2.92	1.483	0.584	9	Medium
Price fluctuations affecting project costs	64	2.73	1.250	0.546	10	Very low
Dust and air quality issues	64	2.66	1.405	0.532	11	Very low
Inadequate safety protocols	64	2.61	1.443	0.522	12	Very low

The classification results show that most of the identified risks fall withing the very high-risk category, with the top five risks exceeding RII of 0.620. These include workers' fatigue, limited access to emergency vehicles, obstruction of pedestrian pathways, delayed materials deliveries and stakeholder conflict. Two risks were classified as high, two as medium and three as very low, while no risk fell within the low category. This distribution indicates a concentration of higher-severity risks within the study context.

4.2 Impact analysis

Respondents evaluated the severity of construction impacts across nine dimensions using percentage-based ratings. The results indicate that the most significant impacts were occupational safety hazards to construction workers (59%), decline in property values (58%), disruption of business activities (56%), environmental pollution (55%), social disruption (51%), and increased project costs (51%). These findings, illustrated in Figure 2, highlight the multidimensional consequences of construction risks in confined heritage urban environments, affecting not only site operations but also the surrounding community and local economy.

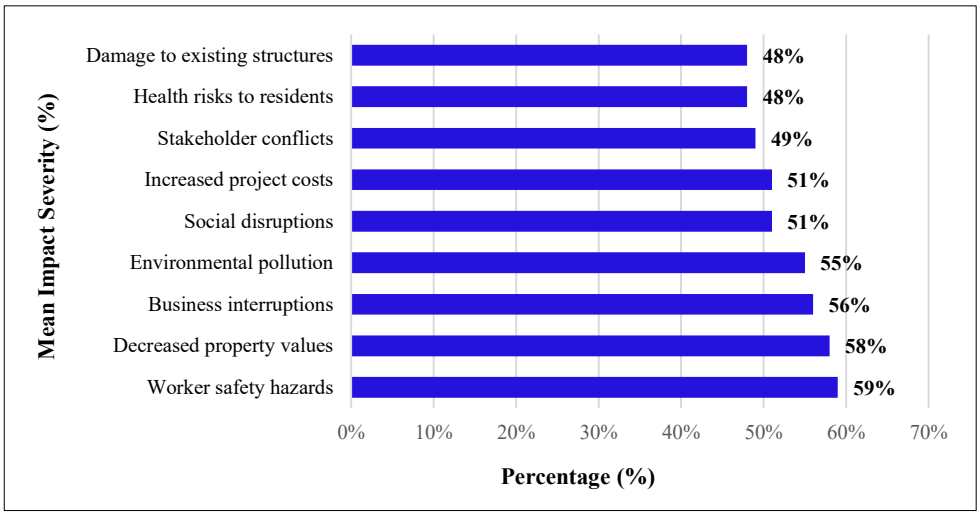


Figure 2: Impacts of construction risks in Stone Town, a confined urban area

4.3 Mitigation measures and institutional practices

Respondents assessed existing mitigation measures using 5 Likert scale to determine their level of implementation. The analysis of risk mitigation measures in confined heritage urban areas like Stone Town showed varying levels of implementation across different strategies. Consistent site inspections and risk assessments were constantly practiced with a mean of 3.47, indicating a proactive approach to hazard management. Measures such as noise and dust control, early stakeholder engagement, and strategic scheduling were moderately and inconsistently implemented, with some practices either irregular or insufficiently applied in construction sites, showing efforts to address environmental, social, and logistical challenges. However, critical areas like emergency response planning (mean = 2.80), regular safety training for workers (mean = 2.93), coordination with local authorities, and conflict resolution frameworks (both with a mean of 2.69) were rated poorly, highlighting gaps in institutional coordination and preparedness as these measures require institutional support, planning and investment which are limited in confined, heritage urban contexts. These results underscore the need to strengthen safety planning, formal communication mechanisms, and collaborative governance to effectively manage risks in such spatial environments. Detailed mitigation measures are provided in Table 4.1.

Table 4.2: Risk mitigation measures

Mitigation measures	Mean (M)	Std. Dev.	Interpretation	Rank
Site inspections & risk review	3.47	1.368	Well-practiced	1
Noise and dust control measures	3.14	1.409	Moderately implemented	2
Early stakeholder engagement	3.13	1.316	Moderately practiced	3
Optimized scheduling reducing delays	3.12	1.246	Moderately implemented	4
Workers' safety training	2.93	1.396	Needs improvement	5

Mitigation measures	Mean (M)	Std. Dev.	Interpretation	Rank
Emergency response planning	2.80	1.524	Needs improvement	6
Coordination with local authorities	2.69	1.225	Weak coordination noted	7
Conflict resolution framework	2.69	1.416	Inconsistently applied	8

4.4 Qualitative findings

Five dominant themes emerged from qualitative data, capturing patterns in construction risks, their impact on stakeholders and mitigation practices in Stone Town.

4.4.1 Spatial confinement as the root condition

Across interviews, spatial restriction was consistently identified as the structural condition shaping most operational risks. Respondents described narrow streets, limited turning radius, absence of loading zones, and minimal on-site storage space as everyday constraints. Contractors explained that large vehicles cannot access many streets, necessitating manual transport. Materials are often offloaded at peripheral access points and transported via handcarts or manually carried to the site. Trend identified: logistical inefficiency is not accidental; it is structurally embedded in the urban morphology. This theme directly explains the high RII ranking of delayed material delivery and insufficient storage space.

4.4.2 Worker fatigue as a systemic operational risk

Fatigue was described as cumulative and routine risk, rather than happening in episodes. Workers often perform prolonged physical transport of materials under confined conditions. Respondents indicated that manual lifting increases as access to mechanical equipment decreases, sometimes limited through impassable alleys or routes, extended working hours are sometimes required to compensate for delivery delays and physical strain, reducing alertness, increasing the likelihood of minor accidents (Figure 3). One contractor described fatigue as “part of working in Stone Town,” suggesting normalisation of risk exposure. An identified trend showed that fatigue is regularised within confined heritage construction sites and may be underreported in formal safety documentation. This situation corroborates the qualitative reinforcement for its top RII ranking.



Figure 3: Manual handcard transport through narrow streets

4.4.3 Emergency access and public interface vulnerability

Interviewees frequently raised concerns about limited emergency response access due to narrow alleys that restrict ambulance and fire service movement. In high-density residential areas, this risk extends to the surrounding community. Construction sites often directly intersect with pedestrian pathways, with temporary hoarding reducing walkway width, causing congestion and community complaints. These findings highlight a trend of construction risks extending beyond site boundaries, creating shared vulnerability between contractors and the public. This theme supports the RII ranking of pedestrian obstruction and the severity of social disruption and business interruption (Figure 4).



Figure 4: Pedestrian obstruction due to temporary hoarding

4.4.4 Institutional coordination and regulatory friction

A recurring issue is coordination with the Stone Town Conservation and Development Authority (STCDA). While this Authority plays a critical role in protecting the heritage integrity of Stone Town. The Authority must review, approve, and monitor numerous construction and renovation projects in a sensitive heritage environment, leading to permit approval delays, especially for projects requiring conservation assessments. Communication between contractors and STCDA is often reactive rather than proactive, resulting in misunderstandings and compliance disputes. Respondents noted challenges with construction scheduling conflicting with regulatory review timelines, lack of proactive communication, and limited conflict resolution mechanisms. Institutional risk from procedural friction, not technical incapacity, contributes to stakeholder conflict and inadequate coordination mechanisms.

4.4.5 Spillover restoration costs and heritage sensitivity

While structural damage to neighbouring buildings was not the top quantitative risk, qualitative feedback highlighted significant nuances. Contractors reported incidents of surface damage, minor cracks due to vibrations, and the need to repair heritage façades at their expense. Even minor damage can lead to costly restoration requirements in heritage areas, indicating that financial risks are heightened by proximity sensitivity and regulatory compliance. This underscores the limitations of relying solely on quantitative rankings to assess financial exposure in heritage settings.

4.4.6 Environmental and social sensitivity



Figure 5: Polyethylene sheeting for dust containment on-site

Interviews further showed cases of residents often complaining about dust and noise during construction operations. To address this, measures such as using dust containment sheeting, communicating informally with neighbours to coordinate demolition timing, and occasionally relocating vulnerable residents were mentioned to be practices. They positively helped residents to adapt with the risks associated with living in close proximity to construction sites. Construction supervisors used polyethylene sheeting for dust and falling debris control. However, these offered protection only to limited extents, as they get torn and not regularly replaced. In some cases, skills for properly fixing the sheets to steel scaffolding was limited among construction workers. These actions support the moderate ratings of environmental control measures in the survey, showing that risk mitigation measures are present but not consistently integrated.

5. Discussion

The study findings indicate that construction risks in confined heritage urban areas extend beyond project level uncertainties. As corroborated by Acebes et al. (2024) who critiques widely used CRM tools such as probability-impact matrices noting their limitation in capturing complex and interacting tools, the risks in confined heritage sites are shaped by spatial constraints, routine exposure, stakeholders' interactions, institutional dynamics, and associated financial implications. Drawing on patterns identified in both quantitative and qualitative results, these findings are analysed through spatial structure, risk normalisation, governance implication, public interface and shared vulnerability, and financial externalities.

5.1 Spatial morphology as a structural risk generator

Spatial confinement is identified as the primary factor leading to various operational risks in construction projects. Factors such as narrow streets, limited vehicular access, and minimal on-site materials storage contribute to material-delivery delays, reliance on manual transport, pedestrian obstruction, and restricted emergency access. While traditional CRM frameworks focus on cost, schedule, and contractual risks (Zou, Zhang, & Wang, 2007; PMI 2021), they often overlook site access constraints. The case study of Stone Town highlights the significance of spatial morphology in risk management, showing that the physical layout of historic urban cores can limit mechanisation and emergency manoeuvrability, leading to safety risks. Unlike modern urban areas where access routes can be adjusted, heritage environments have conservation-protected street networks, making spatial confinement a permanent operational challenge.

5.2 Risk normalisation and occupational vulnerability

A significant qualitative insight concerns the normalisation of worker fatigue. Respondents described manual material transport and prolonged physical strain as routine. This normalisation of hazard exposure is critical. Lingard and Rowlinson (2005) note that confined work environments increase accident probability due to physical strain and reduced alertness. However, the present findings indicate that fatigue is culturally internalised as "part of working in Stone Town," suggesting that occupational risk may be under-recognised in formal safety reporting. This pattern illustrates how spatial constraint translates into behavioral adaptation. Rather than perceiving fatigue as an exceptional hazard, it becomes embedded within daily practice. Such normalisation may obscure cumulative safety risks and weaken proactive mitigation. Thus, worker fatigue in confined heritage environments should be conceptualised not only as a physical risk but also as an institutional neglected dimension within site-level safety management.

5.3 Public interface and shared vulnerability

The study establishes that construction risks in confined heritage areas extend beyond the construction site. Pedestrian obstruction and restricted emergency access reveal a shared vulnerability between construction operations and surrounding community. Oke et al. (2016) argue that urban construction disrupts public mobility; however, in Stone Town's dense pedestrian economy, such disruption negatively affects business continuity and tourism-dependent livelihoods. The high ranking of business interruptions and environmental pollution underscores that construction risks in heritage cores are socially exposed. Dust and noise are not confined to site boundaries but permeate adjacent residences and commercial premises. Tam et al. (2004) emphasises the challenges of environmental control in dense urban construction; suggesting that mitigation measures, although present, remain inconsistently formalised. Hence, confined heritage construction must be understood as territorially embedded and socially interactive rather than site contained.

5.4 Institutional friction as a secondary risk amplifier

Findings indicate that coordination gaps between contractors and heritage authorities constitute a significant, though not always statistically dominant, risk factor. Permit review delays, compliance ambiguities, and absence of structured dispute resolution mechanisms create procedural friction within the construction process. Roders and van Oers (2011) highlight governance complexity in heritage cities, noting the tension between conservation mandates and development pressures. In Stone Town, this tension manifests as reactive coordination rather than proactive collaboration. The relatively low rating of formal coordination mechanisms suggests that institutional integration remains underdeveloped. This indicates that risk in confined heritage construction is not solely operational, but governance mediated. Weak communication channels amplify delays, escalate conflict, and increase uncertainty among construction and non-construction stakeholders. Institutional risk should be conceptualised as a secondary amplifier that intensifies primary spatial and operational constraints.

5.5 Financial externalities and heritage sensitivity

Although structural damage to adjacent buildings ranked moderately in the quantitative analysis, qualitative narratives revealed significant financial implications associated with minor surface damage and restoration obligations. Because historic buildings are weak and delicate, adjacent construction activities at their close proximity can cause damage, increasing sensitivity to even minimal construction impact, unplanned restoration costs, increased labour and logistics costs, cost overruns due to inefficiencies and constraints, and, contractor burden not included in contract. Wong et al. (2011) emphasize that proximity to heritage buildings elevates vulnerability to vibration and settlement. Hence, it is importance of re-evaluating risk categories in heritage contexts to account for the financial risks induced by adjacency, which are often overlooked in traditional CRM taxonomies.

Advancing construction risk in confined heritage contexts

These findings demonstrate that construction risks in confined heritage urban areas are shaped by spatial constraints, governance complexity, public interaction and heritage sensitivity. The Stone Town case highlights the need to adapt conventional CRM frameworks to better address context-specific operational and institutional risks in dense historic urban environments.

6. Conclusion and policy recommendations

Conclusion

This study examined construction related risks in confined heritage urban areas, focusing on Stone Town, Zanzibar. Drawing on both quantitative and qualitative evidence, the findings indicate that unique risks arise due to spatial constrains and historical sensitivity. These findings show that spatial confinement, heritage sensitivity and weak institutional coordination intensify operational, safety and logistical risks in Stone Town. Safety and risk issues include worker fatigue, restricted

emergency access, pedestrian obstruction, delayed material delivery, business disruption, environmental pollution and increased project costs. While moderate measures like regular site inspections and basic environmental controls were practices, both datasets show that institutional coordination and formal dispute resolution mechanisms are weak, which leads to regulatory friction and project delays. The study shows that traditional ways of managing risks do not work in this case. They need to be adjusted to deal with the social, spatial and institutional challenges of building in historic, high density urban environments.

Contributions to knowledge and practice

This study expands construction risk management literature by showing how spatial constraints and heritage considerations impact traditional risk categories. It emphasizes location-specific risks that are not adequately addressed in standard frameworks. The study suggests tailored mitigation strategies such as improved coordination, heritage-aware safety training, and flexible logistics planning, connecting construction management practices with urban heritage preservation.

Policy recommendations

To improve construction risk management in heritage urban areas, formalized coordination between contractors and heritage authorities is essential to streamline permit processing and reduce delays. Urban logistics planning, including just-in-time material delivery systems, should be integrated into construction approvals to address spatial constraints and reduce worker fatigue. Mandatory heritage-sensitive safety training and project-specific emergency response planning are crucial to mitigate safety risks. Enforcing standardized environmental control protocols and structured dispute resolution frameworks is necessary. Adopting real-time monitoring systems can enhance compliance, transparency, and accountability.

Limitations of the study

The bounded case study design limits statistical generalization to a wider population; however, the findings support analytical generalization to similar confined heritage urban environments that share comparable spatial and governance characteristics.

Recommendations for future research

Future research should undertake comparative case study across multiple confined heritage urban context to enhance transferability and identify cross-contextual risk patterns. Longitudinal assessment of mitigation effectiveness would strengthen evidence-based policy development. Further investigation into digital monitoring, integrated logistics planning, governance frameworks and quantitative modelling of cumulative risk exposure in heritage urban cores is recommended.

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Factors Influencing the Funding of Sustainable Construction Projects in Tanzania

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Abstract: Access to adequate finance is one of the principal barriers to scaling sustainable construction in Tanzania. This paper focuses on identifying the factors that affect funding of sustainable construction projects, drawing on a qualitative, exploratory study of key stakeholders in Tanzania and comparative insights from South Africa. Semi-structured interviews were conducted with 20 respondents, i.e., funders, implementing agents, and industry experts, supplemented by an extensive review of academic and policy literature on sustainable construction finance. The findings show that funding for sustainable construction is constrained by intertwined financial, regulatory, institutional, and knowledge-related factors. Financial constraints include high upfront costs, strict collateral requirements, limited long-term instruments, and risk-averse lending practices that prioritise short-term profitability over lifecycle benefits. Regulatory and policy misalignment further weakens incentives, as environmental compliance is not linked to preferential finance, tax benefits, or streamlined approval processes, and there is no dedicated green finance taxonomy to guide market actors. Institutional barriers encompass weak public financial management systems, fragmented governance, and bureaucratic inefficiencies that delay project approvals and increase transaction costs. Knowledge and technical capacity gaps among lenders, developers, and regulators reinforce perceptions that sustainable construction is costly and risky, while the absence of standardised ESG metrics hampers project appraisal and the development of tailored green products. The paper synthesises these constraints into four overarching categories and presents a table mapping each factor to its implications for funding decisions. It concludes that addressing these factors requires an integrated response combining policy reform, risk-sharing mechanisms, capacity-building, and improved coordination across the construction and finance sectors in Tanzania to unlock finance at the scale required for a sustainable and resilient built environment.

1. Introduction

Sustainable construction is increasingly recognised as essential for achieving national development, climate, and sustainability goals, particularly in rapidly urbanizing and infrastructure-deficient countries. In Tanzania, the construction sector is a major contributor to GDP and a key driver of infrastructure provision, employment, and spatial transformation, yet its current financing architecture constrains the uptake of sustainable practices (Ikingura et al., 2025; Kikwasi & Escalante, 2018). Traditional financing models centered on government budgets,

standard commercial bank loans, and donor aid were not designed with environmental, social, and governance (ESG) considerations in mind and often fail to accommodate the specific risk–return profiles of sustainable projects (Ngowi et al., 2006; Kikwasi & Escalante, 2020).

This paper focuses on identifying the factors affecting the funding of sustainable construction projects in Tanzania, as funding constraints have been identified as a critical bottleneck to the implementation of sustainable building practices. This focus is motivated by the observation that even when technical solutions and sustainability standards are available, projects frequently stall or are "de-greened" during financial negotiation due to perceived risks, cost premiums, and institutional constraints (Ding, 2008; Shen et al., 2010). Funding decisions thus act as a critical bottleneck that either enables or blocks sustainable construction on the ground.

By unpacking the financial, regulatory, institutional, and knowledge-related factors that influence funding, this paper aims to provide a sharper diagnosis of the funding landscape for sustainable construction in Tanzania. The findings are intended to inform policymakers, financial institutions, and industry practitioners seeking to remove barriers and design more enabling funding mechanisms for sustainable construction. It also draws selectively on South African experience where sustainable finance and green building are more institutionalised to illustrate how different configurations of policies and institutions can shape funding outcomes (Shan et al., 2017). The analysis is intended to inform policymakers, financiers, and industry practitioners seeking to remove barriers and design more enabling funding mechanisms for sustainable construction.

2. Problem Statement

Despite growing policy recognition of sustainability in the built environment, sustainable construction projects in Tanzania continue to face persistent financing barriers. Financial institutions often perceive green projects as riskier and more expensive due to higher upfront costs, uncertain returns, and limited local performance data. The absence of clear green finance policies limited technical capacity to appraise sustainability benefits, and fragmented institutional frameworks further constrain the flow of finance toward sustainable construction. As a result, conventional construction approaches continue to dominate, undermining national climate commitments and long-term resource efficiency objectives.

This paper, therefore, examines the specific factors that influence how sustainable construction projects are funded in Tanzania, intending to identify systemic barriers and inform policy and industry responses.

3. Literature Review

The financing of Sustainable Construction Projects (SCPs) in Tanzania is influenced by a range of structural, institutional, and market-related factors(Kavishe et al., 2023). Despite growing recognition of sustainable construction as essential for long-term environmental and economic resilience, access to finance remains a persistent challenge due to high costs, regulatory gaps, and limited financial innovation(Tahmasseby et al.,2025).

3.1. High Upfront Costs and Financial Risk

A key factor affecting the funding of SCPs is the higher initial capital required for green materials, energy-efficient technologies, and environmental systems(Din & Ishak,2025). These costs increase the perceived financial risk of projects and discourage lenders and investors who prioritize short-term returns over lifecycle savings(Emodi et al.,2022).

Financial institutions in Tanzania typically evaluate projects based on immediate profitability and collateral rather than long-term sustainability benefits, resulting in underfunding or rejection of otherwise viable, sustainable projects (Crona et al., 2025).

3.2. Limited Availability of Long-Term Financing

Sustainable construction projects often require financing structures with extended repayment periods(Chen et al., 2023). Yet, most Tanzanian financial institutions offer short-term credit facilities incompatible with these long payback cycles(Debrah et al., 2021), resulting in a mismatch between project needs and available financial instruments that significantly constrains funding accessibility. This fundamental incongruity necessitates the development of specialised financial products, such as green bonds or sustainability-linked loans, that align with the investment horizon of SCPs.

3.3. Regulatory and Policy Misalignment

The literature underscores a misalignment between environmental regulations and financial mechanisms in Tanzania (Ikingura et al., 2025). While building codes and environmental standards are in place, they lack integrated financial incentives (Shame et al., 2024) such as tax rebates, subsidies, or concessional lending to promote sustainable construction (Debrah et al., 2021). As a result, developers receive no economic benefits for surpassing minimum compliance thresholds, and the absence of enabling policy tools undermines private sector involvement while reducing the appeal of sustainable construction investments(Voland et al., 2022). This policy shortfall fosters an uneven competitive environment, where conventional, less sustainable projects encounter fewer financial barriers, thereby disadvantaging SCPs.

3.4. Institutional Capacity and Knowledge Gaps

A further critical barrier stems from the inadequate technical expertise and capacity within financial institutions, developers, and regulatory authorities (Muhammad et al., 2023). Numerous stakeholders exhibit limited comprehension of lifecycle cost advantages and sustainability performance indicators, which hinders accurate appraisals of the financial feasibility of sustainable projects (Dikou, 2023).

This knowledge gap contributes to conservative lending practices and limits the development of innovative financing models tailored to sustainable construction.

3.5. Risk-Averse Financial Environment

Traditional and risk-averse lending practices, heavily reliant on collateral and short-term financial indicators, characterize the Tanzanian financial sector (Crona et al., 2025; Rugaimukamu et al., 2023). These conservative approaches prioritize immediate profitability and proven collateral over long-term sustainability benefits, discouraging investments in innovative or unfamiliar construction methods, including sustainable building practices (Emodi et al., 2022). This aversion to perceived higher risks stemming from uncertainties in greenfield-like projects and limited capacity to assess environmental risks manifests as stringent collateral demands, elevated interest rates, and reluctance to finance SCPs without short-term returns, thereby exacerbating financing challenges (Rugaimukamu et al., 2023; Voland et al., 2022).

3.6. Bureaucratic and Market Constraints

Funding challenges are further exacerbated by bureaucratic delays, complex approval processes, and a broader funding gap within the construction industry (Ivanova, 2022). Limited public resources, dependence on donor funding, and high borrowing rates also reduce the availability of capital for sustainable projects (Voland et al., 2022). These systemic constraints collectively create an environment where the incremental costs associated with sustainable practices are perceived as prohibitive, hindering their widespread adoption.

3.7. Synthesis of Literature

The literature demonstrates that the funding of Sustainable Construction Projects (SCPs) in Tanzania is shaped by a combination of financial, institutional, and regulatory constraints that interact to limit investment in green development. High upfront capital costs associated with sustainable materials and technologies, coupled with limited availability of long-term financing, reduce the financial attractiveness of these projects to both lenders and developers. At the same time, the absence of strong policy incentives and supportive regulatory mechanisms further weakens the business case for sustainable construction, as developers receive minimal economic benefits for exceeding basic environmental compliance requirements.

These financial and policy challenges are compounded by institutional capacity gaps and risk-averse lending practices within the Tanzanian financial sector. Limited technical knowledge among financial institutions and project stakeholders constrains the ability to properly assess lifecycle benefits and sustainability-related risks, leading to conservative investment decisions and reduced development of tailored green financing instruments. As a result, sustainable construction remains underfunded despite its long-term environmental and economic benefits, highlighting the need for integrated policy reform, financial innovation, and capacity building to improve access to funding and accelerate the adoption of sustainable building practices.

4. Research Question

This study is operationalised through the following sub-research question:

- *What financial, regulatory, institutional, and capacity-related factors constrain access to funding for sustainable construction projects in Tanzania?*

Rather than examining all aspects of finance models, the paper is deliberately diagnostic, concentrating on the constraints and conditions that shape access to and terms of funding. The analysis of these factors forms the basis for targeted policy and practice recommendations.

5. Methodology

5.1. Research design and approach

A qualitative, exploratory research design was adopted to capture context-specific dynamics and the perspectives of actors directly involved in funding and implementing construction projects. A qualitative approach is appropriate because financing decisions are shaped by perceptions of risk, institutional habits, regulatory interpretations, and informal practices, which are not easily captured by purely quantitative indicators (Creswell, 2014).

The exploratory character of the design is justified by the relative novelty of sustainable construction finance in Tanzania and the limited existing empirical work on this topic. Rather than testing a fixed hypothesis, the study sought to generate and refine an understanding of the multiple factors that constrain funding.

5.2. Sampling strategy and respondents

Purposive sampling was used to identify and recruit respondents with direct experience in financing or delivering construction projects that involve, or could involve, sustainable features. The final sample comprised 20 respondents:

5.2.1. Tanzania (15):

- funders from commercial banks, a national development bank, a micro-finance institution, and an investment firm.
- implementing agents, including private contractors, developers, an architect, and public works and municipal PPP officials.
- industry experts from universities, NEMC, and the Tanzania Green Building Council.

5.2.2. South Africa (5):

- funders from a development finance institution and a commercial bank.
- implementing agents from a university-linked housing program and a municipal infrastructure department.
- 1 expert from academia and a sustainability consultancy.

Respondents' experience ranged from 10 to over 20 years, and they operated across infrastructure, housing, commercial, and mixed-use projects. This diversity ensured that the study captured a wide range of views on funding practices and constraints.

5.3. Data collection

Semi-structured interviews were conducted using an interview guide adapted to each stakeholder group. Core questions covered:

- Current financing practices and decision criteria.
- Perceptions of sustainable construction and associated risks and costs.
- Regulatory and policy influences on funding decisions.
- Institutional challenges and bureaucratic processes.
- Capacity and knowledge related to sustainable construction and finance.

Interviews lasted between 30 and 60 minutes and were conducted in person or online, depending on location and availability.

A literature review was conducted in parallel, drawing on academic articles, policy reports, and international guidelines relating to sustainable construction finance, infrastructure funding in developing countries, green bonds, blended finance, and ESG integration (Shan et al., 2017; UNECA, 2020; World Bank, 2015). This provided a conceptual and comparative backdrop for interpreting empirical findings. The thematic categories derived from the analysis correspond directly to the study's research question, which sought to identify financial, regulatory, institutional, and knowledge-related factors affecting access to funding.

5.4. Data analysis

Interview data were analysed using qualitative content and thematic analysis. Transcripts and notes were read multiple times to identify recurring issues and patterns, which were coded into initial categories such as "high upfront costs," "collateral requirements," "policy incentives," "bureaucratic delays," and "capacity gaps." These codes were then grouped into four overarching factor categories:

5.4.1. Financial and market factors.
5.4.2. Regulatory and policy factors.
5.4.3. Institutional and governance factors.
5.4.4. Knowledge and technical capacity factors.

Comparative analysis between Tanzanian and South African respondents allowed for the identification of factors that appear context-specific versus more general to emerging markets.

5.5. Ethical considerations

Ethical principles of voluntary participation, informed consent, and confidentiality were observed. Respondents were informed of the study's purpose and the intended use of data. Names and organisational identifiers are anonymised through codes (e.g., F1, IA3, IE2). Data were stored securely and used only for research purposes.

6. Findings and Discussion: Factors Affecting Funding

Among the four delineated categories, financial and market-related factors were the most recurrently cited by respondents, who invariably identified them as the foremost impediment to funding determinations. Regulatory and institutional factors were routinely characterised as ancillary impediments that intensified perceptions of financial risk.

The analysis shows that funding of sustainable construction in Tanzania is influenced by a constellation of factors across four broad categories. Table 1 consolidates these factors and indicates how each affects funding decisions, followed by a more detailed narrative discussion.

Table 1: Key factors affecting funding of sustainable construction projects in Tanzania

Factor Category	Specific Factor	How it affects funding Decisions
Financial and Market Factors	High upfront costs of green features	Increases perceived project risk and discourages banks from financing sustainable components.
	Strict collateral requirements and short loan tenors	Favors established borrowers and conventional designs; penalises innovative green projects.
	Risk-averse lending and focus on short-term ROI	Leads to exclusion or downsizing of sustainability measures with longer payback periods.
Regulatory and policy factors	Lack of green finance policy/taxonomy	Creates uncertainty about what qualifies as "sustainable," limiting green product development.
	Environmental compliance not linked to incentives.	Developers gain no financial advantage from building beyond minimum standards.
Institutional and governance factors	Weak public financial management and limited fiscal space	Constrains government co-financing and risk-sharing capacity for green projects.
	Fragmented institutional responsibilities	Poor coordination between finance, works, environment, and local government agencies.

	Bureaucratic inefficiencies and approval delays	Increase transaction costs and undermine the bankability of time-sensitive projects.
Knowledge and technical capacity	Limited awareness of lifecycle benefits among lenders and developers	Sustainability is seen as a cost rather than a value-enhancing investment, reducing demand for green loans.
	Lack of skills in structuring/appraising sustainable finance instruments	Banks struggle to design and evaluate green products (e.g., green bonds, blended facilities).
	Low familiarity with certification and ESG metrics	Absence of standardised criteria for assessing and pricing sustainability performance.

Table 1 synthesises the factors identified across interviews and literature. Financial factors were referenced by 17 of the 20 respondents, compared with 13 for regulatory issues, 11 for institutional challenges, and 9 for capacity constraints.

6.1. Financial and market factors

Financial and market factors are at the core of the funding challenge. First, sustainable construction projects often involve higher upfront capital costs compared to conventional alternatives. Additional investments are required for technologies and design measures such as high-performance building envelopes, renewable energy systems, and water-efficient fixtures (Nasereddin & Price, 2021). Although these features can reduce operating costs over the project lifecycle, such benefits are not always visible or quantifiable at the appraisal stage in Tanzanian conditions.

Local banks and financial institutions typically evaluate projects using traditional metrics emphasizing immediate cash flows, security, and payback periods. In the absence of robust data on lifecycle performance and local benchmarks, higher initial costs are interpreted as higher risk rather than as investments that may improve long-term solvency and asset quality (Annamalai & Hari, 2016). Consequently, lenders are reluctant to finance the incremental costs associated with sustainable features and may insist on design changes that revert to cheaper conventional options.

Second, collateral requirements and loan structures exacerbate the challenge. Tanzanian banks commonly require tangible collateral, often land and existing buildings, with conservative loan-to-value ratios (Okereke et al., 2022). Many contractors and developers, especially newer or smaller firms, cannot provide sufficient collateral, limiting their eligibility for loans and particularly for larger, more innovative projects that incorporate sustainability elements. Short loan tenors, aligned with banks' preference for rapid repayment, further undermine the financial case for sustainability measures whose benefits unfold over longer time horizons (e.g., 10–20 years) (Crona et al., 2025).

Third, a risk-averse lending culture and a focus on short-term returns result in a narrow risk appetite. Banks prefer standard project types and established clients, and they often apply uniform risk premiums to construction projects rather than differentiating based on long-term resilience or efficiency (Shan et al., 2017). This leads to systematic under-funding of sustainable construction, even when such projects may present lower long-term default risks due to operational savings and reputational advantages.

6.2. Regulatory and policy factors

Regulatory and policy frameworks shape the incentive environment for both financiers and developers. In Tanzania, environmental regulations and impact assessment requirements are in place and provide a basic framework for mitigating environmental harm; however, these regulations primarily operate as compliance obligations rather than as part of a broader incentive system for sustainability (Phoya, 2018).

A fundamental issue identified by respondents is the absence of a dedicated national green finance policy and sustainable finance taxonomy. Without shared definitions of what counts as "green" or "sustainable," financial institutions lack guidance to develop targeted products, and investors cannot easily assess whether their funds align with ESG objectives (Press and Information Team of the Delegation to Tanzania, 2023). In contrast, South Africa's green finance taxonomy provides clear classifications, which have facilitated the growth of green loans and bonds and improved investor confidence (Guo et al., 2022).

Moreover, environmental compliance is not linked to financial or procedural incentives. Developers who go beyond minimum standards by, for example, targeting green building certifications do not typically receive preferential interest rates, tax relief, or accelerated approvals (Masoud, 2023). This disconnect sends a weak signal to the market: investing in higher-performance sustainable design is seen as a cost that must be absorbed by the project rather than as an investment rewarded by the regulatory system.

Finally, the current fiscal framework provides limited tools to offset the perceived cost premiums associated with sustainable construction. There are few tax credits, soft-loan programs, or guarantee schemes specifically geared toward green projects, unlike in some developed and emerging economies where such instruments have been used to stimulate market uptake (Nicholls, 2021; World Bank, 2015).

6.3. Institutional and governance factors

Institutional and governance arrangements strongly influence how policy rules are implemented and how financial flows are coordinated. First, weaknesses in public financial management and limited fiscal space constrain the government's capacity to support sustainable projects through co-financing, subsidies, or guarantees (Yanda et al., 2013; International Monetary Fund, 2023). With competing social and infrastructure priorities, allocating scarce public resources to de-risk private sector sustainable investments is challenging, even when such investments may have long-term benefits.

Second, institutional fragmentation limits coordination. Responsibilities for construction, finance, environment, and local development are distributed across several ministries and agencies, often with overlapping mandates and limited communication (Kikwasi & Escalante, 2020). For example, environmental regulators may set sustainability conditions without parallel adjustments in procurement rules or banking regulations, resulting in a situation where developers must meet environmental obligations without corresponding changes in how lenders assess or price projects.

Third, bureaucratic inefficiencies and lengthy approval processes emerged as a recurring complaint among respondents. Developers described navigating multiple approvals for environmental impact assessments, permits, and financing, often facing delays when projects feature newer technologies or design innovations that regulators are unfamiliar with (Sambasivan et al., 2017). For financiers, these delays increase time and transaction costs and introduce uncertainty, particularly where loan disbursement is contingent on regulatory milestones. Some banks, therefore, perceive sustainable projects as administratively burdensome and prefer simpler, conventional projects.

Together, these institutional and governance issues raise the cost and complexity of doing sustainable construction business and disincentivize both developers and financiers from pursuing such projects.

6.4. Knowledge and technical capacity factors

Knowledge and technical capacity factors operate on both the construction and finance sides. On the construction side, many contractors, consultants, and public officials are still unfamiliar with the full range of sustainable construction options, their technical requirements, and their cost–benefit profiles (Phoya, 2018; Masoud, 2023). This lack of familiarity reinforces the perception that sustainable construction is inherently expensive, complex, and risky to implement, especially under tight timelines and budgets.

On the finance side, banks and other funders often lack the skills and tools to assess the risks and benefits of sustainable projects, beyond conventional financial ratios. There is limited experience with structuring and pricing green loans, evaluating projects using lifecycle cost analysis, or integrating ESG considerations into credit risk frameworks (Shan et al., 2017; Singhania et al., 2023). In the absence of internal capacity and external benchmarks, financial institutions default to standard lending templates that overlook sustainability performance, thereby systematically undervaluing green projects (Yu et al., 2023).

Furthermore, the limited adoption of green building certification schemes in Tanzania means that there are few standardised indicators of performance that lenders can rely on (World Green Building Council, 2013). By contrast, in South Africa, metrics from tools like Green Star and EDGE are increasingly used to demonstrate and verify sustainability outcomes, facilitating financing discussions (Shan et al., 2017). The lack of such metrics in Tanzania hinders both the recognition and the monetization of sustainability benefits.

7. Policy and Practice Recommendations

This study demonstrates that financing sustainable construction projects in Tanzania is impeded by interconnected financial, regulatory, institutional, and capacity-related barriers. These elements elevate the perceived risks of sustainable initiatives, undermine incentives for developers and financiers, and curtail the supply of financial products customised for sustainable construction. Mitigating these challenges thus demands targeted strategies that directly tackle the identified barriers. The ensuing recommendations are drawn from the study's empirical insights.

7.1. Introduce targeted financial incentives for sustainable projects.

The results indicate that elevated initial costs, rigorous collateral stipulations, and conservative lending strategies deter financial institutions from supporting sustainable construction elements. These fiscal barriers render green projects less viable in the short term, despite their substantial long-term operational advantages.

To overcome this impediment, governments and regulatory authorities should implement tailored financial incentives for verified sustainable construction initiatives. These could encompass interest rate subsidies, tax credits, lowered permitting fees, and partial credit guarantees to mitigate lenders' risk exposure. By reducing the apparent cost premium of sustainable building, such policies would incentivize developers and financiers alike to integrate eco-friendly design elements into their projects.

7.2. Develop a national green finance policy and taxonomy.

The research further reveals regulatory and policy discrepancies, notably the dearth of a national green finance framework and a precise taxonomy delineating sustainable investments. This ambiguity fosters uncertainty among financial institutions and investors, thereby constraining the innovation of green financial products and undermining investor confidence.

Establishing a national green finance policy, bolstered by a sustainable finance taxonomy, would furnish explicit definitions and eligibility standards for sustainable construction initiatives. This architecture would empower banks and investors to pinpoint compliant projects, spur the creation of instruments such as green bonds and sustainability-linked loans, and synchronize Tanzania's financial sector with evolving international environmental, social, and governance benchmarks.

7.3. Strengthen public risk-sharing and co-financing mechanisms.

Inadequate public financial management capacity and constrained fiscal space represent institutional barriers that impede the government's ability to fund sustainable construction initiatives. In the absence of risk-sharing mechanisms, private lenders hesitate to support innovative projects featuring unproven performance outcomes.

To mitigate this issue, the government could implement risk-sharing and blended finance instruments, including a specialized sustainable construction financing facility integrated into existing development funds. Tools such as first-loss equity, loan guarantees, and co-financing partnerships with development finance institutions would de-risk initial projects and promote private sector involvement in sustainable construction.

7.4. Streamline and digitize approval processes for sustainable projects.

The analysis further underscores bureaucratic inefficiencies and protracted approval processes, which elevate transaction costs and engender uncertainty for developers and lenders. Such delays may deter financiers from endorsing projects incorporating novel or untested technologies.

Regulatory agencies should accordingly expedite and digitalize approval protocols for sustainable construction initiatives. Deploying unified digital platforms or single-window permitting systems would mitigate administrative delays and bolster transparency. Furthermore, expedited approval pathways could be established for projects satisfying predefined sustainability benchmarks, thereby motivating developers to pursue superior environmental performance standards.

7.5. Build capacity in financial institutions and the construction sector.

The research identifies substantial deficiencies in knowledge and technical capabilities among lenders, developers, and regulators. Insufficient comprehension of lifecycle costing, sustainability performance indicators, and green finance mechanisms fosters risk-averse lending strategies and subdued demand for sustainable construction practices.

To overcome this impediment, universities, professional associations, and regulatory authorities should partner to design capacity-development initiatives targeting sustainable construction financing. These programs ought to encompass lifecycle cost evaluation, ESG risk analysis, green project assessment, and the formulation of sustainable financial products. Enhancing technical

proficiency across financial and construction sectors would bolster stakeholders' proficiency in appraising the enduring benefits of sustainable investments.

7.6. Promote adoption of certification and ESG metrics.

The findings also reveal a key challenge: the restricted adoption of standardised sustainability metrics in Tanzania. Absent established benchmarks, financial institutions encounter difficulties in assessing the environmental and financial viability of sustainable projects.

Promoting the implementation of green building certification schemes alongside ESG performance indicators would furnish reliable, quantifiable sustainability benchmarks. Embedding these metrics within public procurement protocols and financial due diligence frameworks would standardize project evaluations, augment transparency, and enable the creation of financing instruments aligned with sustainability outcomes.

7.7. Enhance inter-agency coordination on sustainable construction finance.

Moreover, the research underscores institutional fragmentation, characterised by the dispersal of responsibilities pertaining to construction, finance, and environmental regulation across diverse agencies marked by inadequate coordination. This fragmentation undermines policy coherence and obfuscates the financing landscape for sustainable construction.

The establishment of an inter-ministerial coordination mechanism, incorporating ministries overseeing finance, infrastructure, environment, and local government, could foster greater alignment between regulatory frameworks and financial instruments. Such integration would ensure the synergistic operation of sustainability policies, financial incentives, and institutional mandates to facilitate the funding of sustainable construction initiatives

8. Conclusions

The specific objective of this paper has been to identify the factors affecting the funding of sustainable construction projects in Tanzania. The study finds that financing is constrained by a combination of financial and market conditions, regulatory and policy shortcomings, institutional and governance weaknesses, and knowledge and technical capacity gaps.

High upfront costs, conservative collateral-based lending, and a focus on short-term returns make sustainable projects appear unattractive within prevailing banking practices (Annamalai & Hari, 2016; Okereke et al., 2022). Regulatory frameworks do not yet provide clear definitions, incentives, or fast-track procedures for sustainability, while institutional fragmentation and bureaucratic inefficiencies raise transaction costs and create uncertainty (Kikwasi & Escalante, 2020; Sambasivan et al., 2017). Knowledge and capacity deficits among both construction professionals and financiers contribute to persistent perceptions that sustainable construction is risky and expensive, and the limited use of ESG metrics undermines the ability to appraise and reward sustainability performance (Phoya, 2018; Yu et al., 2023).

Addressing these factors requires a coordinated, systemic approach that goes beyond individual projects: aligning policies and incentives with sustainability goals, establishing risk-sharing and blended finance mechanisms, investing in capacity-building, and developing robust data and measurement systems (UNECA, 2020; World Bank, 2015). While this paper does not prescribe a full financing model, the factor analysis presented here provides a necessary diagnostic foundation for designing such models in subsequent work. If Tanzania successfully tackles these funding

constraints, it will be better positioned to leverage sustainable construction as a driver of inclusive growth, climate resilience, and long-term economic competitiveness.

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Investigating the Level of Youth Engagement in Smart Township Transition: A Bottom-Up Approach in eThekwini Municipality

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Abstract

The increasing global interest in smart cities has intensified efforts to develop inclusive, technology-enabled urban environments, yet research on youth engagement in smart township transitions in the Global South remains limited. This study will investigate youth engagement in the transition toward smart township development in eThekwini Municipality, South Africa, framing this transition as an urban transformation project in which youth stakeholder participation is a critical determinant of project performance and operational effectiveness. Young people are central to the success of such initiatives; however, their participation is often constrained by structural, technological, and psychological barriers that limit their capacity to influence project outcomes. A mixed-methods approach will be adopted, combining quantitative surveys with qualitative focus group discussions to examine three primary variables: the digital divide as a structural barrier to operational inclusion; technology adoption drivers informed by the Unified Theory of Acceptance and Use of Technology (UTAUT) as a link to operational efficiency, governance, and coordination; and task–technology alignment as a measure of fit between youth capabilities and smart township systems. The study will further explore the mediating effects of perceived feasibility and empowerment, as well as the moderating influence of shortcut culture and fear of starting big. Structural Equation Modelling will be applied to test the hypothesised relationships and validate the proposed conceptual framework. Theoretically, this study extends existing adoption models by integrating digital divide (structural), UTAUT (behavioural), and fear of starting big (psychological) dimensions into a unified framework applicable to township contexts. Empirically, it will offer one of the first youth-focused examinations of smart township adoption in South Africa, with youth engagement positioned as a stakeholder management factor that shapes project performance. Practically, the study will provide actionable recommendations for municipalities to design participatory frameworks that position youth as active co-creators of smart township solutions.

Key words: youth engagement, smart township development, digital divide, urban transformation, stakeholder management

MANAGING ORGANISATIONAL CULTURAL DIFFERENCES IN MULTI-ORGANISATIONAL ICT PROJECTS: AN INTEGRATED CULTURAL MANAGEMENT MODEL

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Keywords: *cultural management, ICT projects, multi-organisational projects, organisational culture, South Africa*

Introduction

The global business landscape is increasingly characterised by reliance on multi-organisational collaborations to deliver complex projects. In Africa, where digital transformation represents a critical pathway to sustainable development, information and communication technology (ICT) projects frequently involve partnerships between organisations with diverse cultural backgrounds. Yet, despite decades of scholarly inquiry, the relationship between cultural diversity and project performance remains unresolved - a gap with significant practical consequences for development programmes, infrastructure investment, and organisational strategy (Stahl and Maznevski, 2021; Battistella *et al.*, 2024; Nummelin, 2005; Olsson, 2007; Kuusisto, 2012; Minbaeva *et al.*, 2021).

South Africa presents a particularly compelling context for investigating cultural dynamics in multi-organisational projects. The nation's unique combination of eleven official languages, post-apartheid transformation imperatives, and Broad-Based Black Economic Empowerment (B-BBEE) requirements creates cultural complexity that challenges universal management frameworks developed in Western settings (Ika, 2012; Mangaliso *et al.,* 2022; Locatelli *et al.*, 2023). The ICT sector - characterised by rapid technological change, project-based work structures, and frequent multi-organisational partnerships - provides an ideal setting for examining how cultural differences influence project outcomes. Research by Hadjielias *et al.* (2024) and Mangaliso *et al.* (2022) demonstrates that cultural dynamics in African project settings operate through context-specific factors not adequately captured by universal frameworks.

The significance of this research extends beyond academic interest. Multi-organisational ICT projects in Africa represent substantial investments in infrastructure and capacity development. When these projects fail or underperform due to cultural friction, costs extend beyond financial losses to delayed development, missed opportunities, and eroded institutional trust (Bakker *et al.*, 2016; Ika, 2012). Understanding how to manage cultural differences effectively therefore has direct

implications for African development trajectories and the achievement of digital inclusion objectives.

The scholarly evidence on this question is distinctly inconclusive. Stahl and Maznevski (2021), in their meta-analytic retrospective of multicultural team research, documented effect sizes ranging from −0.60 to +0.48, characterising cultural diversity as a 'double-edged sword'. Battistella *et al.* (2024) identified significant gaps in understanding how culture affects project management performance outcomes, calling for research that specifies mechanisms rather than merely documenting correlations. Thomas and Liao (2023) noted that cultural intelligence research has focused primarily on conceptualisation and measurement rather than implementation guidance. Den Hartog and De Hoogh (2024) identified leading culturally diverse teams as a critical research frontier requiring empirical investigation. Fellows and Liu (2016) noted that the significance of cultural differences on project outcomes remains largely unquantifiable. This inconclusiveness creates practical challenges: organisations hesitate to invest in cultural management when research cannot demonstrate clear benefits, yet simultaneously experience cultural friction that undermines project performance.

This study addresses the primary research question: *To what extent do organisational cultural differences of project teams impact the outcome of multi-organisational ICT projects in South Africa?* The study aims to develop a conceptual model for managing organisational cultural differences - a practical contribution translating empirical findings into actionable guidance for practitioners navigating cultural complexity in multi-organisational settings.

Four hypotheses operationalised this inquiry for quantitative testing**. H1** posited that partner organisations in multi-organisational ICT projects exhibit measurable differences across organisational culture dimensions. **H2** posited that organisational cultural dimensions are significantly associated with team dynamics and effectiveness in multi-organisational ICT projects. **H3** posited that team dynamics and effectiveness are significantly associated with perceived project success in multi-organisational ICT projects. **H4** posited that the presence of organisational processes for managing cultural differences is positively associated with perceived project success. Four qualitative propositions (P1–P4) further guided exploration of mechanisms underlying these quantitative relationships.

Theoretical Background

Organisational Culture in Project Contexts

Organisational culture constitutes the shared values, beliefs, and practices that shape behaviour within organisations (Schein, 2017). Culture operates at multiple levels - from visible artefacts to espoused values to underlying assumptions - and influences how members interpret situations, make decisions, and interact with others. When organisations collaborate on joint projects, their distinct cultures interact, creating dynamics that can either enhance or impede project performance (Bakker *et al.*, 2016).

Hofstede *et al.* (2010) provide a foundational framework identifying dimensions such as power distance, individualism-collectivism, and uncertainty avoidance that shape organisational behaviour. The GLOBE framework (House *et al.*, 2004) contributes the important distinction between cultural practices ('as is') and values ('should be'), recognising that organisations may aspire to cultural characteristics they do not yet embody. Multi-organisational projects - temporary endeavours involving personnel from multiple parent organisations - represent contexts where cultural dynamics are particularly salient (Bakker *et al.*, 2016). Unlike projects conducted within single organisations, multi-organisational initiatives must navigate intersecting organisational histories, governance structures, and cultural assumptions.

Trompenaars and Hampden-Turner's (2020) Seven Dimensions framework offers additional interpretive insight into relationship dynamics in multi-organisational settings - particularly regarding universalism-particularism, individualism-communitarianism, and attitudes toward time and authority. Given its individual and relational unit of analysis, the framework complements Hofstede's organisational-level measurement in this study rather than serving as a primary quantitative instrument.

The Inconclusiveness Problem and Five Research Gaps

Research on cultural diversity's effects has produced contradictory findings across decades of inquiry. Some studies demonstrate positive relationships between cultural diversity and team performance, attributing benefits to enhanced creativity, broader perspectives, and diverse knowledge resources; others document negative relationships, citing communication difficulties, conflict escalation, and coordination challenges (Stahl and Maznevski, 2021). A systematic review of the literature identifies five critical gaps that this study directly addresses.

Gap 1 - Inconclusiveness of cultural impact evidence: Meta-analytic effect sizes spanning −0.60 to +0.48 leave practitioners without clear guidance (Stahl and Maznevski, 2021; Nummelin, 2005; Minbaeva *et al.*, 2021; Fellows and Liu, 2016). **Gap 2 - Absence of process mechanism specification:** Existing frameworks identify cultural dimensions but do not specify how they affect outcomes (Battistella *et al.*, 2024; Wang *et al.*, 2023; Stahl and Maznevski, 2021). **Gap 3 - Lack of an integrated management framework:** No existing framework integrates diagnosis, mechanism specification, and management intervention for multi-organisational project contexts (Wang *et al., 2023*; Unterhitzenberger *et al., 2023*). **Gap 4 - Deficit of context-specific African research:** Cultural frameworks developed in Western contexts may not transfer to environments with post-colonial dynamics and distinct institutional configurations (Ika, 2012; Hadjielias *et al.*, 2024; Mangaliso *et al.*, 2022). **Gap 5 - Recognition-implementation disconnect:** Practitioners acknowledge cultural management's importance, yet organisations lack systematic frameworks for cultural intervention (Thomas and Liao, 2023; Bowman Williams and Cox, 2022; Chua *et al.*, 2023). These five gaps collectively motivate both the research design and the development of the Integrated Cultural Management (ICM) Model.

Research Methodology

The study employed a sequential explanatory mixed-methods design with an embedded qualitative component in Phase 1, notated as QUAN(qual)→QUAL (Creswell and Plano Clark, 2023). The dominant quantitative phase incorporates an embedded qualitative element through open-ended questions in Section E of the survey instrument, which served three purposes: capturing preliminary qualitative insights within the quantitative phase, identifying information-rich cases for Phase 2 purposive sampling, and informing interview protocol development.

This approach enabled both breadth - statistical patterns across a sample - and depth - contextual understanding of mechanisms - while allowing qualitative findings to explain and contextualise quantitative results. The design aligns with pragmatist philosophical assumptions emphasising practical outcomes and actionable knowledge.

Population, Sample and Access

The study population comprised South African ICT organisations across three sub-divisions: fixed-line telecommunications, mobile network operations, and Internet Service Providers (ISPs). Drawing on ICASA (2023) data indicating a study population of 1,447 to 2,901 employees per sub-division, a minimum of 36 individuals per sub-division was targeted to ensure adequate statistical representation. The operationalised population included project owners, senior project managers, project managers, and project team members with a minimum of two years' experience in multi-organisational ICT projects within medium-to-large organisations (>100 employees).

Access to participating organisations was facilitated through the researcher's professional network within the South African ICT industry, accumulated over fourteen years of project management experience across telecommunications and IT sectors. Sixteen organisations were formally approached; eight agreed to participate, representing diverse ICT segments (fixed-line, mobile, ISP) and comprising both Lead Partner Organisations (LPOs) and Delivery Partner Organisations (DPOs). The eight non-participating organisations declined primarily for structural reasons - internal restructuring, restrictive research policies, or organisational closure - rather than substantive concerns about the research.

Quantitative Phase

Participants across the eight organisations were contacted via telephone, WhatsApp, and email to confirm availability and willingness to participate. Purposive maximum-variation sampling was employed to ensure representation across roles, organisational types, industry segments, and demographic backgrounds. Of 135 questionnaires distributed, 112 were returned (82.9%). After screening for completeness, 93 valid responses were retained for analysis - a valid response rate of 68.9%, exceeding the 60% threshold recommended by Baruch and Holtom (2008). The sample represented all eight organisations across three ICT sub-sectors.

A structured questionnaire measured cultural dimensions through 22 items adapted from Hofstede's Multi-Focus Model, team dynamics through six items, and project success through categorical assessment. Exploratory Factor Analysis (EFA) was conducted using principal axis factoring with oblique (Promax) rotation following Hair *et al.* (2019). Prior to extraction, sampling adequacy was verified using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity. Factor retention followed parallel analysis and scree plot criteria; internal consistency was assessed using Cronbach's alpha. A priori power analysis (G*Power) confirmed that n = 84 would be sufficient to detect medium effect sizes ($\rho = 0.30$) with $\alpha = 0.05$ and power = 0.80 (Faul *et al.*, 2009), establishing that the achieved n = 93 provided adequate statistical power. Following EFA, chi-square tests examined associations between categorical variables and Spearman's correlation analysis assessed ordinal relationships ($\alpha = 0.05$).

Section E of the questionnaire comprised open-ended questions capturing preliminary qualitative insights regarding cultural differences, project failure factors, and success factors. This embedded qualitative component contributed to the integration strategy by enabling direct connecting of Phase 1 patterns to Phase 2 exploration, and by identifying participants whose survey responses warranted deeper qualitative investigation.

Qualitative Phase

Following quantitative analysis, 20 potential interview participants were purposively identified from the Phase 1 respondent pool using five criteria informed by quantitative findings: (1) *organisational representation* - participants drawn from all eight organisations that could be re-engaged, enabling direct exploration of survey patterns; (2) *role diversity* - sampling across project owner, senior project manager, project manager, and technical specialist roles to capture both strategic and operational perspectives; (3) *partnership type experience* - prioritising participants with local-international project experience, where chi-square analysis had revealed differential success rates; (4) *maximum variation* - ensuring diversity across LPO/DPO type, industry segment, tenure, and gender (Patton, 2014); and (5) *seniority* - targeting senior organisational levels (Levels 1–3) to capture strategic cultural management perspectives. Of the 20 invited, 11 agreed to participate (55% acceptance rate), representing seven of the eight Phase 1 organisations across all three ICT sub-sectors.

Semi-structured interviews averaged 48 minutes; all were recorded and transcribed verbatim. Thematic analysis followed Braun and Clarke's (2021) reflexive approach, moving iteratively through data familiarisation, initial coding, theme development, and theme refinement. Data saturation was reached at Interview 10, with no new themes emerging thereafter. Member checking with selected participants confirmed interpretive validity. The principle of information power (Malterud *et al.*, 2016) - rather than purely numerical thresholds - supported the adequacy of eleven interviews given the study's focused QUAN→QUAL design, theoretically-informed protocol, and strong participant expertise.

Conceptual Framework

Before presenting findings, it is necessary to distinguish the conceptual framework from the ICM Model that follows. The conceptual framework is a research tool - it structures the empirical inquiry, defines the hypothesised relationships, and generates the four testable hypotheses. The ICM Model, presented later in this paper, is the practical management output of the research - a decision tool developed from the empirical findings. The two serve fundamentally different purposes (Van Aken, 2005).

Drawing on social identity theory (Tajfel and Turner, 1979), transformational leadership theory (Bass and Riggio, 2006), and cultural intelligence scholarship (Earley and Ang, 2003), this study proposed a process-mediated conceptual model: Cultural Differences → Team Dynamics → Project Success. This framework positions cultural differences as antecedent conditions influencing project outcomes through team-level processes rather than determining outcomes directly. Leadership and communication function as cross-cutting mechanisms that moderate relationships throughout the model, determining whether cultural differences become opportunities for integration or catalysts for dysfunction.

Figure 1 presents the conceptual framework that guided the empirical investigation, illustrating the process-mediated directional pathway from cultural antecedents through team dynamics to project outcomes, with leadership moderation and communication integration operating as cross-cutting mechanisms.

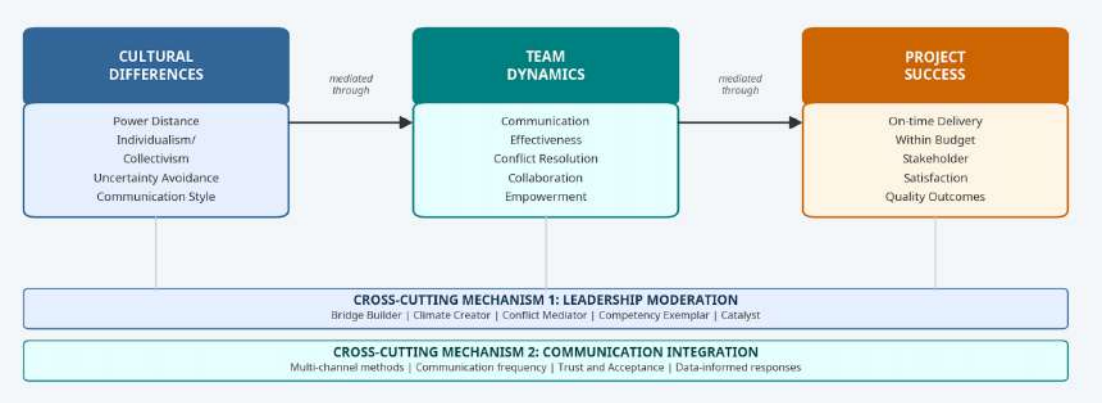


Figure 1: Process-Mediated Conceptual Framework

Source: Bass & Riggio (2006); Tajfel & Turner (1979); Earley & Ang (2003)

Findings

Quantitative Results

Exploratory factor analysis identified five distinct cultural dimensions explaining 68.9% of total variance. The KMO measure (0.849, classified as 'meritorious' per Kaiser, 1974) confirmed sampling adequacy, and Bartlett's Test of Sphericity ($p <$

0.001) confirmed factorability. Table 1 summarises the extracted factors with their variance contributions and reliability coefficients.

Table 1: Factor Analysis Results

Factor	Description	Variance Explained	Cronbach's α
F1	Collaborative Communication & Problem-Solving	36.0%	0.91
F2	Inverse Cultural Bias & Intergroup Relations	12.9%	0.84
F3	Innovation and Learning Capability	8.5%	0.78
F4	Strategic Necessity and Success Orientation	6.9%	0.72
F5	Organisational Identity and Cultural Integration	4.6%	0.62

H1 (Supported): Partner organisations exhibited measurable differences across organisational culture dimensions. The five-factor structure with strong loadings (>0.50) and adequate reliability confirms that cultural dynamics are empirically distinguishable and quantifiable in the South African ICT context. **H2 (Supported):** Organisational cultural dimensions were significantly associated with team dynamics and effectiveness. Inter-factor correlations ranged from $\rho = 0.598$ (Communication-Leadership) to $\rho = -0.656$ (Communication-Cultural Bias), demonstrating substantial relationships between cultural factors and team functioning. **H3 (Supported):** Team dynamics and effectiveness were significantly associated with perceived project success ($\chi^2 = 11.453$, $p < 0.05$; Cramér's V = 0.353). Leadership effectiveness showed the strongest correlation with success ($\rho = 0.773$), followed by Collaborative Communication ($\rho = 0.608$). **H4 (Partially Supported):** The presence of organisational processes for managing cultural differences showed only weak positive association with perceived project success ($\rho = 0.140$), despite 59% of respondents recommending formal cultural training. This reveals a critical recognition-implementation gap: practitioners acknowledge the value of formal processes, yet organisations have not systematically implemented them - reflected in formal processes recording the lowest mean score of all dimensions (M = 2.33). Notably, 98% of sampled projects were rated successful, demonstrating that cultural differences are entirely manageable through appropriate leadership intervention.

Qualitative Results

Qualitative analysis validated all four propositions and identified key mechanisms underlying quantitative patterns. Seven themes emerged from the thematic analysis of eleven interviews. Table 2 presents the full thematic summary with consistent prevalence reporting across all themes.

Table 2: Summary of Thematic Analysis Findings

Theme	Description	Prevalence (n=11)
1. Organisational Culture Conceptualisation	Culture understood as behavioural guidelines, values, and beliefs; personal and organisational influences interact	11/11 (100%)
2. Multi-Organisational Cultural Dynamics	Partner organisations exhibit distinct cultures; project teams develop hybrid cultures through organic or structured processes	11/11 (100%)
3. Cultural Differences Impact	Minimal direct impact on success/failure; process and communication challenges affect efficiency	11/11 (100%)
4. Success Factors	Leadership cultural competency primary; communication openness essential; structural solutions valuable	11/11 (100%)
5. Failure Factors	Authoritarian leadership; cultural insensitivity; blame culture; accountability evasion	9/11 (82%)
6. Generational Evolution (Emergent)	Generational cultural shifts; age-related adaptation challenges in multi-generational teams	6/11 (55%)
7. South African Context (Emergent)	Transformation imperatives; racial dynamics; multilingual complexity	8/11 (73%)

Three primary mechanisms emerged. First, **Leadership as Primary Moderator:** All 11 interviewees (100%) emphasised leadership's critical role in cultural management. Four culturally competent leadership roles were identified: Cultural Bridge Builder (connecting disparate perspectives), Climate Creator (establishing inclusive environments), Conflict Mediator (addressing tensions before escalation), and Competency Exemplar (modelling desired behaviours). One participant noted: 'As a Project Manager I didn't allow the cultural differences to surface and impact the outcome of the project.'

Second, **Friction Cascade Mechanism:** A four-stage escalation pathway was identified - Misalignment (initial communication gaps) → Breakdown (communication failures and coordination problems) → Conflict (interpersonal tensions) → Trust Erosion (relationship damage and collaboration withdrawal). Process orientation was discussed by 9/11 interviewees (82%), who described how conflicting governance expectations and approval processes escalated into relational breakdown when not proactively addressed. Third, **Communication Elasticity:** All 11 interviewees (100%) emphasised communication effectiveness as central to project outcomes. Effective multi-organisational teams develop adaptive communication repertoires - adjusting formality, directness, channel selection, and timing - enabling integration without requiring cultural homogenisation.

Context-specific dimensions not captured by universal frameworks emerged prominently: transformation dynamics and racial dynamics were discussed by 8/11 interviewees (73%); multilingual complexity reflecting eleven official languages arose

consistently; and generational evolution was discussed by 6/11 interviewees (55%). These context-specific findings validate calls for South African-specific frameworks.

The integrated QUAN(qual)→QUAL findings directly answer the research question: **organisational cultural differences significantly impact multi-organisational ICT project outcomes in South Africa, primarily through leadership and communication mechanisms**. Quantitative patterns (leadership $\rho = 0.773$; communication F1 explaining 36% of variance) are explained qualitatively by leadership's role in preventing friction cascade escalation, and by the recognition-implementation gap that explains why formal processes (H4) showed weak association with success despite practitioner endorsement.

The Integrated Cultural Management (ICM) Model

The study's primary practical contribution is the Integrated Cultural Management (ICM) Model - a comprehensive, evidence-based framework translating empirical findings into actionable guidance. The model was developed to address the five critical gaps identified earlier in this paper: (1) lack of project-specific cultural management guidance, (2) absence of multi-organisational collaboration focus, (3) limited practitioner-oriented implementation tools, (4) insufficient attention to African and South African contexts, and (5) no systematic integration of leadership and communication as cross-cutting factors. Existing cultural frameworks - Hofstede's Cultural Dimensions, the GLOBE framework, and Trompenaars' Seven Dimensions - remain predominantly diagnostic, identifying and measuring cultural differences without prescribing management interventions; the ICM Model addresses this structural limitation.

Model Architecture

Figure 2 presents the ICM Model architecture, illustrating how the three-level intervention structure addresses cultural complexity in multi-organisational ICT project contexts. The model directly translates empirical findings into its design: leadership's primacy ($\rho = 0.773$) is reflected in the cross-cutting Leadership Moderation mechanism; communication's dominance (F1, 36% variance) is embedded in the Communication Integration mechanism; and the recognition-implementation gap (H4 partial support) is addressed through phase-specific protocols and role-based implementation workflows.



Figure 2: Integrated Cultural Management (ICM) Model

The three intervention levels ensure systemic, coordinated cultural management. The **Strategic Level** encompasses cultural competency policy, partnership governance design, leadership selection criteria, and cultural risk integration - executive commitment creates enabling conditions for the levels below. The **Operational Level** encompasses communication strategy, team culture formation, process adaptation, and conflict resolution - project managers implement cultural management through daily practices. The **Individual Level** encompasses cultural competency development, personal relationship building, continuous cultural learning, and cross-cultural mentoring - team members develop awareness and skills for cross-cultural collaboration.

Cross-Cutting Mechanisms

Leadership Moderation operates across all phases and levels, reflecting its empirical primacy ($\rho = 0.773$). The model specifies four leadership roles - Bridge Builder, Climate Creator, Conflict Mediator, and Competency Exemplar - with phase-specific responsibilities. **Communication Integration** reflects communication's dominant role (F1, 36% variance) and incorporates communication elasticity principles - adaptive repertoires accommodating diverse preferences - across all phases and levels. Together, these mechanisms operationalise the process-mediated pathway validated in the quantitative phase.

Implementation Phases

The model prescribes five implementation phases aligned with the project lifecycle: (1) **Foundation Phase** (Pre-project) - cultural assessment, stakeholder mapping, and capability baseline establishment; (2) **Launch Phase** (Initiation) - team formation protocols, cultural charter development, and communication framework establishment; (3) **Execution Phase** (Implementation) - ongoing cultural climate monitoring, friction early-warning response, and integration practice reinforcement; (4) **Adaptation Phase** (Response to Challenges) - targeted interventions addressing emerging cultural challenges and conflict resolution; and (5) **Transition Phase** (Closure) - knowledge

capture, capability transfer, and lessons-learned documentation for organisational learning.

Discussion

This study makes a contribution towards the resolution of the longstanding debate regarding cultural diversity's impact on project outcomes and contextualises its findings against prior empirical and theoretical work.

Resolution of the Inconclusiveness Debate

Stahl and Maznevski's (2021) meta-analysis documented effect sizes from −0.60 to +0.48, leaving practitioners without clear guidance. The present study contributes three clarifying insights that advance this body of evidence. First, the five-factor structure explaining 68.9% of variance demonstrates empirical precision previously lacking - consistent with Battistella *et al.*'s (2024) call for mechanism-specific rather than correlational research, and extending their contribution by providing an empirically-derived dimensional structure for the South African ICT context. Second, correlations with success ranging from a moderate negative ($\rho = -0.446$, Cultural Bias) to a large positive ($\rho = 0.773$, Leadership) establish that cultural dynamics account for meaningful variance in project outcomes. These are at the upper end of the range documented by Stahl and Maznevski (2021), consistent with the hypothesis that the positive end of the 'double-edged sword' manifests when active cultural management is practised - evidenced by the 98% project success rate. This finding contradicts studies reporting predominantly negative culture-performance relationships (Nummelin, 2005; Olsson, 2007) by demonstrating that cultural differences do not predetermine negative outcomes.

Third, the process-mediated pathway (Cultural Differences → Team Dynamics → Project Success) addresses Battistella *et al.*'s (2024) observation that scholarship has inadequately specified how culture shapes project performance. Rather than determining outcomes directly, cultural differences operate through team-level mechanisms amenable to management intervention - consistent with Bakker *et al.*'s (2016) theorisation of temporary multi-organisational arrangements. The key insight resolving prior contradictions lies in recognising cultural differences as *process variables* rather than fixed determinants: their impact depends on the quality of cultural management applied, not on cultural composition itself.

Leadership as the Primary Moderating Variable

Leadership effectiveness exhibited the strongest empirical association with project success ($\rho = 0.773$). This finding extends Den Hartog and De Hoogh's (2024) identification of cross-cultural leadership as an underdeveloped research frontier by empirically specifying four leadership functions in culturally diverse multi-organisational settings. The convergence of all 11 interviewees (100%) around leadership's primacy is notably stronger than comparable findings in the multicultural team literature (Stahl and Maznevski, 2021), suggesting that the multi-organisational

project context amplifies leadership's moderating role compared to single-organisation settings. Bass and Riggio's (2006) transformational leadership theory is enriched by this typology, which specifies how transformational leadership manifests when teams span organisational boundaries.

The Recognition-Implementation Gap

H4 received only partial support - formal cultural management processes showed weak association with success ($\rho = 0.140$) despite 59% of respondents endorsing formal cultural training. This finding directly extends Thomas and Liao's (2023) observation that cultural intelligence scholarship has emphasised conceptualisation over implementation. The convergence of quantitative and qualitative evidence is telling: 82% of interviewees (9/11) identified process orientation as a source of friction, yet formal processes recorded the lowest mean score ($M = 2.33$), confirming the recognition-implementation gap. The ICM Model directly addresses this gap through phase-specific protocols, role-based instructions, and implementation workflows that translate cultural awareness into systematic action.

South African Contextual Specificity

The qualitative phase surfaced three context-bound dimensions not captured by universal frameworks: transformation imperatives (8/11, 73%), multilingual complexity reflecting eleven official languages, and generational dynamics (6/11, 55%). These findings support Semenov and Randrianasolo's (2024) challenge to assumptions that cultural intelligence applications transfer uniformly across contexts, and validate Hadjielias *et al.* (2024) and Mangaliso *et al.* (2022) recommendations for context-specific frameworks in African project settings. This contradicts the implicit universalism of frameworks developed in Western contexts, with direct implications for multinational organisations operating in South Africa.

Implications for African Business and Development

Implications for Practice

For **project managers**, the strong correlations between cultural factors and success indicators ($\rho = 0.608–0.773$) establish cultural management as central to project outcomes, not peripheral. This justifies commissioning cultural assessments before project activities commence, allocating dedicated time for cultural management activities, monitoring cultural climate indicators continuously, and developing multi-channel communication strategies accommodating diverse preferences. For **senior executives**, leadership effectiveness's primacy ($\rho = 0.773$) positions executive commitment as the highest-priority cultural management investment - including allocating resources for capability development, incorporating cultural competency in leadership selection, and personally modelling bridge-building behaviours. For **HR and organisational development professionals**, the recognition-implementation gap identifies a critical role: developing training curricula addressing the five validated

cultural dimensions, creating assessment instruments enabling systematic diagnosis, and institutionalising cultural management through policy integration and performance alignment.

Implications for Policy

Project management standards - notably the PMI's Project Management Body of Knowledge (PMBoK) and Association for Project Management Body of Knowledge (APM BoK) - currently lack explicit guidance for cultural management in multi-organisational project contexts, despite the prevalence of such collaborations. This study specifically recommends that PMI and APM establish cultural management as a formal knowledge area within their bodies of knowledge, incorporating the validated ICM Model as guidance for cultural assessment, integration planning, and friction prevention in multi-organisational project environments. Professional certification programmes should include cultural competency requirements alongside technical competencies. In the South African context, B-BBEE frameworks should consider cultural integration capability as a dimension of transformation compliance for multi-organisational partnerships, given that effective cultural management supports rather than undermines transformation objectives.

Implications for Research

The process-mediated pathway validated here suggests that future research designs should incorporate mediating variables rather than testing only direct culture-outcome relationships. The recognition-implementation gap indicates that measurement instruments should distinguish between awareness of cultural management practices and their actual implementation. The emergence of context-specific dimensions suggests that researchers should complement universal instruments with exploratory qualitative phases to identify locally salient factors.

Limitations and Future Research

Several limitations warrant acknowledgement. The cross-sectional design captures associations at a single point rather than tracking dynamics over time; longitudinal research would enable causal validation. The achieved sample of n = 93, while adequate for bivariate hypothesis testing, falls below several commonly cited EFA thresholds (Hair *et al.*, 2019); the five-factor structure should be treated as exploratory pending replication with larger samples through confirmatory factor analysis. The geographic focus on South Africa, while appropriate for context-sensitive research, means that context-specific findings require cross-national replication before generalisability to other African contexts can be claimed.

Future research should prioritise: (1) longitudinal studies tracking cultural management implementation over project lifecycles; (2) pilot implementation studies validating ICM Model components through action research; (3) cross-national replication testing the five-factor structure across diverse African contexts; and (4) sector-specific

applications examining boundary conditions in construction, healthcare, and financial services.

Conclusions

This study demonstrates that organisational cultural differences exert significant, substantial, and manageable influence on multi-organisational ICT project outcomes in South Africa. The findings helps resolve the longstanding inconclusiveness - documented by Stahl and Maznevski (2021) and Battistella *et al.* (2024) - by establishing that cultural differences operate through process mechanisms amenable to management intervention rather than determining outcomes directly. Three hypotheses were fully supported (H1, H2, H3) and one partially supported (H4), collectively validating the process-mediated pathway and revealing the recognition-implementation gap that the ICM Model addresses.

The ICM Model provides practitioners with systematic, evidence-based guidance for navigating cultural complexity, translating cultural management from intuitive art to actionable discipline through its three-level architecture (Strategic, Operational, Individual), five implementation phases, and dual cross-cutting mechanisms (Leadership Moderation and Communication Integration). The study directly responds to literature calls for context-specific management frameworks in African multi-organisational projects, and addresses the challenge - facing organisations navigating local and international disruptions and complexities - of managing cultural differences effectively. The recommendation that bodies such as the PMI and APM incorporate cultural management formally into their respective guides represents the study's most actionable policy contribution. As multi-organisational collaboration becomes increasingly prevalent across African business contexts, the capacity to navigate cultural differences effectively transitions from competitive advantage to operational necessity.

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Introduction

Public-Private Partnership (PPP) projects have emerged as pivotal vehicles for addressing infrastructure deficits globally, particularly where governments face severe fiscal constraints. As Casady, Eriksson, Levitt and Scott (2020: 162) define them, PPPs are long-term contractual arrangements between public agencies and private partners that distribute risk across the project lifecycle and leverage combined resources to deliver public services. The global PPP portfolio in developing countries alone exceeds US$1.66 trillion — representing 5.25 percent of world GDP — and encompasses more than 5,000 infrastructure projects worth over US$1.5 trillion (World Bank, 2022; 2017). These partnerships have contributed measurably to poverty reduction, with global poverty rates declining from 37.46 percent to 9.07 percent between 2011 and 2017 (World Bank, 2022). Yet, despite these aggregate gains, the value creation process within individual PPP projects remains deeply inconsistent.

Value creation in PPPs is a multifaceted process through which public and private partners collaboratively deliver infrastructure and services that satisfy diverse stakeholder needs throughout the PPP-PLC. It extends beyond mere infrastructure delivery to encompass economic, social, political, functional, ecological, and sustainability dimensions that collectively enhance community wellbeing (Arimoro, 2022; Liu, Wang and Guo, 2021). The PPP-PLC — comprising project identification, procurement, design and construction, operation and maintenance, and transfer — is inherently value-creating at each phase. When this process works, projects generate durable value. When it does not, the consequences are severe: public unrest, project termination, and financial losses that dwarf the original investment.

In Uganda, this paradox is acute. The country has enacted comprehensive regulatory reforms — including the PPDA Act, the PPP Act of 2015, the establishment of a dedicated PPP Unit, and the Roads Act of 2019 — and has attracted 28 PPP projects worth over US$1.9 billion across energy, transport, agriculture, education, ICT, and health sectors (World Bank, 2017; Office of the Auditor General, 2017). Yet Uganda faces an annual infrastructure deficit of approximately US$400 million and loses an estimated US$300 million annually to infrastructure development inefficiencies (World Bank, 2017; Ogwang and Vanclay, 2021). Despite borrowing approximately US$19.54 billion (47 percent of GDP) to finance infrastructure, much of the projected value remains unrealised (Ministry of Finance Planning and Economic Development, 2022).

Existing PPP scholarship has examined this failure through lenses of stakeholder complexity, power dynamics, risk misallocation, and institutional weakness (Villani, Greco and Phillips, 2017; Vecchi, Cusomano and Casalini, 2022; Grossi, Vakkuri and Sargiacomo, 2022). However, a critical gap persists: there is no comprehensive, empirically grounded framework guiding practitioners on how to navigate value creation — addressing barriers, leveraging drivers, and embedding best practices — across all phases of the PPP lifecycle. Furthermore, Public Value Theory — which foregrounds multi-sector, multi-actor creation of socially legitimate, operationally feasible, and politically viable public outcomes (Moore, 1995; Benington and Moore, 2010) — has rarely been applied to explain value creation within PPPs specifically, despite its clear conceptual fit. This paper addresses that gap directly.

Drawing on qualitative research with sixteen PPP practitioners and end-users across Uganda, and underpinned by Public Value Theory, the paper examines barriers and drivers of value creation across the PPP-PLC, analyses the gap between current and best practices, and presents a validated best-practice value creation framework. The paper is structured as follows: value creation theory and empirical foundations; research methodology; analysis of findings; the best-practice value creation framework; and conclusions and recommendations.

Value Creation in PPPs: Theoretical and Empirical Foundations

Governments of both developing and developed countries continuously face funding challenges that hinder their ability to meet citizens' infrastructure and service delivery needs (Nguyen and Islam, 2024: 2). PPPs have emerged as a strategic response, allowing government to leverage

private sector resources, efficiency, and technical capacity while retaining oversight and public accountability (Silva et al., 2022: 2). The concept of value creation in PPPs is considerably broader than mere financial return or infrastructure delivery.

Value and Value Creation in the PPP Context

Value reflects worth, benefit, and desirability spanning functional, emotional, political, ecological, and sustainability dimensions (Porter, 2010: 2477). In PPPs, value creation focuses on fulfilling the expectations of three key groups: the state (seeking public interest and fiscal efficiency), the private partner (seeking return on investment), and end-users (seeking affordable, accessible, quality services) (Chung and Hensher, 2018: 354). When value serves all three groups simultaneously, PPPs achieve what Moore (1995) terms 'public value' — outcomes that are operationally feasible, politically legitimate, and socially endorsed. The PPP-PLC provides the structural scaffolding for this process: each phase is inherently value-creating, with partners' roles shifting as resources, risks, and responsibilities are redistributed (Liu, Wang and Guo, 2021).

Public Value Theory as the Theoretical Lens

This study is underpinned by Public Value Theory, conceived by Moore (1995) and extended by Benington and Moore (2010). The theory posits that public sector entities, their private partners, and the communities they serve share collective responsibility for creating value that is operationally feasible, politically legitimate, and socially endorsed. Central to the theory is Moore's 'strategic triangle': the alignment of public value outcomes, operational capacity, and legitimacy and support — three conditions that must simultaneously hold for public value to be created and sustained. In the PPP context, the theory provides a powerful explanatory lens because PPPs represent arrangements where government voluntarily solicits private sector support to jointly deliver public services using shared systems, resources, and assets (Esposito and Dicorato, 2020). While Public Value Theory has been applied in sectors such as e-government, accounting, and technology (Coffey, 2021; Bracci et al., 2020), its application to explain value creation specifically within PPPs remains limited — constituting a key theoretical contribution of this study.

Drivers of Value Creation in PPP Projects

Literature identifies several key drivers of value creation across the PPP-PLC. Participation — from government, private partners, communities, and end-users — is foundational, fostering connectivity among stakeholders through which resources and activities generate quality outputs (Hurley, 2022: 249; Eggert et al., 2018: 82). Partnership quality shapes outcomes at every phase, with strong public-private collaboration enabling synergies that neither partner could achieve independently (Budnyk et al., 2024: 5). Dynamic decision-making — the ability to adapt governance structures and respond to changing conditions — is critical for navigating the uncertainty inherent in long-term PPP contracts (Nibbelink and Brewer, 2018: 939). Risk management represents one of the most frequently cited drivers: the systematic identification, allocation, and mitigation of risks to partners best able to manage them reduces transaction costs, enhances performance, and facilitates timely project completion (Mohammed et al., 2022: 1534). Innovation — encompassing technology adoption, process improvement, and new service models — enables PPPs to remain responsive to evolving public needs (Liu, Clegg and Pollack, 2024: 31). These drivers form the foundation for the eight best-practice elements identified empirically in this study.

Barriers to Value Creation in PPP Projects

Literature documents a persistent array of barriers disrupting value creation across contexts. Opportunistic behaviour by partners — exploiting information asymmetries, regulatory gaps, or contractual ambiguities for private gain — is among the most damaging, corroding trust and triggering costly renegotiations (Peng and Zeng, 2022: 10). Lengthy and costly tendering processes deter participation and inflate project costs (Owolabi et al., 2020: 13). Inadequate financial resources create cost estimation challenges and budget overruns (Mohamad, Ismail

and Mohd Said, 2018: 8). Renegotiations — typically initiated by private partners seeking to maximise profits — impose significant financial burdens on the public sector (Sharafi et al., 2021: 12). Delays arising from bureaucratic processes and slow government decision-making cascade across phases and undermine project viability (Osei-Kyei et al., 2019: 2). High tariffs trigger public opposition and contract termination when citizens cannot afford access (Castelblanco et al., 2022: 11; Ndiaye, 2018: 396).

In Uganda specifically, additional context-specific barriers include: unclear and sector-biased regulatory frameworks (ISER, 2019: 34); lack of technical and human resource capacity within the PPP Unit (Office of the Auditor General, 2018: 180); persistent failure to monitor PPP project activities (Office of the Auditor General, 2019: 79); non-compliance with existing regulations (Bagenda and Ndevu, 2024: 197); and high tariffs excluding the majority of citizens from accessing PPP-delivered services (Twesigye, 2023: 2). These barriers are not isolated — they interact and reinforce one another, creating systemic fragility in Uganda's PPP value creation process.

The Research Gap

Despite this body of knowledge, a critical gap persists. Previous frameworks — by Cheung (2009), Boadi (2020), and Osei-Kyei and Chan (2018) — address important dimensions of PPP practice but remain incomplete: they focus on specific sectors, concentrate on attracting private investment rather than sustaining value creation across the lifecycle, and rarely integrate empirically derived barrier mitigation into phase-specific best-practice guidance. None apply Public Value Theory to organise their recommendations, and none draw on primary data from practitioners across all five PPP-PLC phases simultaneously. This study fills precisely that gap.

Research Methodology

This study adopted a qualitative, interpretivist research design, consistent with the recognition that value creation in PPPs is a socially constructed, context-dependent phenomenon best understood through participant meanings and experiences. An inductive approach was employed, enabling patterns, themes, and meanings to emerge from field data rather than being imposed by pre-existing theoretical frameworks — appropriate given the limited empirical evidence on PPP value creation in African contexts.

Data were collected through semi-structured Key Informant Interviews (KIIs) with sixteen participants, selected via purposive sampling to ensure information-rich contributions from stakeholders with direct knowledge and experience of PPP projects. Participants comprised thirteen project managers (seven from the public sector, six from the private sector) and three project end-users, representing PPP projects across Uganda's energy, transport, agriculture, education, ICT, manufacturing, and health sectors. This ensured a genuinely tri-dimensional view of the PPP value creation process consistent with Public Value Theory. Of the thirteen participants who provided educational background, nine held master's degrees, three held bachelor's degrees, and one held a doctorate, across fields including economics, engineering, law, project management, agribusiness, and construction management.

Interviews were conducted face-to-face (eleven), online via Zoom (three), and by telephone (two). All were audio-recorded with informed consent and transcribed verbatim. Data analysis followed a rigorous thematic qualitative procedure using Atlas.Ti-24 software: transcription, open coding, axial coding, and thematic network development structured around the PPP-PLC phases and research sub-questions. Data collection continued to the point of theoretical saturation — reached at the third interview for end-users and the thirteenth for project managers. Rigour was ensured through member checks, research triangulation, and peer debriefing. Ethical protocols including voluntary participation, informed consent, anonymity, and secure data storage were observed throughout.

Analysis of Findings

Value Creation Potential: Sectors, Phases, and Stakeholder Benefits

The sixteen participants represented PPP projects spanning all five PPP-PLC phases across seven sectors: energy, transport, agriculture, education, ICT, manufacturing, and health. The highest concentration was at the design and construction phase (four projects) and the operation and maintenance phase (four projects). This distribution confirms broad national adoption of the PPP model across Uganda's economy and affirms that PPPs have demonstrated capacity to create value at every phase of the lifecycle.

Stakeholder-reported benefits were wide-ranging: knowledge acquisition and sharing (10.11% of benefit mentions), revenue generation (8.99%), employment and career growth (8.99%), innovation and technological advancement (7.87%), and enhanced safety (6.74%). End-users reported sustained product utilisation exceeding twenty years in some projects, demonstrating long-term value retention when projects are well-managed. These findings affirm the core proposition of Public Value Theory — that PPPs, when structured appropriately, can deliver socio-economic value to the state, private partners, and communities simultaneously.

Current Practices Across the PPP-PLC

Current practices across the five phases reflect functional alignment with PPP-PLC principles, confirming that value creation is occurring — albeit inconsistently. At the project identification phase, the most frequently reported current practices were: attainment of approvals (17.14% of practice mentions), stakeholder buy-in (14.29%), and feasibility studies (11.43%). At procurement, contracting of the private entity (21.43%) and scanning for private entities (21.43%) dominated. At design and construction, construction works (29.17%) and technology incubation (16.67%) were central. Operation and maintenance was characterised by project supervision and monitoring (21.05%), enhanced safety (15.79%), and performance against contract (13.16%). At the transfer phase, handover to government dominated (42.86%), followed by project manual development (21.43%).

The current state of Uganda's PPP landscape was described by participants as transitional: five described PPP projects as still 'in their infancy'; three noted government systems as bureaucratic; three confirmed that PPP projects are costly to implement; while three confirmed that PPP projects are expanding. This transitional characterisation is consistent with the finding that current practices contribute positively to value creation but remain insufficiently consistent to guarantee uniform outcomes.

Barriers to Value Creation

The thematic analysis generated a comprehensive coded barrier profile. The most significant barriers by percentage of coded instances were: delays (12.05%), including delayed financing, government delays, procurement delays, and slow government decision-making; high tariffs (10.84%), where products and services were found not cost-friendly for the general public; high operation and maintenance costs (9.64%), driven by high repair costs and repetitive maintenance; opportunistic behaviours (8.43%), manifesting as middlemen exploitation and private sector profit-mindedness; communication gaps (7.23%), including failure to use feedback, poor sensitisation, and lack of transparency; and insecurity (7.22%), including vandalism and theft of project assets. Additional barriers included bureaucracies (6.02%), human resource constraints (6.02%), limited access to project products (6.02%), climate change effects (6.02%), non-contract compliance (3.61%), profit repatriation (2.41%), and corruption (2.41%).

Project managers provided direct confirmation of these barriers. PM12 observed: "You find in the framework, in the design of the project that everything looks so good on paper but when it comes to implementation, because of the so many bureaucracies you find that actually what is reflected in the design is not what is actually given out on the ground." PM13 reinforced this:

"By nature of how government conducts its business, it is bureaucratic." These accounts confirm that the barriers are operative, persistent, and multi-dimensional.

Best Practices: The Eight Value-Creation Elements

Against these barriers, the thematic analysis identified eight core best-practice elements that, when deliberately operationalised, consistently support value delivery. These elements were derived through coding of participant responses across all sixteen interviews. Figure 1 presents the percentage distribution of the eight elements.

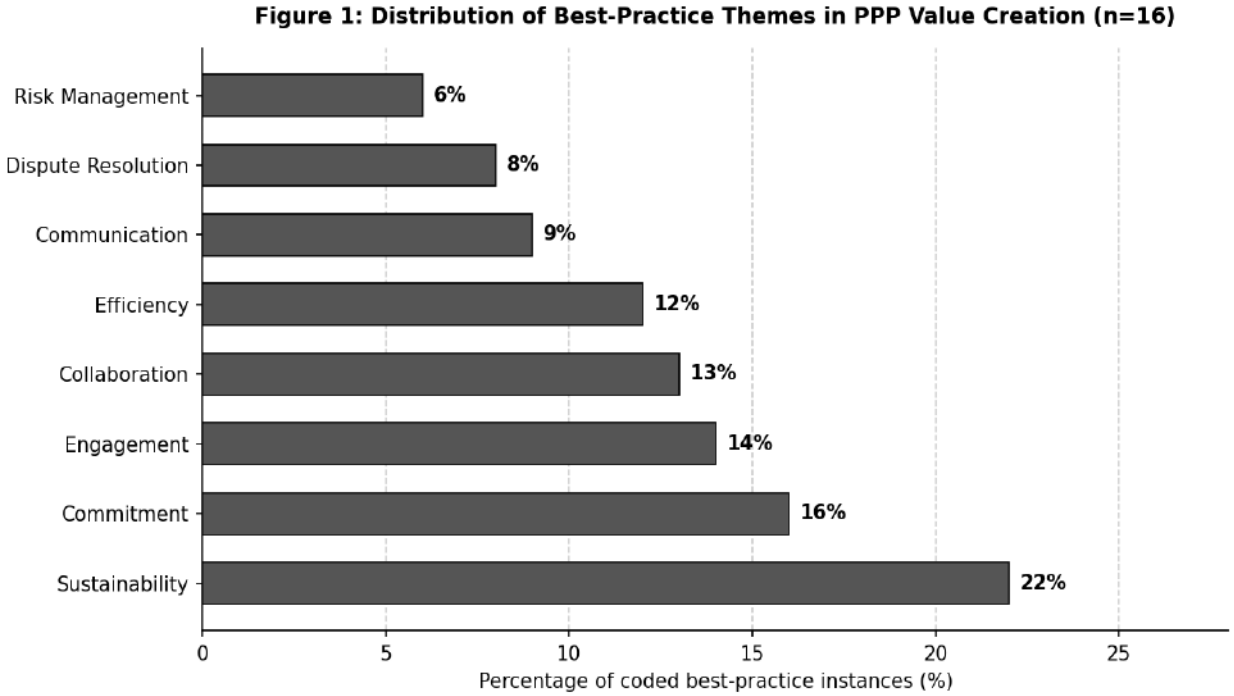


Figure 1: Percentage distribution of best-practice themes in PPP value creation (n=16)

As Figure 1 illustrates, sustainability emerged as the highest-ranked best-practice element at 22% of coded instances, followed by commitment (16%), engagement (14%), collaboration (13%), efficiency (12%), communication (9%), dispute resolution (8%), and risk management (6%). Each element encompasses concrete sub-practices. Sustainability includes commercialisation of products and services, environmental safety, human resource retention, local content, and knowledge management. Commitment encompasses political will, regulatory framework adherence, resource allocation, and partner readiness. Engagement includes stakeholder sensitisation, buy-in, mobilisation, and involvement in monitoring. Collaboration covers leveraging resources, SPV formation, and compliance with terms of reference. Efficiency involves clear project structures, effective monitoring, technical expertise, and timeliness. Communication encompasses clear communication strategies, documentation, and information dissemination. Dispute resolution includes arbitration, third-party intervention, and investigation. Risk management involves risk mapping, registration, sharing, insurance, and contract amendment.

Relationship Between Current and Best Practices

A defining finding of this study is that Uganda's PPP projects operate in a transitional performance space. Current practices — feasibility studies, community engagement, contract management, and performance reporting — demonstrate functional alignment with PPP-PLC principles and contribute positively to value creation. However, they are predominantly reactive, phase-specific rather than lifecycle-spanning, and insufficiently integrated with the eight best-practice elements to guarantee consistent outcomes. Best practice, by contrast, requires proactive barrier anticipation from the earliest phases, systematic integration of

stakeholder voice, deliberate sustainability planning, and structured knowledge transfer through the transfer phase. Projects that operationalised these practices demonstrated measurably superior delivery outcomes. This performance gap is not a resource gap — it is a practice gap, addressable through the framework presented in the next section.

The Best-Practice Value Creation Framework for PPP Projects

The framework presented in this section represents the study's primary contribution to both theory and practice. It was developed through a systematic process grounded in the empirical findings, the literature reviewed, and the checklist for practice framework development (following Connolly, 2007; Stanley and Kelly, 2019; Dyess et al., 2020). The framework translates the study's findings into a practical management instrument for PPP stakeholders — filling the gap in existing frameworks by providing comprehensive, phase-specific, barrier-sensitive, and empirically validated guidance.

Framework Architecture and Core Design Principles

The framework is organised as a five-phase matrix aligned to the PPP-PLC. The framework flow chart (found elsewhere: Bawonga, Rwelamila & Mbatha 2025) which should be handy in practice, is too elaborate to be presented here, hence for lack of space and brevity the framework is clearly described. At each phase, the framework integrates the eight core value-creation elements as both diagnostic criteria and practice guidelines. Five design principles govern its structure: phase-specificity, so each phase receives distinct, actionable practice guidance; barrier-practice linkage, so each recommended practice is explicitly linked to the barrier it addresses; integrated stakeholder orientation, so practices make stakeholder interdependencies explicit in line with Public Value Theory's emphasis on shared, multi-actor accountability; contextual adaptability, ensuring scalability across diverse emerging economy contexts; and a holistic value perspective that encompasses efficiency, sustainability, stakeholder satisfaction, risk management, and social impact simultaneously.

Phase-Specific Best Practices

Phase 1: Project Identification
This phase sets the foundation for the entire project. Best practices include: conducting comprehensive feasibility studies assessing project viability, benefits, and risks; engaging communities early through culturally informed approaches, employing sociologists, and holding townhall meetings; establishing risk registers through brainstorming and focus groups; securing multi-agency government consensus across contracting ministries and the PPP Unit; budgeting for transactional, legal, and research advisors through competitive processes; establishing innovative communication platforms with roadmaps and feedback loops; attaining full government commitment and political will; and creating stakeholder databases and dedicated grievance handling teams. These practices directly address barriers of government bureaucracy, delayed stakeholder engagement, lack of community information, PAP compensation delays, and unstable risk profiles.

Phase 2: Procurement
Best practices at this phase include: adhering strictly to existing laws and regulations; training public sector personnel in procurement oversight; benchmarking international best practices including World Bank and AfDB standards; specifying precise terms of reference; recruiting sophisticated project teams with business acumen to negotiate on government's behalf; evaluating bids on technical expertise and financial viability; establishing an SPV with clear governance structures; incorporating local content targets; regulating profit margins contractually; and building capacity-building and knowledge transfer obligations into contracts. These practices address transparency failures, corruption, lack of local private sector sophistication, profit repatriation risks, and procurement delays.

Phase 3: Design and Construction
Best practices include: ensuring contract compliance monitoring by dedicated teams; incubating and transferring technology systematically; delivering construction works to international

quality standards; integrating eco-friendly materials and energy-efficient technologies; establishing knowledge management systems for institutional memory; involving end-users in design review to prevent imposition of inappropriate solutions; and documenting all project activities. These practices address bureaucratic delays in approvals, budget overruns, technological challenges, and inadequate enforcement of quality standards.

Phase 4: Operation and Maintenance
Best practices include: implementing performance-based management with clear KPIs; maintaining live user satisfaction monitoring; developing tariffs through negotiation with end-user representatives linked to market prices; subsidising access costs for low-income users; maintaining relationships with security agencies to address vandalism; establishing maintenance budgets and framework contracts for specialised equipment; and continuously restrategising to grow the user base when revenue shortfalls occur. These practices address high tariffs, high O&M costs, vandalism and insecurity, limited access, and profit-motivated service interruptions.

Phase 5: Transfer
Best practices include: following succession plans rigorously; retaining at least 80 to 90 percent of trained professional and technical staff from the private partner; conducting comprehensive audits of assets, condition, and outstanding liabilities; developing operational manuals and guides for incoming management; negotiating framework contracts for continuity of specialised maintenance; planning staggered succession to prevent service disruption; and engaging all relevant government ministries in transition committees. These practices address knowledge loss at handover, non-compliance with licensing agreements, cost burden shifting to government, and service disruptions during transition.

Framework Validation

The framework was validated by four senior PPP experts selected on the basis of their close connection to the development of PPPs within Uganda's context; research experience in the Ugandan PPP landscape; seniority level of authority and position in their organisations; and contribution to the framework's development — criteria consistent with Osei-Kyei and Chan (2018) and Cheung (2009). Experts assessed the framework against six validation dimensions using a five-point Likert scale (1=Poor to 5=Excellent): degree of appropriateness; degree of objectivity; degree of replicability; degree of applicability; degree of reliability; and overall suitability for PPP projects in Uganda. All six dimensions scored above the satisfactory threshold of 3.0, confirming that the framework is relevant, useful, and adaptable for PPP contexts. Feedback from validation respondents specifically commended the explicit barrier-practice linkage as enabling proactive risk mitigation rather than reactive problem-solving.

Conclusions and Recommendations

This paper has responded to a persistent gap in PPP scholarship and practice: the absence of a comprehensive, empirically grounded, lifecycle-spanning framework for value creation. Drawing on qualitative research with sixteen PPP practitioners and end-users in Uganda, underpinned by Public Value Theory, it has identified the barriers that undermine value creation across the PPP-PLC, the drivers that enable it, the gap between current and best practices, and has presented a validated framework that translates these findings into actionable, phase-specific guidance.

Key Conclusions

Value creation requires balancing the interests of three stakeholder groups simultaneously. The potential of PPPs to create value is intrinsically linked to understanding and satisfying the expectations of government, private partners, and end-users, with end-user satisfaction being the ultimate indicator of durable public value, consistent with Moore's (1995) Public Value Theory. Eight best-practice elements, integrated across the lifecycle, are essential: value creation is significantly enhanced when reactive current practices are deliberately integrated with commitment, engagement, communication, efficiency, sustainability, dispute resolution,

risk management, and collaboration. The performance gap in Uganda's PPP projects is a practice gap, not a resource gap: the tools for improvement exist within Uganda's own successful PPP experiences and what is lacking is the structured, lifecycle-anchored instrument to deploy them consistently. The barriers, drivers, and practices identified in this study mirror challenges facing PPP programmes across the African continent, making the framework broadly applicable across emerging economy contexts.

Key Recommendations

All PPP projects — including those predating current legislation — should be mandatorily registered with the national PPP Unit to enable systematic supervision, performance monitoring, and framework alignment, with the PPP Unit's capacity correspondingly strengthened. Governments should provide targeted subsidies, capacity-building support, and preferential procurement provisions to develop the sophistication of local private sector partners, reducing profit repatriation and dependency on international contractors. Significant investment is required in training public sector project managers to apply the best-practice value creation framework systematically across all PPP-PLC phases, with framework-informed training made a condition of PPP Unit registration for all new projects. Longitudinal, mixed-method studies are recommended to track the framework's impact on PPP value creation outcomes across different African contexts and to refine the framework's phase-specific prescriptions over time.

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Track 8 - Education Management

Quality Assurance in African Higher Education: Structural Challenges and Paths to Continental Harmonization

Abstract

Quality assurance in African higher education is an important issue, particularly due to the increasing number of students and the rapid development of private institutions. Despite the existence of continental frameworks such as the African Standards and Guidelines for Quality Assurance (ASG-QA) and the Pan-African Quality Assurance Framework (PAQAF), evaluation mechanisms remain limited, including in Tunisia.

This research aims to better understand the levers and barriers to the development of Quality Assurance in African Higher Education (QAAHE).

The results of the exploratory study reveal that QAAHE is primarily hampered by insufficient financial and human resources, as well as organizational resistance to change and a frequent lack of awareness of the continental ASG-QA framework. The operational challenges for external evaluators are compounded by the complexity of procedures and the linguistic diversity of the continent, which complicates the development of standardized training and tools. To successfully navigate this transition, the study recommends a complementary approach that aligns national standards with ASG-QA, supported by dedicated funding integrated into national budgets, targeted awareness campaigns, and priority investment in capacity building for all institutional stakeholders.

Thus, the development of robust quality assurance appears essential to aligning African higher education with the African Union's Agenda 2063 and Sustainable Development Goal 4 (SDG 4), thereby contributing to a more competitive and inclusive educational landscape.

Keywords: Quality Assurance; Evaluation; Pan-African Mobility; Sustainable Development Goal 4.

L’Assurance Qualité dans l’Enseignement Supérieur Africain : Défis Structurels et Voies vers une Harmonisation Continentale

Résumé

L'assurance qualité dans l'enseignement supérieur africain est un enjeu majeur, notamment en raison du nombre croissant d'étudiants et du développement rapide des établissements privés. Malgré l'existence de cadres continentaux tels que les Normes et Lignes directrices africaines pour l'assurance qualité (ASG-QA) et le Cadre Panafricain d'Assurance Qualité (PAQAF), les mécanismes d'évaluation restent limités, y compris en Tunisie.

Cette étude vise à mieux comprendre les leviers et les obstacles au développement de l'Assurance Qualité dans l'Enseignement Supérieur Africain (AQESA).

Les résultats de l'étude exploratoire révèlent que l'AQESA est principalement entravée par l'insuffisance des ressources financières et humaines, ainsi que par la résistance organisationnelle au changement et une méconnaissance fréquente du cadre continental ASG-QA. Les défis opérationnels rencontrés par les évaluateurs sont aggravées par la complexité des procédures et la diversité linguistique du continent, ce qui complique la mise en place de formations et d'outils standardisés. Pour réussir cette transition, l’étude préconise une approche intégrée alignant les standards nationaux sur les ASG-QA, appuyée par un financement dédié intégré aux budgets nationaux, des campagnes de sensibilisation ciblées et un investissement prioritaire dans le renforcement des capacités de tous les acteurs institutionnels.

Ainsi, la mise en place d'un système d'assurance qualité rigoureux apparaît essentielle pour aligner l'enseignement supérieur africain sur l'Agenda 2063 de l'Union africaine et l'objectif de développement durable n° 4 (ODD 4), contribuant ainsi à un paysage éducatif plus compétitif et inclusif.

Mots-clés : Assurance Qualité ; Évaluation ; Mobilité Panafricaine ; Objectif de Développement Durable n° 4.

Track 9 - Special Sessions

Track 10 - Submissions in French

AT THE CROSSROADS OF DISRUPTIONS: THE REFLEXIVE INTERACTION BETWEEN INDIVIDUAL AGENCY AND ORGANIZATIONAL STRUCTURES IN IT CAREER DYNAMICS IN TUNISIA

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Keywords: agency, career scripts, digital transformation, knowledge workers, structuration theory, Tunisia.

This paper examines how, in a context of accelerated digital transformation, the reflexive interaction between the individual agency of Tunisian IT engineers and local organizational structures produces new career scripts within a globalized ecosystem. Drawing on structuration theory (Giddens, 1987) and career script theory (Barley, 1989; Cappellen & Janssens, 2010), we conduct an embedded multiple-case study across seven organizations in Tunisia (Yin, 2014). Forty-four semi-structured interviews (2,387 minutes) were analysed through iterative thematic analysis using NVivo 12. Our findings corroborate three research propositions and yield four conceptual contributions: structural double-articulation as a context-specific extension of structuration theory; ascendant scriptation as a directional institutionalization mechanism; the bridging organizational career script; and the institutional rupture career script. These contributions extend career theory to African emerging contexts and potentially prefigure the technological talent retention challenges the continent will face in the coming decades.

Introduction

Digital transformation, defined as a continuous strategic renewal process of business models and organizational cultures (Warner & Wäger, 2019, p. 327), is restructuring the global skilled labour market in fundamental ways. Within this context, IT engineers constitute *knowledge workers* in the sense of Drucker (1999, p. 84): professionals who own their intellectual means of production and whose skill half-life is estimated at less than two years (Joseph & Ang, 2001, p. 567), compelling them to continuously update their competency portfolios.

Tunisia offers a particularly instructive analytical laboratory in the African context. According to the *Ordre des Ingénieurs Tunisiens* (2024)[1], over 6,500 engineers leave the national territory annually. Mezghani and Chtara (2025, p. 942) document that 59% of the active technology pool is absorbed by the European market. According to Rezgui (2024)[2], some 60% of engineers still residing in Tunisia reportedly collaborate with foreign entities, illustrating an *internal brain drain* (Mnasri & Ben Aissa, 2023, p. 40). Samet (2014, p. 123) had already documented a 63.63% increase in Tunisian senior professionals abroad over the 2000-2010 decade. Structurally analogous configurations are documented in Morocco (Gassemi & Aniba, 2024, p. 43) and Nigeria (Raji, Adebisi & Onubugu, 2025, p. 85).

The management literature reveals a three-fold theoretical gap. First, brain drain research remains macro-economic and inattentive to individual agency mechanisms (Mezghani & Chtara, 2025, p. 943). Second, career script research has been produced exclusively in North Atlantic contexts with stable institutional structures, neglecting emerging economies. Third, digital transformation literature has not examined how transformation reconfigures individual power resources in peripheral contexts as defined by Peng, Wang and Jiang (2008, p. 922).

The central research question is: *In a context of accelerated digital transformation, how does the reflexive interaction between the individual agency of Tunisian IT engineers and local organizational structures produce new career scripts within a globalized ecosystem?*

Theoretical Framework

Digital Transformation and Knowledge Worker

Digital transformation generates disruptions that simultaneously create threats for organizations and opportunities for individuals capable of mastering new technologies (Vial, 2019, p. 121). The IT engineer constitutes the pivotal figure: a *knowledge worker* (Drucker, 1999, p. 84) whose skill half-life of less than two years (Joseph & Ang, 2001, p. 567) imposes perpetual updating. Joseph and Ang's threat-rigidity model (2001, p. 568) distinguishes *turnover*, intra-occupational mobility, from *turnaway*, inter-occupational exit. Their results (p. 572) show IT professionals prefer turnover: they leave organizations rather than their profession, seeking developmental opportunities elsewhere. In the Tunisian context, this turnover acquires an international geographic dimension as local organizations are instrumentally used as bridging career scripts toward European markets.

Structuration Theory and Career Scripts

[1]Ordre des Ingénieurs Tunisiens. (2024, March 30). 6,500 engineers leave Tunisia each year. Tuniscope. https://www.tuniscope.com/article/377999 - Institutional data corroborated by Mezghani & Chtara (2025, p. 942) and Samet (2014, p. 123) in peer-reviewed literature.

[2]Rezgui, D. (2024, May 13). 59% of Tunisian technology talent absorbed by the European market. Managers.tn - Corroborated by Mezghani & Chtara (2025, p. 942) and Mnasri & Ben Aissa (2023, p. 40).

Structuration theory proposes the *duality of structure*: structure is simultaneously constraining and enabling, acting as both the medium and the outcome of the conduct it organizes (Giddens, 1987, p. 74-75). The career script operationalizes this framework: a recurring interaction schema or behavioural grammar framing action (Barley, 1989, p. 50). Cappellen and Janssens (2010, p. 691) distinguish *tight* scripts, highly institutionalized, from *ad hoc* scripts, imposing intense personal elaboration (p. 695). Martineau, Wils and Tremblay (2005, p. 460) identify *hybrid* career scripts as intermediate configurations co-constructed by articulating local and global resources.

Research Propositions

P1: Digital transformation, as an enabling structure, amplifies the agency of Tunisian engineers by offering globalized career scripts that transcend local structural limitations.

P2: Through their reflexivity, engineer-pivots produce hybrid career scripts reconciling international schemas with local structural constraints.

P3: The predominance of ad hoc career scripts constitutes a major predictor of turnover, reflecting actors' desire to join more enabling structural systems.

Methodology

Research Design

The research rests on an embedded multiple-case study design (Yin, 2014, p. 53)[3], articulating two levels of analysis: seven organizations (Level 1: structures) and 44 respondents (Level 2: individual agency). Selection rested on three *a priori* criteria (Yin, 2014, p. 28): (1) terrain accessibility and participation agreement; (2) sectoral diversity; banking software (V), semiconductors (STM), IoT/embedded engineering (T, St), digital transformation (W), Business Intelligence (IM), and technology consulting (D); to maximize analytical generalizability (Eisenhardt & Graebner, 2007, p. 27); (3) organizational structure variety to enable theoretical replication inter-case (Yin, 2014, p. 57), as recognized in international HRM contexts (Tung, 2016, p. 144; Peng, Wang & Jiang, 2008, p. 922).

Table 1: Characteristics of research panel organizations

Code	Sector	Structure Type	MN Present	n	Main Analytical Theme
V	Banking software	MN subsidiary	Yes	8	T3 : Bridging org. Script

[3]The embedded case study design (Yin, 2014, pp. 53-54) integrates two levels: Level 1 (7 organizations: structures) and Level 2 (44 interviews: individual agency), enabling capture of the structuration/agency recursivity (Giddens, 1987).

Code	Sector	Structure Type	MN Present	n	Main Analytical Theme
STM	Semiconductors	MN subsidiary	Yes	6	T2: Bottom-up post creation
T	IoT / embedded	Tunisian SME-I	No	7	T5 : Y-shaped career
W	Digital transform.	Tunisian SME-I	No	6	T2 : Entry negotiation
D	Tech. consulting	MN subsidiary	Yes	7	T1 : Technological monitoring
IM	Business Intelligence	Tunisian SME	No	5	T4 : Structural perceptions
St	Emb. engineering	Tunisian SME	No	5	T3 : Institutional rupture script

MN = multinational; SME-I = medium-sized enterprise (intermediate). Total respondents confirmed: 44. Source: authors' primary data.

Data Collection

Instrumental triangulation (Yin, 2014, p. 121) was achieved through three complementary pillars: (1) *Semi-structured interviews* (n=44; 4 HRD directors, 2 Country Managers, 38 engineers; 2,387 minutes; see Appendix A; Romelaer, 2005, p. 108); (2) *Documentary research* on activity reports of V and STM; (3) *Digital documentary observation*; non-participant observation of public digital platforms (LinkedIn profiles of all 44 respondents; three institutional video clips from V, STM, D), explicitly distinct from netnography as defined by Kozinets (2020, p. 12).

Data Analysis

Four iterative stages of thematic reduction (Miles, Huberman & Saldaña, 2014) were conducted using NVivo 12: open coding, axial coding, selective coding producing five analytical themes by meta-inference (p. 86), and an inter-coder reliability check on 8 interviews (18%, coefficient 0.87 - p. 85). NVivo frequencies are reported as thematic salience indicators, not as inferential statistics. Only individual node frequencies are cited; no aggregated totals are reported.

The five themes are: **T1: Agency resources** (self-training 31/61; certification 9/14; technological monitoring 5/6); **T2: Hybrid negotiation career scripts** (proactive action 30/77; transformation actions 31/51; continuous negotiation 4/7); **T3: Ad hoc career scripts and mobility** (going international 14/23; leaving for another organisation 14/22; expatriation 7/8); **T4: Structural perceptions** (career opportunity perception 36/135; constraint identification 22/55); **T5: Adaptive organisational responses** (employer training 14/25; organisational commitment 3/5; transparency 5/9).

Empirical Results

P1: Digital Transformation as an Agency Amplifier

Analysis of Theme T1 corroborates P1 through a three-stage mechanism. In the first stage, the engineer develops a practical consciousness (Giddens, 1987, p. 86-90) of the differential value of competencies across markets, documented under the node Deepening technical knowledge and technological monitoring (5/6). Engineer AF (organisation D) illustrates this posture:

> *"For people who appreciate the technical side, they are generally searching for the trend, for what is new… Whoever opts for this orientation must be up to date with technology."*

In the second stage, this practical consciousness translates into resource accumulation actions (Self-training 31/61; Certification 9/14). International certifications transcend their technical dimension to become power resources (Giddens, 1987, p. 89), corroborating Joseph and Ang's (2001, p. 572) finding that IT professionals facing obsolescence threats prefer turnover to turnaway. In the third stage, accumulated resources confer transformative capacity (Giddens, 1987, p. 88). Country Manager MBA (organisation STM) illustrates, under the node Career opportunity perception (36/135):

> *"A junior who includes their time at STM in their CV can easily market themselves abroad: in America, Japan, Spain, Germany and France."*

P2: Co-production of Hybrid Career Scripts

Three recurring configurations (Miles, Huberman & Saldaña, 2014, p. 317) structure the co-production of hybrid career scripts, documented through inter-case analytical replication logic (Yin, 2014, p. 57).

Configuration 1: Entry Negotiation

Documented under Proactive action (30/77) and Continuous negotiation (4/7). Engineer RB (organisation W):

> *"Since my job interview… I asked to be assigned to a project manager position and not retained as a developer."*

Configuration 2: Bottom-up Post Creation

Documented under Transformation actions (31/51) vs. Maintenance actions (5/5). Engineer NJ (organisation STM, 11 years' experience):

> *"I organised the position (resource manager) myself, and they took my proposal into consideration. I convinced them to create it."*

An inter-case analytical observation is warranted. This configuration is salient in multinational subsidiaries (V, STM, D); whose formalized structures create an institutional space for progressive scriptation; and marginal in local Tunisian companies and SMEs (IM, St). This contrastive result suggests that organizational size and

international presence constitute structural conditions favorable to ascendant scriptation (Tung, 2016, p. 144; Mezghani & Chtara, 2025, p. 953).

Configuration 3: Adaptive Organisational Response: the Y-shaped Career

Documented under Employer training (14/25), Organisational commitment (3/5) and Transparency (5/9). HRD Manager SJ (organisation T):

> *"We have developed a Y-shaped career management. A first expertise axis and a managerial axis."*

Comparative analysis reveals a transversal inter-case regularity (Yin, 2014, p. 57): in *MN subsidiaries* (V, STM, D), agency takes the form of ascendant scriptation and bridging scripts; in *Tunisian SMEs-I* (T, W, IM), it manifests as continuous negotiation; in *local SMEs* (St), it leads more directly to institutional rupture career scripts (Gassemi & Aniba, 2024, p. 43; Mnasri & Ben Aissa, 2023, p. 55).

P3: Ad Hoc Career Scripts as Turnover Predictors

Analysis of Theme T3 reveals a key symmetry: going international (14/23) and leaving for another organisation (14/22) are equally frequent, nuancing brain drain as exclusively migratory. Engineer IBH (organisation V) articulates the bridging script:

> *"Several colleagues used (V) as a bridge… Working in France or Europe is the objective of most engineers."*

Engineer FT (organisation V) adds: *"I am from the 2003 cohort and there were 74 of us; now only 40 are still in Tunisia."* This constitutes an individual cohort-level declaration, mobilized as qualitative illustration, not an aggregated sector figure (Miles, Huberman & Saldaña, 2014, p. 11).

Engineer MA (organisation St) illustrates the *institutional rupture career script*:

> *"There are engineers who work freelance. And if the freelance project pays well, they leave the company to set up their own account."*

This shift to freelancing constitutes a deliberate abandonment of local organizational structures perceived as insufficiently enabling, in favor of a fully self-determined career script (Cappellen & Janssens, 2010, p. 695; Valette & Culié, 2015, p. 1748).

Table 2: Summary of results by research proposition

Proposition	Core Mechanism	Recurring Configurations / NVivo Nodes	Theoretical Grounding
P1	DT as enabling structure	3 stages: practical consciousness (5/6) → self-training (31/61) + certification (9/14) → MN symbolic capital (36/135)	Giddens (1987); Joseph & Ang (2001); Li (2024)

Proposition	Core Mechanism	Recurring Configurations / NVivo Nodes	Theoretical Grounding
P2	Co-production hybrid scripts	Entry negotiation (30/77), post creation (31/51), Y-shaped career (14/25). Gradation by org. structure type	Barley & Tolbert (1997); Tung (2016); Martineau et al. (2005)
P3	Ad hoc scripts as turnover predictors	Bridging script (22/55; 14/23); institutional rupture script (14/22; 14/23)	Cappellen & Janssens (2010); Gassemi & Aniba (2024); Mnasri & Ben Aissa (2023)

Source: authors' primary data, NVivo 12. Node notation: files/references.

Discussion

Institutional Weakness and Structural Double-Articulation

Characterizing the Tunisian context as institutionally weak with respect to technological career scripts rests on North's (1990, p. 3) conception of institutions as the *rules of the game*: a context is institutionally weak when these rules are insufficiently developed or disconnected from actors' practices (Peng, Wang & Jiang, 2008, p. 922; Meyer, Estrin, Bhaumik & Peng, 2009, p. 62). Tung (2016, p. 143) confirms that asymmetries between national and global labour markets constitute the principal tension in contemporary international HRM. This characterization is circumscribed to the technological career scripts domain and does not constitute a general judgment on Tunisian institutions (Hibou, 2011). Analogous configurations are documented in Morocco (Gassemi & Aniba, 2024, p. 43) and Nigeria (Raji, Adebisi & Onubugu, 2025, p. 85).

Confronted with insufficient local structures, Tunisian engineers operate simultaneously on two distinct structural levels: local structures as minimal foundation (Organisational commitment 3/5; Employer training 14/25) and global structures as compensatory resources (Self-training 31/61; Certification 9/14; Career opportunity perception 36/135). This *structural double-articulation* is absent from Giddens's original work for three reasons: textual (Giddens, 1987, p. 74: unique coherent environment), evolutionary (Giddens, 1990, p. 64: globalization not systematically integrated), and critical (Sewell Jr, 1992, p. 19 : transposability of schemas). This concept applies specifically to peripheral contexts with insufficient local institutionalization and is not expected in high institutional density environments (Peng, Wang & Jiang, 2008, p. 922; Tung, 2016, p. 144).

Ascendant Scriptation and Hybrid Career Scripts

Tunisian hybrid career scripts are characterized by two specific properties: *asymmetric*; imbalanced toward global resources (Self-training 31/61 vs. Organisational commitment 3/5); and *transitory*; co-occurrence of Continuous negotiation (4/7) and Going international (14/23) reveals their intermediate nature. The process of *ascendant*

scriptation; non-institutionalized individual practices progressively formalizing into explicit rules; enriches Barley and Tolbert's (1997, p. 100) recursivity by specifying its directional sense, conditions, and precursor role. Its structural condition; organizational size and international presence; constitutes an original empirical contribution (Tung, 2016, p. 144).

Contributions, Limitations and Perspectives

Theoretical Contributions

Central contribution: Structural double-articulation. Simultaneous mobilization of two distinct structural levels by peripheral agents (Peng, Wang & Jiang, 2008, p. 922; Tung, 2016, p. 143), documented across seven organizations and 44 interviews. Contextual extension of structuration theory applicable to peripheral contexts with insufficient local institutionalization.

Secondary contribution 1: Ascendant scriptation. Ascendant institutionalization process enriching Barley and Tolbert (1997, p. 100) by specifying directional sense and structural conditions.

Secondary contribution 2: Bridging organisational script and hybrid career script. Meso-level capture of the instrumental perception of the local organisation as strategic transit space; asymmetric and transitory micro-level hybrid scripts (Cappellen & Janssens, 2010, p. 695).

Secondary contribution 3: Institutional rupture career script. Deliberate abandonment of local structures in favor of a fully self-determined script, extending Valette and Culié (2015, p. 1748) to African emerging contexts (Mezghani & Chtara, 2025, p. 951).

Managerial and Policy Contributions

Recommendation 1: Reflexive recognition HRM. Formal competency recognition mechanisms aligned with international standards (Transparency 5/9; Mnasri & Ben Aissa, 2023, p. 55; Li, 2024, p. 1703).

Recommendation 2: Proactive institutionalisation of Y-shaped careers. The organic emergence of this device across most panel organisations attests to its adaptive effectiveness (Tung, 2016, p. 145).

Recommendation 3: Brain circulation structures. Transnational anchoring programs transforming international mobility into a retention asset (Mezghani & Chtara, 2025, p. 956; North, 1990, p. 3).

Limitations and Future Research

Four limitations structure the research perspectives: (1) *Contextual circumscription*: results are limited to Tunisia; comparative research in Morocco (Gassemi & Aniba, 2024) and Nigeria (Raji, Adebisi & Onubugu, 2025) is underway. (2) *Absence of longitudinal design*: ascendant scriptation is inferred from retrospective data. (3) *Gender asymmetry*: 8 women (18%) and 36 men (82%) reflecting sector composition

but limiting scope on female engineer trajectories (Valenduc, 2011, p. 6). (4) *Machine agency*: future research should examine Human-Organisation-AI triads (Fabri et al., 2023, p. 625).

Conclusions

This research demonstrates that the careers of Tunisian IT engineers constitute active constructions resulting from reflexive interaction between individual agency and institutional scripts. Digital transformation plays an ambivalent role: it amplifies agency by offering globalized power resources, while simultaneously accelerating competency evasion toward more enabling structural systems. The three propositions are empirically corroborated.

Four conceptual contributions enrich structuration theory: structural double-articulation, grounded in peripheral context asymmetries (Peng, Wang & Jiang, 2008; Tung, 2016); ascendant scriptation; the bridging organisational career script; and the institutional rupture career script. For Africa, Tunisia constitutes a mirror case whose dynamics potentially prefigure the technological retention challenges the continent will face in the coming decades, as suggested by structurally analogous configurations documented in Morocco (Gassemi & Aniba, 2024) and Nigeria (Raji, Adebisi & Onubugu, 2025).

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Appendix A — Complete Interview Summary

Total duration: 2,387 minutes. 8 women (18%), 36 men (82%). Source: authors' primary data.

Code	Org.	Sector	Position	Exp.	Duration	Mode	Gender
AF	D	Tech. consulting	Lead Tech.	8 yrs	52 min	In-person	M
KA	IM	Business Intell.	BI Developer	5 yrs	47 min	In-person	M
MBA	STM	Semiconductors	Country Manager	15 yrs	68 min	In-person	M
RB	W	Digital transform.	Project Manager	6 yrs	55 min	In-person	M
NJ	STM	Semiconductors	Resource Manager	11 yrs	61 min	Video	M
SJ	T	IoT / Embedded	HR Director	12 yrs	73 min	In-person	F
IBH	V	Banking software	Senior Developer	7 yrs	49 min	In-person	M
FT	V	Banking software	SI Architect	20 yrs	58 min	In-person	M
MA	St	Emb. engineering	Emb. Engineer	9 yrs	51 min	Video	M
HA	T	IoT / Embedded	Emb. Developer	4 yrs	44 min	In-person	M
SA	D	Tech. consulting	SI Consultant	6 yrs	50 min	Video	M
NK	IM	Business Intell.	Data Engineer	3 yrs	42 min	Video	F
MR	W	Digital transform.	Product Owner	8 yrs	57 min	In-person	M
YB	STM	Semiconductors	Test Engineer	7 yrs	53 min	In-person	M
FB	V	Banking software	HRD Manager	10 yrs	71 min	In-person	F
AS	T	IoT / Embedded	Country Mgr.	18 yrs	65 min	In-person	M

Code	Org.	Sector	Position	Exp.	Duration	Mode	Gender
LM	D	Tech. consulting	Full-stack Dev.	5 yrs	46 min	Video	F
CM	IM	Business Intell.	BI Analyst	4 yrs	43 min	Video	M
WA	W	Digital transform.	Scrum Master	7 yrs	54 min	In-person	M
OM	STM	Semiconductors	Process Eng.	9 yrs	56 min	In-person	M
BB	V	Banking software	Backend Dev.	3 yrs	41 min	Video	M
HK	St	Emb. engineering	Firmware Eng.	6 yrs	48 min	Video	M
KM	T	IoT / Embedded	Lead Developer	10 yrs	60 min	In-person	M
RM	D	Tech. consulting	CTO	14 yrs	70 min	In-person	M
ZN	IM	Business Intell.	Data Scientist	5 yrs	52 min	Video	F
AB	W	Digital transform.	UX Designer	4 yrs	45 min	Video	F
IB	STM	Semiconductors	R&D Engineer	8 yrs	57 min	In-person	M
MB	V	Banking software	Dep. HRD Mgr.	7 yrs	64 min	In-person	F
TB	St	Emb. engineering	Sys. Architect	12 yrs	62 min	Video	M
SB	T	IoT / Embedded	Validation Eng.	5 yrs	47 min	In-person	M
AK	D	Tech. consulting	Mobile Dev.	3 yrs	40 min	Video	M
NK2	IM	Business Intell.	BI Manager	9 yrs	59 min	In-person	M
WH	W	Digital transform.	Tech. Director	16 yrs	75 min	In-person	M
ES	STM	Semiconductors	Quality Eng.	6 yrs	50 min	In-person	F

Code	Org.	Sector	Position	Exp.	Duration	Mode	Gender
OB	V	Banking software	Frontend Dev.	4 yrs	44 min	Video	M
KH	St	Emb. engineering	FPGA Engineer	7 yrs	53 min	Video	M
AM	T	IoT / Embedded	Team Lead	11 yrs	61 min	In-person	M
RH	D	Tech. consulting	Security Eng.	5 yrs	49 min	Video	M
FM	IM	Business Intell.	ETL Engineer	6 yrs	51 min	Video	M
OZ	W	Digital transform.	Cloud Architect	8 yrs	57 min	In-person	M
HB	STM	Semiconductors	Application Eng.	10 yrs	60 min	In-person	M
WB	V	Banking software	Java Developer	3 yrs	42 min	Video	M
MK	T	IoT / Embedded	Test Engineer	4 yrs	43 min	Video	M
RN	D	Tech. consulting	Project Manager	13 yrs	67 min	In-person	M

Appendix B — NVivo 12 Codebook: Five Analytical Themes

Source: NVivo 12 thematic meta-inference (Miles, Huberman & Saldaña, 2014, p. 86). Files/Ref. = source files / coded references.

Theme	NVivo 12 Node	Proposition	Files	Ref.
T1 — Agency Resources	Self-training	P1	**31**	**61**
	Technical knowledge deepening and monitoring	P1	**5**	**6**
	Certification	P1	**9**	**14**
	Professional and technological mastery	P1	**4**	**4**
	Personality traits	P1	**7**	**8**
T2 — Hybrid Negotiation Career Scripts	Continuous negotiation	P2	**4**	**7**
	Communication with hierarchy	P2	**16**	**27**
	Modification actions — Transformation	P2	**31**	**51**
	Proactive action	P2	**30**	**77**
	Internal mobility	P2	**12**	**15**
T3 — Ad Hoc Career Scripts and Mobility	Going international	P3	**14**	**23**
	Leaving for another organisation	P3	**14**	**22**
	Expatriation	P3	**7**	**8**
	Changing profession	P3	**5**	**6**
	Honouring commitments	P3	**7**	**7**
T4 — Structural Perceptions	Career opportunity perception	P1+P2+P3	**36**	**135**
	Career opportunity identification	P1+P2+P3	**30**	**80**
	Constraint identification	P1+P2+P3	**22**	**55**

Theme	NVivo 12 Node	Proposition	Files	Ref.
	Rule perception linked to opportunities	P1+P2+P3	**29**	**64**
	Promotion criteria	P1+P2+P3	**1**	**1**
T5 — Adaptive Organisational Responses	Employer training	P2 meso	**14**	**25**
	Doing one's job / honouring commitments	P2 meso	**19**	**32**
	Organisational commitment	P2 meso	**3**	**5**
	Involvement	P2 meso	**2**	**4**
	Networking	P2 meso	**3**	**4**
	Transparency	P2 meso	**5**	**9**

Source: authors' primary data — QSR International (2020).

De la conscience écologique au positionnement stratégique durable : le rôle du comportement pro-environnemental dans le marketing hôtelier Tunisien

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From ecological awareness to pro-environmental behavior of professionals in the tourism and hospitality sector in Tunisia: challenges and issues

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Résumé :

Le bien-être que l'humanité a atteint grâce à la science et à la technologie s'est transformé en mal-être croissant, la succession des dommages écologiques a eu pour corollaire une prise de conscience mondiale de la dégradation grandissante de la qualité environnementale actuelle. Face à cette urgence écologique mondiale et à la montée en puissance des exigences environnementales dans le secteur touristique, la question du comportement pro-environnemental des acteurs hôteliers s'impose comme un enjeu stratégique majeur. Cette recherche qualitative, menée auprès de 16 directeurs d'hôtels tunisiens à travers des entretiens semi-directifs, explore le processus par lequel la conscience écologique des dirigeants se transforme en comportements pro-environnementaux, puis en positionnement stratégique durable et en démarche de marketing hôtelier éco-responsable.

Notre cadre théorique mobilise trois ancrages complémentaires. La théorie Valeur-Croyance-Norme (VBN) de Stern (2000) permet d'analyser la chaîne causale interne qui mène des valeurs biosphériques du dirigeant à ses normes personnelles d'action. La Stakeholder Theory de Freeman (1984) éclaire les pressions exercées par les parties prenantes (clients, tour-opérateurs, régulateurs) sur l'orientation stratégique des établissements. Enfin, les théories du marketing vert (Peattie, 2001 ; Ottman, 2011) et du positionnement durable (Porter, 1985 ; Han & Kim, 2010) permettent d'analyser comment les comportements pro-environnementaux se traduisent en proposition de valeur différenciante sur le marché.

Nos résultats mettent en lumière un hiatus persistant entre une conscience écologique réelle et une maturité marketing encore émergente, caractérisée par une sous-communication des pratiques vertueuses et une tension stratégique entre marchés international et local.

Cette recherche contribue à la littérature en proposant un modèle intégrateur en trois stades — conscience écologique, comportements pro-environnementaux, positionnement stratégique durable — et en documentant les spécificités du contexte hôtelier tunisien, économie méditerranéenne émergente confrontée à une double pression de durabilité : celle des tour-opérateurs européens et celle d'une clientèle locale en mutation. Des pistes de recherche futures sont proposées autour du marketing hôtelier vert numérique et de la construction d'une image de marque durable dans les marchés du Sud.

Mots-clés : conscience écologique, comportement pro-environnemental, positionnement stratégique durable, marketing hôtelier vert, théorie VBN, Stakeholder Theory, hôtellerie tunisienne, tourisme durable.

Abstract:

Against the backdrop of the global ecological crisis and growing environmental requirements in the tourism sector, the pro-environmental behavior of hotel managers has emerged as a major strategic issue. This qualitative study, conducted through 16 semi-structured interviews with Tunisian hotel directors, explores the process by which managers' ecological consciousness

translates into pro-environmental behaviors, and subsequently into sustainable strategic positioning and eco-responsible hotel marketing practices.

The theoretical framework draws on three complementary anchors. The Value-Belief-Norm (VBN) theory of Stern (2000) is used to analyze the internal causal chain linking a manager's biospheric values to personal action norms. Freeman's Stakeholder Theory (1984) sheds light on the pressures exerted by stakeholders — guests, tour operators, and regulators — on the strategic orientation of hotel establishments. Finally, green marketing theory (Peattie, 2001; Ottman, 2011) and sustainable positioning frameworks (Porter, 1985; Han & Kim, 2010) provide the analytical lens through which pro-environmental behaviors are examined as sources of differentiating value propositions in the marketplace.

The findings highlight a persistent gap between genuine ecological awareness and an emerging marketing maturity, characterized by under-communication of green practices and a strategic tension between international and domestic market expectations.

This research contributes to the literature by proposing an integrative three-stage model — ecological consciousness, pro-environmental behaviors, sustainable strategic positioning — and by documenting the specificities of the Tunisian hotel sector as an emerging Mediterranean economy facing a dual sustainability pressure : the demands of European tour operators on one side, and a shifting domestic clientele on the other. Avenues for future research are proposed around digital green hotel marketing and sustainable brand-building in Southern markets.

Keywords : ecological consciousness, pro-environmental behavior, sustainable strategic positioning, green hotel marketing, VBN theory, Stakeholder Theory, Tunisian hospitality, sustainable tourism.

Introduction :

Le concept des Objectifs du Développement Durable ‘ODD’ a été annoncé pour la première fois en 2012 lors de la conférence des Nations Unies « Rio+20 » qui s’est tenue au Brésil pour célébrer le 20 ème anniversaire du sommet de la terre de 1992 précédé par celui de Stockholm en 1972. Ces sommets ont marqué un tournant majeur illustrant un consensus sur l’urgence et la nécessité d’entreprendre des actions de développement durable dans tous les secteurs et à travers le monde entier. Toutefois, malgré cette prise de conscience, nos actions ne suivent pas et tardent à se montrer effectives (Langevin-Boucher, 2025). Le Global Foot print Network (2024) a évalué que le Jour du dépassement de la Terre en 2024 était le 1er août. Cela signifie que cette date marque le jour de l’année où toutes les ressources naturelles que la planète peut renouveler annuellement sont épuisées. On déduit alors qu’on est dans une phase critique et nous sommes entrés « *en déficit écologique en puisant dans les réserves de ressources et en accumulant du CO_2 dans l’atmosphère à une vitesse que la Terre ne peut pas renouveler* » (Lee, 2024). L’organisation mondiale du tourisme (OMT), quant à elle, s’est engagé depuis des décennies dans un processus de sensibilisation et d’encouragement vers un tourisme durable et éco-responsable. L’ONU-Tourisme annonce en 2024 que le secteur du tourisme et des voyages représente 10% du PIB mondial de 2023, étant donné que les services accaparent 63% du PIB mondial, et ce après sa remise progressive suite à la pandémie du Covid-19, un chiffre crucial puisque cette contribution au PIB mondial dépasse celle de l’industrie automobile ou l’industrie

pétrolière. En termes d'emplois, le tourisme contribue à hauteur de 9% à l'emploi au monde ce qui représente 274 millions d'emplois. De ce fait, les intervenants de l'industrie du tourisme sont de plus en plus conscients de la prise en compte des objectifs du développement durable, car en soi l'environnement est un facteur d'attraction touristique fondamental. Ce qui nous mène à déduire que le tourisme et bien précisément les intervenants en tourisme jouent un rôle crucial dans la promotion de ces ODD et le développement d'un tourisme durable et éco-responsable. L'engouement de la Tunisie pour ces enjeux écologiques est tout aussi important comme la majorité des autres pays avec sa stratégie nationale de transition écologique, assurée en partenariat avec le Programme des Nations Unies pour le Développement. Sous l'égide d'un réseau interministériel, cette stratégie intègre principalement les objectifs de la Stratégie nationale de développement durable 2014-2020, ceux du Plan national de développement 2023-2025 et de la Vision Tunisie 2035. Tous ces programmes nationaux attestent que le secteur du tourisme est parmi les secteurs les plus affectés par ces enjeux écologiques et que le ministère du tourisme est considéré parmi les acteurs essentiels avec sa stratégie 'Tourisme durable et alternatif 2035' qui s'appuie sur des mesures importantes comme la lutte contre la pollution, la préservation du capital plage et la protection des écosystèmes, éléments indispensables au développement de l'écotourisme durable.

Partant de ce constat, cette recherche s'attache à explorer les dimensions de la conscience écologique chez les professionnels du tourisme et de l'hôtellerie. Elle vise à comprendre comment ces dimensions se traduisent dans leurs comportements pro-environnemental ainsi que les enjeux relevés et les défis rencontrés. Raison pour laquelle nous optons pour une recherche qualitative avec 16 entretiens semi-directifs menés avec des propriétaires-dirigeants et des directeurs d'hôtels. Ce choix est également motivé par notre intérêt de comprendre les difficultés des professionnels à intégrer les thématiques environnementales dans leurs plans d'action (BPI France, 2020).

Pour ce faire, nous allons puiser dans une littérature diversifiée afin de mettre la lumière sur les concepts clés de notre recherche.

1.Revue de la littérature :

1.1. La conscience écologique :

La notion de conscience écologique a vu le jour suite aux alertes lancées par les écologistes (Dunlap et al., 2000 ; Beck, 1999) qui annoncent que la résolution des problèmes environnementaux est influencée par l'association de la préoccupation de la destruction de l'environnement à la notion de conscience écologique (Ayedi et Kammoun, 2020). Au début des années 70, Riley Dunlap met en lumière le paradigme écologique qui repose sur le basculement des valeurs axée sur l'être humain vers un processus axé sur l'environnement. Ce paradigme est considéré comme une sorte de révolution copernicienne dans les attitudes et les comportements (Bozonnet, 2007).

La conscience est souvent examinée comme la première étape dans le processus de changement de comportement (Bamberg, 2013 ; Prochaska et al., 1992 ; Roehlkepartain, 2001). Elle présente un socle primordial pour comprendre les enjeux, mobiliser les individus et les inciter à agir en conséquence (Langevin-Boucher, 2025). Pour faire référence à la conscience liée à l'environnement, certains chercheurs utilisent l'appellation « conscience environnementale », d'autres « la conscience écologique » ou encore « l'éco-conscience ».

La définition de (Stone et al., 1995) résume la conscience écologique « en *une action ou en un engagement dans certains types de comportements écologiques* ». Quant à (Diamantopoulos et al., 2003) « *la conscience écologique désigne la résultante d'une impulsion naturelle de l'Homme pour son auto-préservation* ». (Kang et James, 2007) rejoignent leurs prédécesseurs et définissent la conscience écologique comme « *une forme d'orientation sociale visant à préserver le bien-être de l'individu et de la société à travers la réduction des conséquences négatives liées au produit* ».

Au vue de ces différentes définitions exposées, nous concluons qu'un bon nombre de recherches présente la conscience écologique en tant que processus continu commençant par la culture et les croyances allant de l'attitude pro-environnementale jusqu'aux comportements ou agissements visant à préserver l'environnement et réduire.

Schéma N° 1 : **Le processus de la conscience écologique**

Culture

Comportement **Attitude**

Source : Auteur

1.2. Comprendre et mesurer le comportement pro-environnemental :

Durant la dernière décennie la littérature se trouve abondante sur les comportements pro-environnementaux en réponse aux menaces de la dégradation environnementale et climatique (Nalau et Verrall, 2021 ; Ripple et al., 2022). Ce concept revêt plusieurs aspects à savoir le

transport durable, le recyclage et déchets, énergie, la déforestation etc (Rais, F., et Berrada, A. 2022). Une définition plus large de ce concept stipule qu'il englobe toutes les démarches, œuvres et activités qui sont déployées dans le but de préserver la nature ou restreindre et diminuer l'impact négatif causé par l'activité humaine (Cottrell, 2003). Même si le concept est axé sur l'environnement on parle toujours de comportement humain qui est souvent endoctriné par deux catégories de facteurs, à savoir internes et externes (Aarts et Dijksterhuis,2003). Les facteurs internes selon (Kollmuss, A. et Agyeman, J., 2002) comportent les valeurs, les croyances, les émotions et les attitudes. Les attitudes et comportements environnementaux font partie des facteurs internes car ils sont étroitement liés aux valeurs de l'individu (Dunlap,et al., 1983 ; Karp, 1996 ; Schultz et Zelezny, 1999). Concernant les facteurs externes (Aarts et Dijksterhuis, 2003) annoncent qu'ils comprennent les normes sociales et culturelles et c'est surtout les contextes dans lesquelles les individus font des choix et prennent des décisions.

Nombreuses sont les études qui mettent en évidence la contribution qu'apporte les valeurs dans l'explication des différents comportements et attitudes environnementale à l'instar des recherches de (Rokeach, 1973) et (Schwartz,1992). Ces recherches ont mis en lumière l'impact que les valeurs ont sur les comportements pro-environnementaux (Stern, et al., 1995 ; Schultz et Zelezny, 1999 ; Rais, F., et Berrada, A. 2022).

Pour la mesure du comportement pro-environnementale on va se baser sur une revue systématique sur l'évaluation des comportements pro-environnementaux effectuée par (Lange et Dewitte, 2019) dans laquelle ils ont présenté trois techniques : mesures d'auto-évaluation, observations sur le terrain et les observations en laboratoire. Dans la première technique de mesure les participants rapportent eux-mêmes leurs comportements au quotidien via des questionnaire en ligne ou des interviews. Cette technique d'auto-évaluation s'avère peu onéreuse mais assortie de plusieurs limites tel que l'objectivité des répondants qui peut être facilement compromise car ils peuvent reporter ceux qu'ils aimeraient faire ou ce qu'on attend d'eux comme actions, ce qu'ils aspirent être ou faire (Lange et Dewitte, 2019). Entre autres, c'est pour remédier à cette limite d'objectivité qu'existe la deuxième technique : l'observation terrain à travers laquelle on fait appel à des observateurs ou à des outils de mesures. Cette technique n'est pas exempte de limite qui se présente sous les aspects de coût, de temps et de contrôle sur les variables expérimentales (Lange et Dewitte, 2019). Pour pallier à ces limites les auteurs nous introduisent les observations en laboratoire dans la mesure ou le chercheur ou l'expérimentateur a la possibilité d'observer des comportements précis et contrôler d'avantages les conditions de l'étude. D'après (Lange, 2023) la technique de mesure par l'auto-évaluation reste la plus utilisées malgré ses limites et l'existence des autres techniques de mesures

Figure 1 : Facteurs explicatifs du comportement pro-environnemental

Source : Rais, F., & Berrada, A. 2022

1.3 : Champ Notionnel :

En préparant cette revue de la littérature, on s'est rendu compte que la recherche documentaire peut parfois porter à équivoque en raison des liens sémantiques entre plusieurs notions qui gravitent autour de nos concepts généraux. D'où la nécessité de les délimiter et expliciter clairement.

Intention pro-environnementale :

L'intention comportementale exprime les motivations, les buts et les aspirations d'une personne. Souvent jugée en tant que facteur prédicteur important du comportement (Ajzen,

1991). L'intention pro-environnementale est présentée par (Marleau, 2010) *« comme étant la volonté consciente et dirigée à accomplir des gestes en faveur de l'environnement, elle oriente et dirige les comportements dans ce sens* ».

Émotions écologiques :

Aussi désignées « éco-émotions » ou « émotions climatiques », ce sont les émotions et affects liés à l'environnement qui se réfèrent aux sentiments éprouvés en réponse aux changements environnementaux et aux problèmes écologiques, tels que la déforestation, la perte de biodiversité et d'autres formes de dégradation de l'environnement (Pihkala, 2020 la conscientisation de cette situation de crise planétaire peut provoquer plusieurs types d'émotions, on parle « *d'éco-anxiété* », « *éco-culpabilité* », « *solastalgie* » et même de « *terrafurie* » (Albrecht et al., 2007 ; Champagne St-Arnaud et al., 2023 ; Pihkala, 2022).

Identité environnementale :

L'identité environnementale renvoie à la croyance que l'environnement est crucial à notre existence. Cette identité se traduit par un sentiment d'appartenance et un sentiment de connexion avec la nature qui se trouvent ancré dans l'histoire personnelle et les valeurs individuelles (Gelsthorpe, 2017 ; Popescu, 2022). Ce concept d'identité environnementale peut aussi inclure le phénomène de « *topophilie* » qui renvoi à l'attachement émotionnel, cognitif et comportemental à un lieu spécifique auquel on s'identifie (Clayton et al., 2016 ; Garcia-Fontan, 2022 ; Scannell et Gifford, 2010).

Valeurs & Normes environnementales :

Deux approches des valeurs environnementales existent dans la littérature. Dans la première il est question des valeurs « *éco-centriques* » qui favorisent le respect de la nature. La deuxième approche présente des valeurs « *anthropocentriques* » privilégiant une vision utilitaire considérant la nature comme un ensemble de bénéfices pratiques et exploitables. (Fondation David Suzuki, 2012 ; Jones et al., 2016).

Attitudes pro-environnementales :

Selon (Bozonnet, 2007) l'attitude pro-environnementale est l'aboutissement logique de la conscience écologique.

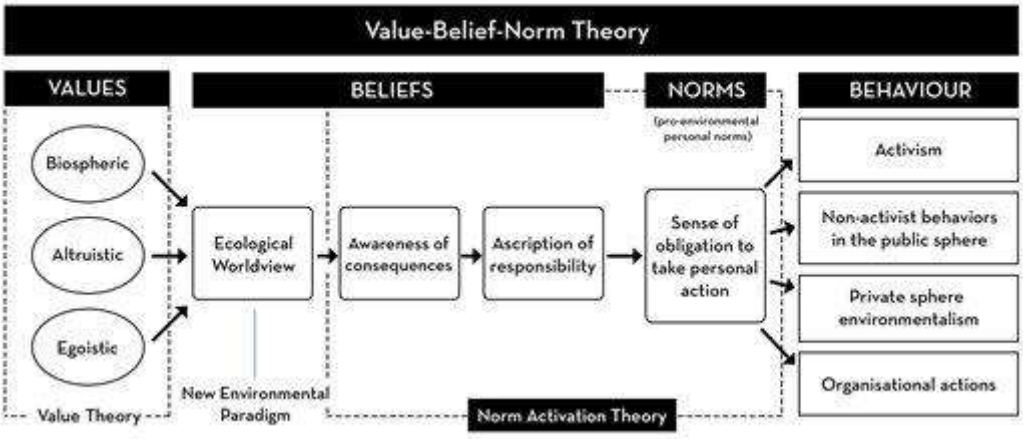
1.4. La théorie Valeur-Croyance-Normes de Stern (2000) comme théorie explicative du comportement pro-environnemental :

Trois grandes théories sont couramment utilisées pour analyser et expliquer les comportements dans le contexte du tourisme à savoir : la théorie d'attribution d'Heider (1958), la théorie du comportement planifié d'Ajzen (1985), et la théorie Valeur-Croyance-Normes de Stern (2000) Le point commun entre ces 3 théories c'est qu'elles démontrent la liaison entre valeurs, croyances, attitudes, tout en mettant en exergue les normes qui motivent et activent le comportement pro-environnemental.

Dans notre recherche on va examiner le concept de comportement pro-environnemental à la lumière de la théorie « Valeur-Croyance-Norme » (VBN) de Stern (2000), théorie qualifiée de théorie syncrétique, puisqu'elle se positionne à la charnière de la psychologie et de la sociologie (Bozonnet, 2007). Cette théorie postule que les comportements pro-environnementaux sont influencés par une chaine causale qui se présente ainsi : les valeurs influencent les croyances, ces dernières façonnent les normes qui à leur tour déterminent les comportements. Cette théorie

est importante dans la mesure où elle offre un cadre pour mieux cerner et comprendre les facteurs psychologiques qui motivent le comportement pro-environnemental. Selon cette théorie, les individus qui possèdent des valeurs altruistes ou biosphériques, qui ont conscience de l'importance de l'environnement et qui développent un sentiment de responsabilité envers l'environnement sont ceux qui adoptent des comportements pro-environnementaux (Stern, 2000).

Figure N° 2 : Le model de la théorie Value-Beliefs-Norm



Source : Stern 2000 VBN theory

Schéma N°2 : Le schéma synthétique de notre recherche

De la conscience écologique à la démarche Marketing avec un positionnement stratégique

Source : auteur

1.5. Le positionnement stratégique durable : du management à la démarche marketing

Le positionnement stratégique constitue, au sens de Porter (1985), la décision préméditée d'une position concurrentielle différenciatrice sur un marché cible. Appliqué à la durabilité, ce concept désigne le choix d'une entreprise de structurer ses engagements environnementaux et sociaux en axe de distinction visible et valorisable auprès de ses parties prenantes. Kotler et al. (2019) précisent que le positionnement durable ne se borne pas à une promesse de marque : il engage une adéquation structurelle entre les valeurs internes et le comportement du dirigeant, les pratiques opérationnelles de l'entreprise et la communication marketing adressé au marché.

Dans le secteur hôtelier, Mihalič (2000) a démontré que la qualité environnementale constitue un pilier de la compétitivité touristique : les destinations et les établissements qui protègent leur capital naturel et mettent en avant cet engagement jouissent d'un avantage concurrentiel durable. Bohdanowicz (2005) nous a présenter une étude auprès de 2 000 hôteliers européens révèle que les directeurs pourvus d'une forte conscience écologique tendent à insérer les pratiques environnementales dans leur stratégie d'offre, et non uniquement dans leur gestion opérationnelle. C'est précisément ce passage crucial de la simple gestion à la stratégie qui fonde le seuil du positionnement durable.

La théorie des parties prenantes de Freeman (1984) apporte un éclairage complémentaire indispensable. Freeman conceptualise et stucture l'entreprise comme le nœud d'un réseau d'acteurs : clients, investisseurs, régulateurs, fournisseurs, communautés locales, dont chacun exerce une pression légitime sur les décisions stratégiques. Dans le contexte hôtelier tunisien, cette approche prend une acuité particulière : les tour-opérateurs européens, en tant que parties prenantes dominantes sur le plan commercial, exigent des critères de durabilité croissants dans leurs grilles de référencement, d'autre part les plateformes numériques de réservation intensifient la visibilité des engagements écologiques auprès des clients finaux. Dans ce sens, le positionnement stratégique durable ne résulte plus uniquement de la conviction interne : il découle de la rencontre entre la conscience écologique du dirigeant et les pressions exercées par ses parties prenantes, conformément au cadre théorique de Freeman.

Il est judicieux de faire également la distinction entre positionnement authentique et positionnement cosmétique. Walker et Wan (2012) ont formalisé le concept de greenwashing qui se présente comme la communication d'engagements environnementaux non étayés par des pratiques réelles et qu'il considérent comme l'un des risques majeurs du marketing vert. Ces auteurs stipulent que le greenwashing, loin de renforcer l'image de marque, provoque une défiance durable de la part des consommateurs éco-sensibles et expose l'organisation à des sanctions réputationnelles. Dans le contexte de notre recherche, ce risque est d'autant plus pertinent que la conscience écologique des dirigeants, car il conditionne directement l'authenticité du positionnement affiché.

1.6. Le marketing hôtelier vert : pratiques, outils et spécificités du contexte tunisien

Selon Peattie (2001) « *le marketing vert désigne l'ensemble des activités marketing qui visent à faciliter les échanges satisfaisant les objectifs des individus et des organisations tout en minimisant les impacts environnementaux négatifs* ». Ottman (2011) enrichit cette définition en mettant l'accent sur l'importance d'un alignement sincère entre les valeurs de l'entreprise, ses pratiques et sa communication : « triptyque authenticité-transparence-engagement ». Dans le secteur de l'hôtellerie, ce triptyque se traduit en trois leviers primordiaux : la labellisation environnementale, la communication RSE et la conception d'une offre expérientielle éco-responsable.

La labellisation représente le premier levier du marketing hôtelier vert. Han et Kim (2010) ont présenté à partir d'une étude faite auprès de 379 clients d'hôtels verts, l'effet significatif que la détention d'une certification environnementale reconnue tel que : Green Globe, ISO 14001, Clef Verte, exerce sur l'intention de séjour et sur la propension à payer un prix premium.

D'ailleurs, cet effet significatif a été confirmé par Berezan et al. (2013) qui stipule que les pratiques durables certifiées améliorent la satisfaction client et la fidélisation, particulièrement auprès des clientèles nord-européennes : une donnée de référence et structurante pour le secteur hôtelier tunisien fortement dépendant de ce marché.

Quant au second levier fondé sur la communication RSE, vise à bâtir une image de marque ancrée dans des valeurs partagées avec le client. Toutefois, cette approche est exposée au paradoxe identifié par Walker et Wan (2012) : une communication RSE affichée non étayée et sans pratiques sous-jacentes solides provoque l'effet Boomerang.

Le troisième levier repose sur la conception d'une offre expérientielle éco-responsable. La littérature sur le tourisme durable (Buckley, 2012 ; Butler, 1999) montre que les clientèles éco-sensibles sont à la recherche d'une expérience de séjour unique qui donne à voir et à vivre la durabilité et non seulement des pratiques vertueuses. D'ailleurs pour le secteur hôtelier tunisiens, cette dimension offre des perspectives spécifiques liées au patrimoine naturel et culturel du pays, tel que : l'intégration des produits locaux dans la restauration, la valorisation des artisans locaux, la conception de circuits écotouristiques à thème, constituant ainsi des offres différenciantes qui relèvent autant du marketing que de la responsabilité sociale.

La Tunisie présente un contexte particulièrement adéquat à l'étude de ces dynamiques. D'un côté, la Stratégie Tourisme Durable et Alternatif 2035 du ministère du tourisme et la Vision Tunisie 2035 intègrent la durabilité au cœur des lignes de conduite sectorielles nationales. De l'autre côté, la structure du marché touristique tunisien marqué par la dominance des flux en provenance d'Europe occidentale, sensibles aux certifications environnementales génère une pression de marché pour l'adoption de pratiques et de positionnements verts. Toutefois, en l'absence de labels tunisiens reconnus sur les marchés internationaux, le coût perçu des certifications et la maturité encore émergente du marketing vert dans la culture managériale hôtelière locale constituent des freins structurels que notre recherche qualitative vise précisément à explorer et à documenter.

2.Méthodologie de recherche :

2.1 : Démarche méthodologique :

Notre stratégie d'accès au réel repose sur une démarche qualitative inductive, ce choix se justifie par la nature du thème de la conscience écologique, par l'objectif visé par la recherche, qui d'ailleurs nécessite une étude en profondeur de la thématique. Ce choix de méthode nous a servi à explorer le processus de conscience écologique de ces professionnels, de savoir comment ce processus se concrétise par des comportement pro-environnementaux et découvrir ses défis et ses enjeux.

2.2 : Technique de recherche :

Comme technique de collecte de données, le choix s'est porté vers l'observation non participante et l'entretien semi-directif. En premier lieu, on a commencé par l'observation non participante, une technique d'investigation qui nous a servi à apprécier de près les concepts en

vue de faire un prélèvement qualitatif pour comprendre la culture, les croyances, les attitudes et les comportements des sujets observés et partager le quotidien des professionnels, sujets de notre étude. Notant qu'on a évité la pratique de l'observation participante malgré qu'elle confère une immersion totale dans le terrain d'étude, par crainte de biais de recherche d'inclure des aspects subjectifs et intersubjectifs dans la recherche. D'ailleurs c'est la première critique qu'on peut associer à la posture de participation observante (O'Reilly et al., 2009). Quant aux entretiens semi-directifs, ils ont pris la forme de discussions approfondies avec les professionnels du secteur tel que des propriétaires dirigeants et des directeurs opérationnels d'hôtels en Tunisie sur deux zones touristiques à savoir : Hammamet et Gammarth. Il s'agit d'une approche pertinente qui nous a permis d'explorer des questions complexes portant sur les thèmes de notre recherche afin de développer une compréhension approfondie de nos concepts ainsi que de ce contexte spécifique. Pour se faire, il a été question de la conception d'un guide d'entretien qui est constitué essentiellement de trois (4) thèmes et axes majeurs à savoir :

- Le processus de conscience écologique
- Le passage aux comportements pro-environnementaux
- Les défis et enjeux de la dimensions écologique en Tourisme & Hôtellerie
- Le marketing hôtelier vert et le positionnement stratégique durable

En troisième lieu on a procédé à une comparaison multisite (Huberman & Miles, 1991) permettant de découvrir des convergences et les points communs entre les sites retenus. Cette technique nous a permis de mieux comprendre comment le contexte influence le concept étudié et d'identifier les facteurs contextuels qui peuvent expliquer les différences observées. D'ailleurs la comparaison multisite nous a permis d'identifier des schémas ou des tendances qui se manifeste d'une manière cohérente à travers les différents hôtels observés.

2.3 : Analyse thématique du contenu des entretiens :

Pour traiter les données issues des techniques précédemment citées, nous avons utilisé le logiciel « Nvivo 12 ». Ce logiciel nous a facilité l'analyse thématique de contenu, tout en nous permettant de faire le calcul de fréquence d'apparition des thèmes, la construction d'un système causal et compréhensif du processus de la conscience écologique étudiés, et la facilité d'accès aux extraits d'entretiens et aux verbatims pour au final pouvoir comprendre les concepts étudiés.

3. Résultats & Discussion :

Dans cette section de notre recherche on va présenter et discuter les résultats obtenus suite au traitement des données avec le logiciel NVIVO 12, ainsi que les observations recueillis sur terrain suite à la pratique de deux types d'observation à savoir : l'observation à découvert avec les directeurs d'hôtel et l'observation incognito avec le reste du personnel employé.

3.1 : L'analyse lexicale et thématique du contenu :

3.1.1 : Thème 1 : Le processus de conscience écologique

Nous allons explorer le processus de conscience écologique chez les professionnels du tourisme avec les sous-thème suivants : (la culture & croyance), (les valeurs & normes écologiques) et (l'attitude écologique).

Résultats et Analyse :

Les interviewés sont à l'unanimité conscients (42 occurrences) des problèmes environnementaux (29 occurrences) et de l'urgence mondiale (29 occurrences) à entreprendre et à déployer des actions pour pallier aux impacts négatifs (27 occurrences) causés par la

pollution (16 occurrences) de la faune et de la flore, la déforestation (12 occurrences) et surtout sensibiliser les entreprises à réduire leurs empreintes carbone (16 occurrences).

Ils confirment que cette responsabilité partagée (14 occurrences) ne représente pas une option morale mais plutôt une nécessité collective (10 occurrences). C'est le fait d'être conscient que chaque geste, chaque choix de consommation, de production ou même de communication a un impact négatif (18 occurrences) où positif sur l'environnement.

Verbatim Interviewé n°13 : « *si je résume ce que je viens de vous dire je dirai que la conscience écologique est un état d'esprit, une mentalité et une culture qui se traduit par une attitude qui guide nos décisions »*

Verbatim Interviewé n° 7 : *« De nos jours même nos clients deviennent des clients engagés dans cette cause, et ces convictions et croyances font la différence, et nous poussent même à remodeler notre offre ».*

Par rapport à la stratégie nationale déployée dans cet axe peu de responsables connaissent les dispositifs et les mesures planifiés même dans la stratégie Tourisme 2035 et portent peu d'intérêt à le savoir. Ils stipulent que les stratégies sont rédigées loin des contraintes du terrain réel et incohérentes au quotidien opérationnel des responsables.

Verbatim Interviewé n°1 : *« Ces stratégies sont écrites pour suivre les tendances mondiales »*

3.1.2 : Thème 2 : Le comportement pro-environnemental

L'étude de ce deuxième thème est consacrée à l'exploration et la découverte de la gestion responsable des directeurs d'hôtels.

Résultats et Analyse :

Les comportements pro-environnementaux des directeurs et responsables d'hôtel se traduisent à plusieurs niveaux qui commencent par le niveau opérationnel au quotidien tel que la gestion écologique de l'énergie (29 occurrences) avec les détecteurs de présence (16 occurrences) pour l'éclairage et les régulateurs de températures (16 occurrences), cette gestion énergétique peut également être suivie et contrôlée via des logiciels adaptés (5 occurrences). Quant à la gestion des eaux (18 occurrences) la majorité des interviewés confirment avoir des systèmes de réducteurs d'eau (16 occurrences) tandis que 3 directeurs seulement confirme avoir investi dans un système de récupération des eaux grises (10 occurrences) et cela est expliqué par le coût onéreux (16 occurrences) de cet investissement.

Verbatim Interviewé n°2 : *« la gestion écologique et durable de l'énergie et de l'eau est devenue une pratique naturelle, disons une pratique évidente même chez les promoteurs lors de la construction des locaux »*

Le second niveau est en relation avec la gestion écologique et responsable des produits et des déchets qui se manifeste en premier lieu dans la suppression du plastique à usage unique (22 occurrences) qui figure certes dans les pratiques écologiques (37 occurrences) mais revêt également une finalité économique. A l'opposé de ce qui précède, le recours aux produits d'entretien écologique (2 occurrences) n'a été cité que par 2 interviewés tous comme le tri sélectif des déchets (4 occurrences) car ces deux pratiques génèrent des coûts supplémentaires aux hôtels.

Verbatim Interviewé n°9 : *« du moment ou ça s'aligne avec notre stratégie de compression des charges on adopte, à défaut là ça bloque »*

Le troisième niveau est en relation avec la formation et la qualification du personnel (23 occurrences) qui selon la majorité des professionnels interviewés est quasi inexistante et qu'ils remplacerait plutôt par l'incitation du personnel à adopter des comportements pro-environnementaux (18 occurrences) au quotidien en plus d'un accompagnement informel sur les écogestes (17 occurrences) et le management environnemental (9 occurrences) malgré la prise de conscience générale de l'urgence environnementale.

Verbatim Interviewé n°14 : *« on n'a pas le temps ni le budget pour former sur cet axe mais on est là en tant que coach et observateur pour y remédier »*

Le comportement pro-environnemental des directeurs d'hôtel oscille entre conscience, conviction et pragmatisme économique. Certains interviewés mettent l'accent sur ce hiatus entre discours ambitieux, promesses solennelles et les plans d'actions et pratiques qui suivent. D'autre part, certains suggèrent la lecture suivante : la réduction de l'écart entre le quasi-consensus des attitudes pro-environnementales et leur faible mise en pratique incombe en grande partie aux pouvoirs publics. Ces derniers disposent d'une panoplie de moyens d'actions entre autres contre les individus et organisations anomiques, bien tentés par le free-ride, mais ils se retiendront par crainte de sanction.

Dans le même sens, des directeurs interviewés ont cité des exemples récents de politiques publiques illustrant l'importance de la légitimité, comme une condition préalable pour l'acceptabilité d'une action, tel que les campagnes anti-tabac et celle de la sécurité routière en France qui ont connu le succès, car de nouvelles valeurs avaient été solidement installées dans l'opinion et dans le quotidien des individus.

3.1.3 : Thème 3 : Les défis de la dimension écologique en Tourisme & Hôtellerie en Tunisie :

Malgré la conscience (25 occurrences) de l'importance des pratiques écologiques (21 occurrences) plusieurs obstacles (49 occurrences) freinent l'adoption complète de comportements pro-environnementaux. La majorité des interviewés relèvent qu'aucun individu ne fonctionne seul et n'est responsable de tout son environnement. Car on vit dans une société et dans un certain cadre comprenant plusieurs intervenants essentiels tel que le role des pouvoirs publics (33 occurrences). L'intervention de l'Etat (35 occurrences) revient à maintes reprises dans cette analyse mettant l'accent sur son rôle structurel et informationnel.

Leur action ne se limite pas à un rôle réglementaire et normatif (16 occurrences) mais plutôt à la mise en place de politiques d'incitation, de sensibilisation et de valorisation des pratiques durables (11 occurrences). L'Etat doit également se pencher sur des politiques incitatives financières et économiques (19 occurrences) afin de réduire la perception du cout initial élevé souvent évoqué par les directeurs d'hôtels comme freins à la démarche écologique. Ces incitations peuvent prendre la forme de subventions et aides pour les rénovations énergétiques et l'installation de panneaux solaires ou le remplacement d'équipements énergivores (22 occurrences), des incitations fiscales comme crédits d'impôt et réductions de TVA pour certains investissements écologiques voire même des amnisties fiscales (2 occurrences) et le lancement des programmes régionaux ou locaux d'accompagnement à la transition durable dans le secteur du tourisme en faisant participer ou déléguer ces programmes à des associations écologiques (8 occurrences) actives pour dynamiser cet écosystème écologique.

D’autre part, les pouvoirs publiques doivent jouer un rôle de coordination territoriale notamment avec les collectivités locales qui joue un rôle crucial dans la coordination entre les acteurs du tourisme et de l’environnement à travers la mise en réseau des hôteliers avec les producteurs locaux, les fournisseurs durables et les services publics de gestion des déchets (17 occurrences), l’élaboration de plans de développement touristique durable à l’échelle des territoires et le soutien aux initiatives collectives par l’attribution de labels territoriaux, l’organisation des circuits courts d’approvisionnement (9 occurrences) et l’organisation d’événements écotouristiques. Cette dynamique territoriale instaurera un écosystème favorable à l’engagement écologique des professionnels du Tourisme et de tous les acteurs.

Le comportement écologique des directeurs d’hôtel ne se construit pas en vase clos : il s’inscrit dans un cadre institutionnel structuré par l’action publique, dans lequel leur rôle est à la fois régulateur, catalyseur et accompagnateur. L’efficacité des politiques publiques repose cependant sur leur capacité à concilier contraintes économiques et ambitions environnementales, dans le but de convertir la conformité réglementaire en véritable engagement écologique managérial qui se traduit en pratiques et comportement pro-environnementaux.

3.1.4 : Thème 4 : Du comportement pro-environnemental au positionnement stratégique durable : Vers un marketing hôtelier tunisien éco-responsable

En dehors des pratiques opérationnelles et des défis institutionnels explorés dans les thèmes précédents, l’analyse des entretiens dévoile une dimension encore peu formalisée chez les directeurs hôteliers tunisiens : la traduction de leur engagement pro-environnemental en positionnement stratégique durable.

Résultats et Analyse :

L’analyse thématique des entretiens met en évidence que la majorité des directeurs interviewés reconnaissent la valeur différenciatrice de leur engagement écologique (31 occurrences), mais s’échinent à l’officialiser en stratégie marketing (8 occurrences). On observe ainsi un hiatus entre conscience stratégique et action marketing qui présente l’une des spécificités du contexte hôtelier tunisien.

a) La labellisation et certification : un levier sous-exploité

La certification environnementale qu’il s’agisse de la Clef Verte, de la norme ISO 14001 ou du label Green Globe est mentionnée par seulement 6 directeurs interviewés comme un outil de positionnement actif sur le marché. La majorité des autres directeurs connaissent ces labels (19 occurrences) mais les perçoivent principalement comme un coût supplémentaire (21 occurrences) plutôt que comme une ressource marketing valorisable. Cette perception renvoie à une conception encore instrumentale de l’écologie, déconnectée de la logique de différenciation concurrentielle (Porter, 1985).

Verbatim Interviewé n°7 : « De nos jours même nos clients deviennent des clients engagés dans cette cause, et ces convictions et croyances font la différence, et nous poussent même à remodeler notre offre ».

Ce verbatim, déjà relevé dans le thème 1, prend ici une signification bien particulière, car il démontre la pression exercée par les clients. Ces derniers considérés comme une partie prenante centrale au sens de Freeman (1984) et principalement comme déclencheur d’un réajustement

de l'offre. C'est précisément cette pression client qui présente, dans le contexte tunisien, le levier primordial d'activation d'un positionnement vert.

b) La communication RSE : entre authenticité et risque de greenwashing

La communication des engagements environnementaux constitue un enjeu majeur du marketing hôtelier durable. Cette analyse révèle que la grande majorité des directeurs interrogés communiquent de manière informelle sur leurs pratiques écologiques (26 occurrences), essentiellement à travers les plateformes de réservation en ligne et les réponses aux avis clients, mais que seuls 4 directeurs détiennent une stratégie de communication RSE agencée. Ce déséquilibre entre pratiques réelles et communication externe dévoile une réticence culturelle à mettre en avant ses efforts environnementaux, mais aussi une crainte bien identifiée dans la littérature : celle du greenwashing perçu (Walker et Wan, 2012). Comme l'avance l'interviewé n°9, « *l'arbitrage économique reste déterminant : les pratiques écologiques qui s'alignent avec une compression des charges sont adoptées, les autres bloquent* ».

c) Le positionnement durable face à la demande internationale et locale

Le contexte hôtelier tunisien expose une dualité structurelle : les hôtels font face à une double pression de marché. D'un côté, les tour-opérateurs européens exigent des critères de durabilité croissants dans leurs grilles d'évaluation et de référencement (17 occurrences). De l'autre, la clientèle locale tunisienne, en pleine expansion post-Covid, exprime une sensibilité environnementale encore émergente (11 occurrences). Cette dichotomie produit une tension stratégique que plusieurs directeurs verbalisent explicitement : positionner leur établissement comme "éco-responsable" est un critère de compétitivité sur le marché international, mais la clientèle locale risque d'associer parfois l'écologie à un service de moindre confort. Cette dualité constitue l'un des défis spécifiques du marketing hôtelier tunisien dans sa transition vers un positionnement stratégique durable.

d) Vers un modèle intégrateur : de la conscience écologique à la valeur client

Les résultats de cette recherche permettent d'ébaucher un modèle en trois stades : (1) la conscience écologique du dirigeant, activée par ses valeurs personnelles et les pressions des parties prenantes, donne lieu à des comportements pro-environnementaux opérationnels et managériaux ; (2) ces comportements, arrivant à maturité, se traduisent par des comportements stratégiques tel que le choix de certifications, la révision de l'offre, la formation du personnel à l'éco-geste ; (3) ces comportements stratégiques définissent la matière première d'un positionnement marketing durable qui crée de la valeur perçue pour le client éco-sensible. C'est ce troisième stade qui illustre la fontanelle du contexte hôtelier tunisien, en raison des insuffisances de formation en marketing vert, de l'absence de labels tunisiens reconnus sur les marchés internationaux, et d'une culture sectorielle encore dominée et gouvernée par le rapport qualité-prix plutôt que par le rapport valeur-sens.

Verbatim Interviewé n°13 : « si je résume ce que je viens de vous dire je dirai que la conscience écologique est un état d'esprit, une mentalité et une culture qui se traduit par une attitude qui guide nos décisions ».

Ce verbatim résume avec éloquence la chaîne causale que notre recherche cherche à documenter.

Conclusion :

Rappelons que l'objectif de départ de cette recherche, menée avec 16 entretiens semi-directifs effectuée avec les professionnels du tourisme et de l'hôtellerie, vise à explorer le processus de conscience écologique de ces professionnels, de savoir comment ce processus se concrétise par des comportement pro-environnementaux et découvrir ses défis et ses enjeux. La succession des dommages écologiques a eu pour corollaire une prise de conscience mondiale de la dégradation grandissante de la qualité environnementale actuelle. Nos interviewés sont à l'unanimité conscients des problèmes environnementaux et de l'urgence mondiale qui impacte fortement leur secteur de Tourisme, car en soi l'environnement est un facteur d'attraction touristique fondamental. Malgré la conscience de l'importance des pratiques écologiques plusieurs obstacles freinent l'adoption complète de comportements pro-environnementaux, car ces derniers oscillent entre conscience et pragmatisme économique. Lors de cette étude ces professionnels mettent l'accent sur ce hiatus entre discours ambitieux, promesses solennelles et les plans d'actions et pratiques qui suivent. Ces pratiques et comportements ne se construisent pas en vase clos : ils font partie d'un cadre institutionnel structuré par les pouvoirs publics dans le but de concilier contraintes économiques et ambitions environnementales, ce qui laissent la porte encore grande ouverte aux recherches futures sur la question et nous guident vers d'autres pistes de recherche pour essayer de cerner cet écosystème dans sa globalité. Par ailleurs, la traduction des comportements pro-environnementaux en positionnement stratégique durable dévoile que le passage de la conscience à l'acte marketing reste la fontanelle et le maillon le plus fragile dans le contexte hôtelier tunisien. Entre pression des tour-opérateurs internationaux, attentes d'une clientèle locale en mutation et déficit de labels tunisiens reconnus, les directeurs d'hôtels se trouvent à la croisée d'une nécessité compétitive et d'une maturité marketing encore en construction. Cette tension ouvre des perspectives de recherche prometteuses sur le marketing hôtelier vert dans les économies émergentes méditerranéennes, notamment autour du rôle des plateformes numériques comme vecteurs de valorisation de l'engagement écologique et de la construction d'une image de marque durable.

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Abréviations :

BPI France : Banque Publique d'Investissement, est une banque publique française dédiée au financement et au développement des entreprises

Les déterminants de l'adoption des objets connectés de santé

Résumé :

Malgré le potentiel des objets connectés en santé, leur adoption reste lente. Cette étude qualitative, basée sur des entretiens individuels, vise à comprendre les intentions des utilisateurs et non-utilisateurs ainsi que les freins à l'adoption. Les résultats montrent que l'utilité perçue, la facilité d'utilisation ainsi que les caractéristiques de l'objet renforcent l'intention d'adoption. En revanche, certains risques freinent l'adoption. Trois types de risques principaux ont été identifiés : Le risque financier, lié au coût des dispositifs ; le risque de performance, et le risque de violation de la vie privée, en lien avec la sécurité et la confidentialité des données personnelles. Ces risques limitent l'intention des utilisateurs d'adopter ces technologies.

Mots clés : Santé connectée, Objets connectés, Intention d'adoption, Résistance à l'adoption.

Determinants of the Adoption of Connected Health Devices

Abstract: Despite the potential of connected health devices, their adoption remains slow. This qualitative study, based on individual interviews, aims to understand the intentions of both users and non-users, as well as the barriers to adoption. The results show that perceived usefulness, ease of use, and the device's characteristics strengthen the intention to adopt. In contrast, certain risks hinder adoption. Three main types of risks were identified: financial risk, related to the cost of devices; performance risk; and privacy risk, related to the security and confidentiality of personal data. These risks reduce users' intention to adopt these technologies.

Keywords: Connected health, Connected devices, adoption intention, Adoption resistance.

Introduction

Au cours de la dernière décennie, les innovations technologiques ne cessent de progresser surtout dans le domaine des technologies numériques intelligentes. L'une des plus connue c'est l'internet des objets (IdO) qui a pu changer le monde et le quotidien. L'Internet des objets est devenu vital pour un développement économique durable (Mansour, 2023). Cette évolution est parmi les plus importantes qui a envahi le marché dans différents secteurs (l'industrie 4.0, la logistique, les villes intelligentes et la santé connectée) en faisant la coordination des objets physiques et virtuels qui sont liés à Internet (Hassan et al, 2020).

Kevin Ashton a inventé le terme en 1999 en tant que technologie capable de changer le monde encore plus que l'Internet. Ce dernier définit ce concept comme un système dans lequel des objets physiques sont équipés de technologies d'identification et de capteurs leur permettant de collecter, transmettre et échanger des données via Internet, afin d'améliorer la gestion, le suivi et l'automatisation des processus, avec une intervention humaine minimale (Ashton, 2009)**.** En effet, la progression continue de l'IdO permet aux consommateurs de se connecter n'importe où et n'importe quand avec ou sans les paramétrages prédéfinis par les utilisateurs (Kumar et al., 2021).

Le succès de l'IdO est vital pour les entreprises. Selon Mordor Intelligence, le marché mondial de l'Internet des objets est estimé à 1 350 milliards de dollars en 2025 et devrait atteindre 2 720 milliards de dollars à l'horizon 2030[1].

Les nouveaux produits d'Apple, de Samsung et d'autres entreprises ont participé à valoriser l'intérêt pour les objets connectés les plus populaires : les montres connectées et les assistances à domicile. D'après une étude de France stratégie, le nombre d'objets connectés devrait presque doubler pour atteindre 45 milliards d'ici 2030[2]. Les trois secteurs les plus connectés au monde sont : la sécurité des biens et personnes, la santé et-le transport[3]. Dans le cadre de cette étude, il a été décidé de s'intéresser à la santé connectée. L'IdO a contribué à une grande transformation

[1]https://www.mordorintelligence.com/fr/industry-reports/internet-of-things-iot-market#:~:text=Le%20march%C3%A9%20de%20l'Internet%20des%20objets%20(IoT),Technologies%20Co.%20Ltd%20sont%20les%20principales%20entreprises
[2]https://www.strategie-plan.gouv.fr/files/files/Publications/2021%20SP/2022-02-17%20-%20Le%20monde%20de%20l%27internet%20des%20objets/fs-2022-synthese-iot-fevrier.pdf
[3]https://www.matooma.com/fr/s-informer/actualites-iot-m2m/iot-les-5-secteurs-les-plus-connectes?srsltid=AfmBOopJl2BbaxZCwEA1ihb_Mdp0cP9yR_GYCCxHpY8kULdmLp2EQfo8#infographie

du domaine médical et des soins de santé par l'invention des nouveaux produits qui peuvent être portés ou attachés au corps humain (Cheung et al., 2019).

Les appareils de santé IoT tels que les traceurs de forme physique portables et les systèmes de surveillance à distance fournissent des données de santé en temps réel, améliorant les soins aux patients et réduisant les visites à l'hôpital (Shaheen, 2024). Le développement des applications mobiles de santé modifie en profondeur la manière dont les patients gèrent leur santé, interagissent avec les professionnels de santé et participent au fonctionnement global du système de soins. L'action de ces outils numériques se déploie sur plusieurs plans : « i*ls favorisent l'autonomisation et l'auto-gestion, renforcent l'engagement et la fidélisation, modifient la relation patient–professionnel et influencent la satisfaction ainsi que la qualité perçue des soins* ». (Agoulman, 2025). Malgré le potentiel important des technologies IoT en santé, leur adoption reste relativement lente (Al-Rawashdeh et al, 2022).

La présente étude vise à explorer l'intention d'adoption des objets de santé connectés par les consommateurs devenus de plus en plus exigeants et difficile à satisfaire afin d'accompagner les industriels à mieux comprendre leurs clients. Ainsi, cette recherche se propose de répondre aux questions suivantes : (1) Quels sont les déterminants de l'intention d'adoption des objets connectés en santé connectée ? (2) Quels sont les déterminants de la résistance à l'adoption de la santé connectée ?

Santé connectée ou m-santé

La M-santé est apparue en raison d'une utilisation accrue de la technologie mobile et de sa connectivité pour avoir des détails sur l'état de santé personnel (Grewal et al., 2020). La santé mobile se réfère aux pratiques médicales et de santé publique soutenues par des appareils mobiles tels que les smartphones, les dispositifs de surveillance des patients, les assistants numériques personnels et d'autres dispositifs sans fil liés à la santé. Ces services incluent des consultations, des diagnostics, des traitements, l'échange de données médicales, des évaluations et des mesures préventives pour les maladies et les blessures (Alviani et al.,2023). Ces outils numériques sont désormais mis à disposition des patients, leur offrant un meilleur accès à l'information et favorisant une implication accrue dans la gestion de leur santé et la construction de leur parcours de soins (Moinier et Bonal, 2025). Une étude pubiée par Mobius en janvier 2026 montre qu'il existe plus de 350 000 applications de m-santé (mHealth) disponibles sur les principales plateformes de téléchargement (App Store et Google Play)[4]. Une autre étude

[4] https://www.mobius.md/blog/11-mobile-health-statistics

explique que le marché de la santé mobile devrait enregistrer une forte croissance, avec un taux annuel estimé à 35,18 % sur la période 2020-2029, pour atteindre environ 230,33 milliards de dollars à l'horizon 2029

Acceptation et processus d'adoption de l'innovation des objets connectés

Le études sur l'adoption des dans le domaine des soins et de la santé met en évidence une mobilisation prédominante des cadres théoriques tels que la Théorie de l'action raisonnée (TRA), la Théorie du comportement planifié (TPB), le Modèle d'acceptation de la technologie (TAM) et la Théorie unifiée de l'acceptation et de l'utilisation de la technologie (UTAUT)(Al-Rawashdeh *et al*., 2022). Tel qu'illustré dans le tableau 1, les théories mobilisées pour comprendre le processus d'adoption d'une innovation ont mis l'accent sur des aspects liés au produit ou à la technologie notamment l'utilité perçue et la facilité d'utilisation (TAM ; Davis 1989), l'avantage relatif, la compatibilité, la complexité, l'expérimentation, l'observabilité (TDI ; Rogers, 1962), l'attitude, les normes subjectives (TRA ; Ajzen et Fishbein 1974), le contrôle comportemental perçu (TCP ; 1991), la performance attendue, l'effort attendu, l'influence sociale, les conditions facilitantes (UTAUT; Venkatesh *et al*., 2003).

Tableau 1- Synthèse des théories d'adoption

Théories et modèles	**Auteurs (Année)**
Innovation Diffusion Theory (IDT)	Rogers (1962)
Theory of Reasoned Action (TRA)	Fishben et Ajzen (1967)
Theory of Planned Behavior (TPB)	Ajzen (1985)
Technology Acceptance Model (TAM)	Davis (1986)
Technology Acceptance Model 2 (TAM2)	Venkatesh et Davis (2000)
Unified Theory of Acceptance and Use of Technology Model (UTAUT)	Venkatesh et al. (2003)
Technology Acceptance Model 3 (TAM3)	Venkatesh et Bala (2008)
Unified Theory of Acceptance and Use of Technology Model 2 (UTAUT2)	Venkatesh et al. (2012)

Auteurs : (Oueslati, 2024)

La résistance à l'innovation

La lenteur de l'adoption des nouvelles technologies par les consommateurs va à l'encontre des attentes des industries des objets connectés. Le risque pour les entreprises est de se heurter à la résistance des consommateurs à ces nouveaux produits (Mani et Chouk, 2017). La résistance à l'innovation peut être définie comme "*la résistance offerte par les consommateurs à une innovation, soit parce qu'elle représente des changements potentiels par rapport à un statu quo satisfaisant, soit parce qu'elle entre en conflit avec leur structure de croyance*" (Ram et Sheth, 1989). Il est essentiel de tenir compte des facteurs de résistance des consommateurs lors de l'introduction de nouvelles innovations sur le marché, car ces facteurs peuvent constituer des obstacles à la diffusion et à l'acceptation d'une innovation (Wiedmann et al., 2011). La résistance à l'adoption des objets connectés « *identifie des obstacles tels que l'incertitude, la complexité perçue, le manque de bénéfices perçus et les facteurs de résistance* sociale » (Lihi et Simour, 2024). Le consommateur se trouve potentiellement vulnérable face à des risques liés à : (1) la gestion de la donnée (sécurité, vie privée), (2) sa santé (physique et psychologique) et (3) ses attentes par rapport à l'objet (performance, investissement financier) qui seront des sources de réticence auprès des consommateurs (Mani et Chouk, 2017).

Méthodologie

Une approche qualitative exploratoire a été adoptée. 18 entretiens semi-structurés ont été réalisés avec des consommateurs (12 étaient des non-utilisateurs de la santé connectée et 6 utilisateurs). La méthode d'analyse des données utilisée est basée sur une analyse de contenu thématique avec le llogiciel NVIVO 12. Le guide d'entretien comportait 3 thèmes : (1) Familiarisation avec les objets connectés, (2) Perception de la santé connectée, (3) Principaux facteurs qui influencent l'adoption de la santé connectée.

Résultats

1. Utilisateurs

- **Familiarisation avec les objets connectés**

Connaissance des objets connectés : Les *« utilisateurs »* connaissent les objets connectés. deuxCo d'entre eux en utilisent au moins un. Différents objets connectés ont été mentionnés lors des entretiens tels que la montre connectée, Google home ou encore Chromecast. L'innovation la plus utilisée et qui ressort dans tous les interviews (12 au total) est la montre connectée et ce pour des usages diversifiés tels que le suivi de la santé où un des répondants explique « *l'apple watch m'a permis d'améliorer ma santé et mon bien être grâce aux*

indicateurs fournis par l'objet ». D'autres disent avoir besoin de cet objet lors de leur pratique sportive « *je peux visualiser mon évolution sportive et être plus performant* » (R2). Enfin, certains mettent le point sur « *la gestion du quotidien, l'optimisation du temps (accès rapides aux mails, messages et appels) »* (R6).

- **Familiarisation avec les objets connectés de santé**

Connaissance des objets connectés de santé : Tous les répondants *« utilisateurs »* ont des connaissances sur la santé connectée et ont entendu parler de la santé digitale. La montre connectée ainsi que les bracelets connectés ont été mentionnées à plusieurs reprises plus précisément *"Apple Watch"* et ceci pourrait être expliqué par le fait du pouvoir de l'image de marque de l'enseigne *"Apple"* dans les esprits des utilisateurs (R 1, 2, 4 et 6). En spécifiant que *"Apple Watch"* pourrait avoir d'autres fonctions que de mesurer les indicateurs de santé tel qu'en Amérique où elle pourrait être connectée *"avec les services de santé en cas d'un accident vasculaire cérébral ou même aussi en cas de tout comportement inhabituel côté rythme cardiaque"* (Répondant 4). Aussi, l'entreprise Apple s'est focalisée sur le volet de la santé pour apporter d'autres fonctionnalités et faire avancer la santé digitale avec la possibilité d'effectuer des *"tests de sang"* (Répondant 2). Le répondant 4 a mentionné la puce qui est en cours de conception par les équipes d'Elon Musk à travers son entreprise Neuralink afin de *"redonner la parole et la mobilité aux personnes paralysées".* Dans un autre registre le répondant 2 a mentionné lors d'une conférence sur le digital il a eu l'opportunité de connaitre une nouvelle start-up *"qui travaille sur les IdOs utilisés pour la radiologie qui seront enregistrées directement pour faciliter le processus de transmission des données des patients aux médecins".* Les bracelets connectés sont aussi mentionnés pour différentes maladies telles que l'Alzheimer, les personnes âgées et les épileptiques (Répondant 4, 5). Par ailleurs, le répondant 4 était au cœur du numérique, il a même travaillé sur la conception des bracelets connectés pendant la pandémie mondiale pour la Covid-19 afin de détecter les personnes qui ont été contaminées par le virus.

- **Les caractéristiques de l'objet connecté**

L'esthétique perçue : Elle représente l'élément le plus évoqué dans les verbatims des répondants et elle concerne principalement le fait que l'objet soit portable, petit, esthétiquement beau (ex : R7, R9).

L'utilité perçue : L'usage des objets de la santé connectée ne pourrait être efficace seulement s'il y a une utilité perçue tel que le suivi pour l'amélioration de l'état de santé, le bien-être et

avoir plus d'accessibilité aux indicateurs qui informent l'utilisateur sur l'état de santé général. A titre d'exemple, le répondant 11 explique *"... avoir plus de contrôle et prévenir les maladies en anticipant afin d'être éveillé et ne pas aggraver les choses et les symptômes détectés pourraient anticiper les maladies graves"*.

Le confort perçu : Certains répondants (1,3, 9) expliquent que pour qu'un objet soit accepté et adopté, il faudrait qu'il soit confortable. Pour cela un des répondants a précisé qu'il faut « *qu'il soit léger et discret pour ne pas avoir la sensation de lourdeur avec une écriture lisible* » (Répondant 3).

Le prix : La valeur du prix constitue aussi une motivation à l'achat de ces produits si ce dernier reste abordable et qu'il soit rentabilisé par la qualité du service fourni. Le répondant 6 explique « *je veux rentabiliser mon achat et avoir l'impression d'avoir fait une bonne affaire* ».

La facilité d'utilisation : La facilité d'usage aussi est un élément très important pour les répondants, certains comme le R7 insiste sur le fait que « *je ne suis pas très fort en technologie, je veux que ce soit facile pour moi* ».

- **Freins à l'adoption de la santé connectée**

Les éléments qui inhibent l'adoption qui ont été détectés seront répartis en trois sous thèmes : (1) le risque de violation de la vie privée, (2)le risque de performance, (3)le risque financier, le risque psychologique, le risque physique (Annexe 2).

La violation de la vie privée : Les entretiens mettent en avant le risque de violation de la vie privée par les différents répondants (5) qui représentent la collecte d'informations personnelles à l'insu du patient et les utiliser sans l'autorisation de ce dernier. R6 explique « *ça me dérange un peu de donner des détails sur ma vie privée, mes déplacements, mon état de santé* ».

Le risque de performance : Le risque de performance fait référence du produit comme le *"besoin de le changer régulièrement"* (R4) ou encore le fait de fournir des informations erronées.

Le risque financier **:** Le frein à l'achat de ces produits peut être le prix élevé et qui dépasse leur pouvoir d'achat. R7 explique que « *les objets connectés sont hors de prix pour certaines marques, ce genre de produit s'adresse à des profils bien précis* ».

2. Non-utilisateurs

- **Familiarisation avec les objets connectés**

Connaissance des objets connectés : Parmi les non-utilisateurs interrogés 50% étaient des connaisseurs des objets connectés et 50% avaient une méconnaissance des objets connectés. Par exemple certains ne savaient pas que la montre connectée fait partie des objets connectés. C'est à ce niveau que l'interviewer est intervenu pour expliquer le concept aux différents interviewés.

Connaissance des objets connecté de la santé : Les entretiens révèlent que la santé connectée n'est pas assez connue. Seuls 3 des non-utilisateurs parmi 6 ont des connaissances sur la santé connectée. Les exemples mentionnés sont *"la montre connectée"* et *"objet pour régler le taux d'insuline"* et ceci afin de *"faciliter la vie et la tâche aux patients et au corps médical dans plusieurs stades qui remontent de la prévention, le traitement et le post-traitement"* pour *"les patients souffrant de maladies chroniques utilisent ces objets"* (R13).

Le prix : Trois répondants expliquent que si le prix était abordable ils auraient acheté une montre connectée sauf que les prix restent assez chers pour les différents services fournis. Le répondant 14 déclare **«** *si un jour je trouve une promotion ou une offre pour une montre connectée pourquoi pas* **».**

La sécurité psychologique : Les répondants 8 et 13 ont bien insisté sur le point que l'usage de la santé connectée pourrait leur procurer une sensation de sécurité psychologique afin de mettre en avant la santé mentale et la psychologie du patient pour se *"réconforter"* et *"ne pas se stresser tout le temps"*. Aussi, le fait d'être prévenu d'une potentielle maladie peut avoir un effet positif sur la psychologie de l'utilisateur pour l'inciter à faire un pas en avant pour un meilleur bien-être. D'ailleurs, la sensation d'être assisté et pouvoir se rassurer que tout se passe bien dans leur corps est un facteur qui les poussent réfléchir pour acheter ce genre d'objet.

Freins à l'adoption de la santé connectée : Parmi les sous thèmes liés au frein à l'adoption des objets connecté de santé, il est possible de citer le risque de violation de la vie privée, le risque financier et la santé physique (Annexe 4).

Le risque de violation de la vie privée : En effet, pour certains répondants (10, 11, 12, 13, 14,16 et 18) le risque de violation de la vie privée a été pas mal mentionné en ce qui concerne la collecte d'informations personnelles sans le savoir, aussi, l'utilisation ou la commercialisation des données sans le consentement du consommateur qui ne vont pas être *"secrètes ou confidentielles"*.

Le risque financier : Le prix est le principal frein à l'achat de ce type d'objet, tous les répondants ont évoqué ce point. Pour ces derniers, ces produits ne sont pas vitaux et il est possible de s'en passer. Ainsi, R14 déclare « *je ne vois pas l'intérêt de dépenser autant d'argent pour une montre connectée c'est un phénomène de mode pour dire qu'on est sportif* ».

Le risque physique : Le terme *"onde"* est beaucoup ressorti lors des entretiens. Les répondants expliquent que les ondes affectent et génèrent d'autres maladies. R18 explique « *avec le wifi, le micro-onde, la nourriture… ; je ne veux pas rajouter un autre produit nocif* ».

Discussion des résultats

Les résultats de la présente recherche ont permis de comprendre les motivations et les freins liés à l'adoptions des objets connectés en santé connecté

L'utilité perçue favorise l'adoption des dispositifs portables de santé. Ce résultat confirme les travaux de Singh et al. (2022) et Zhang et al. (2022). Lorsque les bénéfices apportés par les objets connectés pour le suivi de la santé sont perçus comme concrets et significatifs, ces dispositifs sont plus susceptibles d'être adoptés par les consommateurs.

Un autre résultat issu de la recherche met en évidence le rôle déterminant de la facilité dans l'adoption des objets connectés. Ce constat confirme certains travaux antérieurs Singh et al. (2022 ; Zhang et al., 2022, ; Pradhan et al., 2021 ; Pateraki et al., 2020 ; Ho et al., 2024). En effet, les wearables comme l'Apple Watch sont perçus comme intuitifs et faciles à intégrer dans la vie quotidienne ce qui stimulent l'adoption des utilisateurs. À l'inverse, certains dispositifs plus complexes, comme les capteurs pour le suivi du rythme cardiaque et de la respiration, peuvent générer un sentiment d'intrusion ou être difficiles à comprendre, ce qui augmente le risque perçu et freine l'adoption.

Un autre résultat dégagé concerne les caractéristiques du dispositif montre que les attributs techniques et esthétiques favorisent significativement l'intention d'adoption des utilisateurs. Ce constat confirme certains travaux (Natarajan et al., 2018 ; Pateraki et al., 2020 ; Ho et al., 2024), qui montrent que les innovations intégrées aux montres intelligentes encouragent l'adoption en augmentant la perception de valeur (Pateraki et al., 2020). Au-delà de la fiabilité et de l'ergonomie, des éléments tels que la forme ou encore la couleur contribuent à renforcer l'attrait du dispositif et son intégration dans la vie quotidienne. Lorsqu'ils sont, en plus, dotés de fonctionnalités innovantes, comme la surveillance de l'oxygène sanguin, l'ECG ou encore des outils de gamification, ces objets ne se limitent plus à une simple mesure des indicateurs de santé. Ils

rendent l'expérience plus plaisante, engageante et motivante, ce qui consolide davantage leur adoption.

Toutefois, l'adoption des technologies de santé connectée peut être entravée par plusieurs freins. Les résultats montrent que le principal frein à l'adoption des objets connectés de santé réside dans le manque de connaissance et de familiarité avec ces technologies. Ces résultats corroborent ceux de Gastaldi, Lettieri et al. (2019) qui confirment que le développement de la santé connectée dépend fortement du niveau d'information et de sensibilisation des consommateurs. En effet, le manque d'informations concernant le fonctionnement, les avantages concrets et la fiabilité de ces technologies constitue un obstacle à l'intention d'adoption.

L'adoption de la santé connectée peut également être freinée par différents types de risques, parmi lesquels : (1) le risque financier, (2) le risque de performance et (3) le risque de violation de la vie privée. Ce résultat confirme les travaux de Mani et Chouk (2017**)**, qui soulignent que le prix élevé peut constituer un frein à l'adoption des dispositifs perçus comme incertains ou risqués. En revanche, il contredit les recherches d'Amnas et al. (2023) et de Wu et Lim (2024), qui montrent que lorsque le coût d'un appareil est perçu comme justifié par ses avantages, la probabilité d'adoption augmente de manière significative. Selon ces auteurs, si les utilisateurs jugent le rapport qualité-prix favorable, que l'accessibilité financière est satisfaisante et que les bénéfices du dispositif sont clairement perceptibles, ils sont alors plus enclins à adopter le produit. (2) le risque de performance peut entraver également l'adoption des objets connectés. Ce résultat corrobore les travaux de Mani et Chouk (2017) et réfutent certains travaux (Bajunaied et al., 2023 ; Basri et al., 2022 ; Martinez et McAndrews, 2023) qui considèrent que la performance favorise l'intention d'adopter les objets connectés car les utilisateurs anticipent et constatent des avantages réels en termes de commodité, d'efficacité grâce à ces solutions technologiques.

Un autre résultat issu de cette recherche permet de confirmer la résistance d'adopter un objet connecté en raison du risque de violation de la vie privée. En effet, les préoccupations liées à la sécurité des données et à l'atteinte à la vie privée, constituent un frein important à l'adoption des technologies connectées de santé. Ce résultat est confirmé par Jangir et al. (2022) et Mami et Chouk (2017) qui soulignent que ces inquiétudes peuvent réduire la confiance des utilisateurs et limiter leur intention d'adoption.

Ces résultats contredisent partiellement Laksamana et al. (2022) et Ali et al. (2021) qui affirment qu'un risque perçu élevé peut être compensé lorsque les avantages perçus l'emportent, rendant les utilisateurs plus enclins à adopter la technologie.

Conclusion

Cette recherche apporte une contribution à la compréhension des déterminants l'adoption des objets connectés en santé mobile. En effet, la diffusion croissante des objets connectés en santé représente une opportunité significative et une solution particulièrement pertinente pour les patients atteints de maladies chroniques, notamment dans le cadre du suivi régulier et personnalisé de leur état de santé. Elle constitue également une opportunité pour les individus en bonne santé, en particulier les sportifs, désireux de surveiller et d'optimiser leurs paramètres physiologiques en vue d'améliorer leur bien-être physique et mental.

Apport théorique

Cette recherche apporte une contribution à la compréhension des déterminants l'adoption des objets connectés en santé mobile**.** D'un point de vue théorique, cette recherche contribue à un meilleur éclairage des mécanismes sous-jacents à l'adoption des objets connectés en santé mobile. Elle apporte un éclairage approfondi sur les déterminants des intentions d'adoption, ainsi que sur les freins susceptibles d'entraver l'usage, tant chez les utilisateurs actuels que chez les non-utilisateurs de ces dispositifs.

Ce travail contribue à l'enrichissement de la littérature en intégrant de manière approfondie le point de vue des consommateurs. En effet, les recherches antérieures sur la santé connectée (Choi et Kim, 2016 ; Zhong et al., 2017 ; Wang et al., 2020 ; Alam et al., 2020 ; Niknejad et al., 2020) se sont principalement focalisées sur des populations spécifiques ou sur des dispositifs prédéfinis, tels que les technologies d'assistance à domicile ou les montres connectées, en privilégiant des approches quantitatives.

Apport managérial

Sur le plan managérial, les responsables marketing sont appelés à concevoir des objets connectés en santé (OCS) offrant une expérience utilisateur à la fois agréable et engageante, en transformant la gestion de la santé en une activité perçue comme gratifiante. Cela suppose l'intégration de mécanismes de gamification, tels que des défis personnalisés adaptés aux

profils des utilisateurs, des rétroactions visuelles positives valorisant les progrès accomplis, ainsi que des interfaces ergonomiques et attractives favorisant l'engagement durable.

Limites de la recherche

Comme tout travail de recherche, cette étude a des limites qui permettent d'ouvrir la voie pour de futures recherches.

D'abord, bien que l'étude intègre le point de vue des consommateurs, elle ne prend pas en compte celui d'autres acteurs clés, tels que les professionnels de santé, les concepteurs de dispositifs ou les assureurs, dont les perceptions pourraient influencer indirectement l'adoption.

En raison de son caractère qualitatif et exploratoire, les résultats obtenus ne peuvent être généralisés à l'ensemble de la population. Les conclusions doivent donc être interprétées avec prudence.

Dès lors, il serait pertinent, dans de futures recherches, de mobiliser une approche quantitative afin de tester et de valider les résultats sur un échantillon plus large et représentatif. Une telle démarche permettrait de renforcer la robustesse des conclusions et d'améliorer leur portée généralisable.

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Annexes

Annexe 1 : Résultats de l'analyse thématique des utilisateurs

Thème	Sous-thème	Verbatim	Occurrence
Familiarisation avec les objets connectés	Connaissance des objets connectés	*"Je connais surtout les montres connectées"*	12
Familiarisation avec les objets connectée de santé	Connaissance des objets connectée de santé	*"Applewatch est le seul produit que je connais"*	3
		"Je connais les bracelets connectés pour prendre la tension, le rythme cardiaque"	1
		"j'ai entendu parler de la puce d'Elon Musk afin de "redonner la parole et la mobilité aux personnes paralysées".	1
Motivations à l'adoption de la santé connectée	L'esthétique perçue	*"Je veux que l'objet soit portable, petit, esthétiquement beau"*	2
	L'utilité perçue	*"améliorer ma santé et mon bien être grâce aux indicateurs fournis par l'objet ».*	5
	Le confort perçu	*"La montre ne doit pas être lourde et avoir une écriture lisible"*	3
	Le prix	*« je veux rentabiliser mon achat et avoir l'impression d'avoir fait une bonne affaire ».*	7
	La facilité d'utilisation	*"je ne suis pas très fort en technologie, je veux que ce soit facile pour moi"*	6
	La sécurité psychologique	*"c'est rassurant d'avoir des informations sur ma santé en temps réel"*	4
	L'intégration des médecins	*"Renvoyer automatiquement aux médecins les résultats en cas de problème"*	3

Freins à l'adoption de la santé connectée	La violation de la vie privée	*"ça me dérange un peu de donner des détails sur ma vie privée, mes déplacements, mon état de santé "*	10
	Le risque de performance	*"le produit bug parfois "*	4
	Le risque financier	*"les objets connectés sont hors de prix pour certaines marques, ce genre de produit s'adresse à des profils bien précis"*	9

Annexe 2 : Résultats de l'analyse thématique des non utilisateurs

Thème	**Sous-thème**	**Verbatim**	**Occurrence**
Familiarisation avec les objets connectés	Connaissance des objets connectés	"Je connais quelques objets connectés"	**3**
		"Je ne connais pas ces produits"	3
Familiarisation avec les objets connectée de santé	Connaissance des objets connectée de santé	*"Applewatch est le seul produit que je connais"*	3
		"Je ne connais pas du tout"	3
		"Je sais que les patients souffrant de maladies chroniques utilisent ces objets"	2
Motivations à l'adoption de la santé connectée	Le prix	*"si un jour je trouve une promotion ou une offre pour une montre connectée pourquoi pas "*	4
	La sécurité psychologique	*"c'est réconfortant d'avoir des données de santé"*	4
Freins à l'adoption de la santé connectée	La violation de la vie privée	*"Nos données ne sont ni secrètes ou confidentielles"*	5
	Le risque financier	*"Je refuse de payer autant pour un truc de mode"*	4

Facteurs influençant les attitudes et le comportement d'achat des consommateurs tunisiens à l'égard des produits labellisés « *Made in Tunisia* » : une étude qualitative dans le secteur du textile et de l'habillement

Résumé

Les tendances disruptives auxquelles on assiste depuis quelques années déstabilisent les acteurs économiques et le comportement des consommateurs. Pour ces derniers, le repli identitaire représente une évolution observable, et se traduit généralement par un changement dans les modes de consommation, privilégiant les produits locaux, authentiques et éthiques.

En 2024, l'Etat tunisien, a mis en place un projet stratégique de création d'un label « *Made in Tunisia* », visant la valorisation des produits locaux. Bien que ce changement constitue un levier essentiel pour soutenir la production nationale et le développement socio-économique du pays, les comportements d'achat des consommateurs tunisiens à l'égard des produits locaux demeurent ambivalents et contrastées. D'un côté, certains consommateurs manifestent une attitude favorable aux produits tunisiens, motivée par des considérations patriotiques et économiques. De l'autre côté, une partie du marché continue d'associer les produits importés à une meilleure qualité, à un prestige social plus élevé ou à une plus grande fiabilité technologique. Cette contradiction soulève une question centrale : quels sont les facteurs qui influencent les attitudes et les comportements des consommateurs tunisiens envers les produits labellisés « *Made in Tunisia* » ?

Afin d'apporter une réponse à cette question, la présente recherche adopte une approche qualitative complétée par une analyse thématique de contenu. Nous souhaiterions donc identifier ces facteurs qui influence le comportement d'achat des consommateurs tunisiens envers les produits labellisés « *Made in Tunisia* » dans le domaine du Textile et de l'Habillement. Les implications managériales et institutionnelles seront discutées afin de mieux comprendre comment renforcer l'attractivité des produits labellisés « *Made in Tunisia* » sur le marché local.

Mots-clés : Made in Tunisia, comportement du consommateur, attitudes, ethnocentrisme, étude exploratoire, analyse thématique réflexive.

L’effet de la communication interne sur le bien-être social des employés : une étude empirique dans le secteur public

Dans un contexte de transformations profondes des administrations publiques, la question des agents devient centrale. Si le bien-être au travail est abondamment étudié, cette recherche porte un intérêt particulier à une dimension peu traitée : le bien-être social. Ainsi, ce travaille vise à examiner l’effet de la communication interne perçue sur le bien-être social des employés du secteur public. Pour ce faire, une enquête par questionnaire a été menée auprès de 108 agents publics. Les résultats de l’étude empirique confirment l’existence d’un impact positif mais nuancé. L’étude révèle que la communication avec le supérieur hiérarchique est le déterminant le plus puissant du bien-être social, soulignant le rôle pivot du management de proximité. En revanche, bien que les dimensions relatives à la qualité et à la fiabilité d’information ainsi qu’à l’encouragement du supérieur hiérarchique, affichent un effet positif, ce dernier reste modeste. Ces résultats invitent, ainsi, à repenser les stratégies de communication dans les organisations publiques, non seulement comme moyens de diffusion d’information mais plutôt comme leviers de lien social.

La dénonciation de la corruption en ligne en Tunisie : Effets de la perception des efforts de transparence du gouvernement et de la prédisposition des citoyens à la transparence

Abstract :

Dans le cadre des travaux sur la lutte contre la corruption, le principe transparence se présente comme une prescription universelle pour combattre ce phénomène. Cette recherche porte un intérêt particulier au comportement de dénonciation de la corruption en ligne et à ses déterminants. Elle vise, principalement, à examiner l'effet de la perception de la transparence du gouvernement par les citoyens ainsi que la prédisposition de ces derniers à la transparence (révélation de soi) sur le comportement de dénonciation de la corruption en ligne. Ce travail s'intéresse également aux déterminants de la transparence perçue du gouvernement. Par ailleurs, il vise à étudier l'effet de la réputation du gouvernement en transparence ainsi que la prédisposition des citoyens à la transparence (révélation de soi), sur la transparence perçue du gouvernement. Pour ce faire, une étude quantitative, au moyen d'un questionnaire administré en ligne auprès de 407 participants, a été conduite dans le contexte tunisien. Les résultats montrent que les citoyens se basent sur la réputation du gouvernement en transparence pour juger les efforts de transparence de ce dernier. L'impact de la prédisposition des citoyens à la transparence (révélation de soi) s'avère nuancé dans le sens que les réticences individuelles à la transparence façonnent la perception des efforts de transparence du gouvernement. Les résultats montrent aussi que cette inclinaison des citoyens à la non transparence limite la dénonciation de la corruption en ligne. Les efforts de transparence perçus sont réduits la perception du caractère réservé du gouvernement qui constitue un obstacle à la dénonciation en ligne. Cette recherche permet de déduire que l'inclinaison du citoyen tunisien à la non transparence ainsi que sa perception négative de la transparence du gouvernement, l'emportent sur les opportunités d'engagement offertes par les médias sociaux.

Légitimité successorale et résilience dans les entreprises familiales tunisiennes

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Résumé

Dans les économies émergentes, la succession constitue un moment critique pour la pérennité des entreprises familiales. En Tunisie, ce défi est amplifié par une reprise économique fragile, des contraintes de financement persistantes et une incertitude institutionnelle durable. Cet article examine comment la relation fondateur-successeur conditionne la construction de la légitimité du successeur et, par ce biais, la résilience organisationnelle. À partir d'une étude qualitative multi-cas conduite auprès d'entreprises familiales tunisiennes à différents stades du processus successoral, nous montrons que la transmission s'effectue fréquemment sous la forme d'un transfert progressif de responsabilités sans transfert équivalent d'autorité. La légitimité du successeur dépend alors de la reconnaissance symbolique accordée par le fondateur et de la visibilité organisationnelle de la délégation. Les résultats permettent de proposer une typologie en trois configurations relationnelles (contrôle défensif, accompagnement conditionnel, copilotage structurant) et d'en analyser les effets différenciés sur la cohésion interne et la continuité décisionnelle.

Mots-clés : entreprise familiale, Tunisie, succession, légitimité, résilience organisationnelle, gouvernance, fondateur-successeur.

Introduction

La succession dans l'entreprise familiale est généralement abordée comme un problème de continuité managériale et patrimoniale. En Tunisie, cette question prend une portée stratégique accrue : la transition générationnelle se déroule dans un environnement macroéconomique contraint, caractérisé par une reprise graduelle mais fragile. La Banque mondiale signale une croissance modeste, un rebond partiel en 2024 et une amélioration en 2025 portée par l'agriculture, la construction et le tourisme, mais souligne un environnement de financement difficile peu propice à une croissance robuste. L'EBRD identifie de son côté un climat des affaires restrictif et des conditions monétaires serrées comme freins structurels. S'y ajoutent des tensions sur les finances publiques, une dépendance accrue aux financements domestiques et, malgré un recul de l'inflation, des conditions financières globalement exigeantes.

Dans ce contexte, la succession n'est pas seulement un passage de relais : c'est une épreuve de robustesse organisationnelle (Lansberg, 1988 ; Ward, 1987 ; Shepherd & Zacharakis, 2000). Elle expose l'entreprise familiale à un double risque : une fragilisation interne (ambiguïtés d'autorité, conflits, rétention du pouvoir) et une fragilisation externe (pression de liquidité, accès au crédit, maintien des relations d'affaires). Il devient dès lors pertinent d'articuler succession et résilience organisationnelle, entendue comme la capacité à absorber des chocs, à maintenir des fonctions essentielles et à s'adapter.

La littérature insiste sur deux points fondamentaux : la succession est un processus, non un événement, souvent long et conflictuel ; son succès dépend de mécanismes de légitimation du successeur auprès des différentes parties prenantes, et en premier lieu auprès du fondateur (De Massis, Chua & Chrisman, 2008 ; Le Breton-Miller, Miller & Steier, 2004 ; Sharma, Chrisman & Gersick, 2012 ; Chabaud & Sammut, 2014). La relation fondateur-successeur est ici appréhendée comme un mécanisme de gouvernance informelle qui conditionne la légitimité du successeur et, par ricochet, la résilience de l'organisation.

Nous proposons de répondre à la question suivante :

Comment la relation fondateur-successeur influence-t-elle la construction de la légitimité du successeur et, par conséquent, la résilience organisationnelle des entreprises familiales tunisiennes dans un contexte institutionnel incertain ?

Cadre théorique

Les travaux classiques distinguent succession de propriété et succession de direction, et décrivent des phases séquentielles : intégration, règne conjoint, désengagement. Dans les contextes non occidentaux, des synthèses récentes invitent cependant à dépasser ce cadre linéaire pour traiter la succession comme institutionnellement encastrée : les normes familiales, les attentes sociales et les contraintes économiques structurent le « comment » et le « quand » de la transmission. La gouvernance ne peut dès lors se réduire aux outils formels ; elle se joue

dans des arrangements relationnels et symboliques souvent implicites, au premier rang desquels figure la question de la légitimité du successeur.

Or, cette légitimité ne se réduit pas à la filiation (Miller, Le Breton-Miller & Lester, 2011 ; Gómez-Mejía et al., 2007). Elle se co-construit à plusieurs niveaux : auprès du fondateur (signal d'acceptation, délégation visible), auprès des salariés (crédibilité, justice perçue, capacité décisionnelle), auprès de la famille élargie (hiérarchie, arbitrages entre branches) et auprès des parties prenantes externes (banques, fournisseurs, clients). Des travaux récents montrent que le soutien parental et la reconnaissance intrafamiliale structurent l'acceptation du successeur, tandis que la littérature sur l'héritage (Radu-Lefebvre et al., 2024) insiste sur la dimension symbolique de ce processus : le successeur doit incarner une continuité identitaire tout en introduisant des changements. C'est précisément cette tension entre continuité et renouvellement qui relie la légitimité successorale à la question plus large de la résilience organisationnelle.

La résilience des entreprises familiales présente en effet des atouts reconnus — capital social, orientation long terme, valeurs partagées — mais aussi des vulnérabilités spécifiques : rigidités, conflits familiaux, concentration du pouvoir (Campopiano & De Massis, 2015). Des travaux sur les instruments de gouvernance montrent que la clarification des rôles et des règles peut soutenir la résilience en réduisant l'ambiguïté organisationnelle. La relation fondateur-successeur apparaît ainsi comme un levier central : en conférant ou en retenant la légitimité, le fondateur influence directement la stabilité interne, la continuité décisionnelle et la confiance des acteurs — dimensions essentielles de la résilience en environnement incertain.

Méthodologie

Compte tenu de la nature processuelle et socialement construite des phénomènes étudiés (reconnaissance, transfert d'autorité, tensions intergénérationnelles), une approche qualitative par étude de cas multiples a été privilégiée. Cette stratégie permet d'examiner en profondeur un phénomène complexe dans son contexte réel et de construire une logique comparative entre cas, visant l'identification de mécanismes explicatifs et de configurations récurrentes. L'échantillon est composé de cinq entreprises familiales tunisiennes opérant dans des secteurs variés (industrie, agroalimentaire, commerce, services). Le critère de sélection central était l'existence effective d'un processus successoral en cours, c'est-à-dire la présence d'au moins un successeur identifié et intégré à l'organisation au moment de l'étude. Les entreprises ont été choisies de façon à couvrir plusieurs stades du processus (intégration, règne conjoint, désengagement), permettant d'analyser les dynamiques relationnelles à différents moments de la transition générationnelle.

La collecte repose sur des entretiens semi-directifs conduits auprès de chaque dyade fondateur-successeur, à partir de deux guides distincts tenant compte de la spécificité de chaque position. Les entretiens avec les fondateurs portaient sur l'historique de l'entreprise, les motivations de transmission et la nature de la délégation. Ceux avec les successeurs se concentraient sur la trajectoire d'intégration, les résistances rencontrées, la perception de l'autonomie et les stratégies de légitimation. La durée moyenne des entretiens était d'une heure à une heure trente. Les données ont été complétées par des informations contextuelles (secteur, taille, structure familiale, rôle des membres de la fratrie).

L'analyse thématique a été conduite de manière systématique et itérative à l'aide du logiciel NVivo, en trois étapes : un codage ouvert (identification des thèmes émergents : délégation, contrôle, reconnaissance, confiance, visibilité, résistances), un codage axial (structuration en catégories analytiques distinguant formes de légitimité et configurations relationnelles), puis une analyse comparative inter-cas visant à dégager des patterns récurrents et des variations significatives.

Résultats

4.1 Quatre mécanismes structurants de la légitimité successorale

a) Transfert de responsabilités sans transfert d'autorité

Dans la majorité des cas, le successeur se voit progressivement confier des responsabilités opérationnelles, mais l'autorité stratégique demeure concentrée entre les mains du fondateur. Cette dissociation produit une situation de légitimité suspendue : le successeur est reconnu comme acteur organisationnel tout en restant perçu comme subordonné. Les salariés et cadres intermédiaires continuent alors de se référer prioritairement au fondateur pour les décisions majeures, renforçant la centralité de ce dernier et la dépendance de l'organisation à sa présence.

b) La reconnaissance symbolique du fondateur comme levier de légitimation

La légitimité du successeur ne repose pas uniquement sur ses compétences ou son niveau de formation. Elle dépend largement des signaux émis par le fondateur : valorisation publique, délégation visible, tolérance d'une zone d'autonomie. À l'inverse, une posture de contrôle permanent — reprises systématiques de décisions, contradictions publiques — empêche la construction d'une légitimité managériale stable. La légitimation apparaît ainsi comme un processus relationnel dans lequel le fondateur joue un rôle actif de « passeur » du capital symbolique associé à la direction.

c) Tension modernisation-paternalisme : apprentissage ou blocage

Les successeurs expriment fréquemment une volonté de modernisation (formalisation des processus, rationalisation des décisions, introduction d'outils de gestion) qui se heurte à des pratiques centralisées et paternalistes incarnées par le fondateur. Deux trajectoires se distinguent : dans certains cas, cette tension débouche sur une dynamique d'apprentissage et de transformation progressive ; dans d'autres, elle génère des conflits latents, une paralysie décisionnelle ou des contournements informels. Les tensions intergénérationnelles peuvent donc constituer soit un moteur de changement, soit un facteur de rigidification.

d) Filiation versus compétence : une articulation fragile

Les données révèlent la coexistence de deux registres de légitimité : l'un fondé sur la filiation et les normes familiales (ordre générationnel, aînesse, hiérarchie intrafamiliale) ; l'autre sur la compétence

managériale. Lorsque ces deux registres convergent, la succession tend à se stabiliser. Lorsqu'ils entrent en contradiction, des tensions émergent — contestations intrafamiliales, rivalités entre héritiers potentiels, résistances organisationnelles — fragilisant la cohérence du processus successoral.

4.2 Typologie des configurations relationnelles fondateur-successeur

L'analyse comparative des cinq cas permet de dégager trois configurations distinctes, associées à des trajectoires contrastées de légitimité et de résilience.

Dans la configuration de contrôle défensif, le fondateur maintient une centralisation forte du pouvoir. La délégation reste limitée et essentiellement technique ; le successeur est maintenu dans une position subalterne et confrontée à des signaux de défiance. La légitimité demeure fragile et entièrement dépendante du fondateur.

Dans la configuration d'accompagnement conditionnel, le fondateur délègue progressivement tout en conservant un droit de regard permanent. La reconnaissance est partielle et parfois ambivalente. Le successeur obtient une légitimité incomplète, conditionnée par la validation continue du fondateur.

Dans la configuration de copilotage structurant, la relation repose sur la confiance et une logique explicite de transmission. Le fondateur reconnaît le successeur comme décisionnaire et lui confère une autonomie réelle, assortie d'une clarification des rôles. Le successeur construit alors une légitimité robuste articulant filiation et compétence.

Le tableau suivant synthétise ces configurations et leurs effets respectifs.

Tableau 1. *Configurations relationnelles fondateur-successeur et résilience organisationnelle*

Configuration	Caractéristiques	Mode de délégation	Légitimité du successeur	Résilience organisationnelle
Contrôle défensif	Centralisation forte, défiance, contradictions publiques	Faible, essentiellement technique	Fragile, dépendante, contestée	Faible : dépendance au fondateur, rigidité, conflits latents
Accompagnement conditionnel	Soutien partiel, contrôle intermittent, signaux ambivalents	Progressive mais réversible	Partielle, instable, conditionnelle	Moyenne : adaptation possible mais lente, vulnérabilité en période de crise
Copilotage structurant	Confiance mutuelle, reconnaissance symbolique, clarification des rôles	Réelle et structurée	Robuste (combinant filiation et compétence)	Élevée : cohésion interne, continuité décisionnelle, adaptation

Discussion

La légitimité successorale comme mécanisme de gouvernance informelle

Un apport central de cette recherche est de montrer que la relation fondateur-successeur opère comme un mécanisme de gouvernance informelle déterminant. La succession ne dépend pas uniquement de la préparation du successeur ni de la planification formelle, mais de processus de reconnaissance et de transfert symbolique. Cette observation rejoint les travaux récents sur la légitimité familiale et organisationnelle comme variable structurante de la dynamique successorale : la légitimité ne se décrète pas, elle se construit dans l'interaction.

Succession et résilience : un lien médié par la clarté de l'autorité

Les résultats permettent d'articuler succession et résilience organisationnelle. La résilience des entreprises étudiées ne dépend pas seulement de ressources économiques ou de capacités techniques, mais de la stabilité interne de l'autorité. Lorsque la légitimité du successeur est fragile ou contestée, l'organisation entre dans une zone d'incertitude décisionnelle — arbitrages retardés, conflits de pouvoir, dépendance prolongée au fondateur. À l'inverse, une délégation visible et une reconnaissance explicite renforcent la cohésion et la capacité d'adaptation. La légitimité successorale apparaît ainsi comme variable médiatrice entre relation fondateur-successeur et résilience organisationnelle.

L'effet amplificateur du contexte tunisien

Dans le contexte tunisien, les tensions successorales sont exacerbées par l'environnement macroéconomique. Les contraintes de financement et l'incertitude institutionnelle réduisent la marge d'erreur managériale : la succession devient un enjeu stratégique immédiat, où l'entreprise doit simultanément préserver sa stabilité interne et répondre à des pressions externes fortes. La concentration du pouvoir autour du fondateur peut apparaître comme un facteur de sécurité à court terme, mais représente un risque à moyen terme en retardant la transmission effective du leadership.

Portée de la typologie proposée

La typologie en trois configurations relationnelles (contrôle défensif, accompagnement conditionnel, copilotage structurant) dépasse une lecture descriptive pour proposer une lecture typologique et structurelle de la succession. Elle suggère que la relation fondateur-successeur n'est pas un simple facteur psychologique, mais un déterminant structurant de la trajectoire organisationnelle. Ce cadre analytique est transférable à d'autres contextes émergents où les entreprises familiales se caractérisent par une gouvernance peu formalisée et une forte imbrication entre logiques économiques et logiques familiales.

Conclusion

Cette recherche a examiné la succession dans les entreprises familiales tunisiennes comme un processus de gouvernance particulièrement sensible en contexte économique et institutionnel incertain. À partir d'une étude qualitative multi-cas, elle met en évidence que la succession repose avant tout sur la construction de la légitimité du successeur, qui se joue dans la relation

fondateur-successeur et en particulier dans la capacité du fondateur à reconnaître le successeur comme autorité crédible et à rendre effectif le transfert du pouvoir.

Ce mécanisme conditionne la stabilité interne, la continuité décisionnelle et la confiance des acteurs qui sont des dimensions essentielles dans un environnement où les entreprises doivent simultanément préserver leur cohésion et maintenir leur capacité d'adaptation. En articulant relation successorale, légitimité et résilience, cette étude contribue à enrichir la compréhension des dynamiques de succession en contexte émergent, en soulignant la nécessité d'approches intégrant les dimensions organisationnelles, symboliques et institutionnelles de la transmission.

Comme toute recherche qualitative exploratoire, les résultats présentent des limites. Le nombre restreint de cas ne permet pas une généralisation statistique ; l'objectif poursuivi relève d'une généralisation analytique, visant à identifier des mécanismes relationnels transférables à des situations comparables. Des recherches ultérieures pourraient prolonger ces résultats par des démarches longitudinales, une approche quantitative sur un échantillon plus large, ou l'étude comparée des trajectoires de succession selon le genre (père-fils versus père-fille) pour examiner comment les normes sociales influencent les processus de légitimation dans les entreprises familiales tunisiennes.

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The Effect of Entrepreneurial Marketing Dimensions on Supply Chain Resilience in Tanzania

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Abstract

This study explores the influence of entrepreneurial marketing (EM) dimensions on supply chain resilience (SCR) amongst Tanzanian SMEs in the food processing sector. Anchored on the Resource-Based View (RBV) and Dynamic Capabilities Theory (DCT) as theoretical lenses, this study investigates the role of resource leveraging, proactiveness, customer intensity, innovativeness, and value creation on SCR. This is a quantitative study involving a survey with a structured questionnaire, with collected data being analysed through Structural Equation Modelling (SEM) to test the hypotheses of interest. This study found a positive relationship between each of the selected EM dimensions and SCR, with resource leveraging and proactiveness being the two most powerful predictors of SCR. The results show that strategic deployment and leveraging of resources, proactive anticipation of risks and unprecedented changes in the market landscape, and establishing and maintaining durable relationships with customers can help to improve SCR in environmentally resource-constrained and turbulent supply chain landscapes. This study contributes to supporting SME managers with practical insights on how they can develop SCR from an entrepreneurial marketing perspective. This study also advises policymakers on the design and execution of SME support programmes, as well as provides vital context-specific insights for industry associations and leaders supporting indigenous firms in Africa and beyond. Future studies should focus on investigating the role of digitalisation while establishing innovative policy interventions and solutions by which SCR could be strengthened.

Keywords: Entrepreneurial Marketing, Supply Chain Resilience, SMEs, Food Processing Sector

Introduction

The volatility of global markets, supply chain disruptions, and the increasing need for business adaptability have made supply chain resilience (SCR) a pressing issue, particularly for SMEs in emerging economies (Ponomarov & Holcomb, 2009; Al-Hakimi & Borade, 2020; Ali & Kausar, 2022). Globally, SCR has been extensively researched within large multinational organizations, specifically regarding digital transformation, strategic resource management, and risk mitigation (Christopher & Peck, 2004; Ivanov, 2020). While these studies offer valuable insights, they often fail to address the unique challenges faced by SMEs, which operate in resource-constrained environments with limited leverage over suppliers and institutional pressures (Ali & Kausar, 2022; Boadu & Sankoh, 2021). For instance, Tanzania's food processing sector is hindered by poor infrastructure, inconsistent raw material supplies, and high exposure to external shocks (Mbilinyi, 2019; Clarke & Estevez, 2019). Entrepreneurial marketing (EM) provides critical strategic approaches to revitalize these businesses, including resource leveraging, proactiveness, customer intensity, innovativeness, and value creation

(Hokmabadi, Rezvani, & de Matos, 2024). Although SCR literature has explored its role in organizational sustainability, studies statistically linking specific EM dimensions to SCR remain underdeveloped (Sturm, Hohenstein & Hartmann, 2023; Alshahrani & Salam, 2022).

Entrepreneurial marketing combines innovative practices with an entrepreneurial orientation to drive growth and adaptation in resource-constrained settings. Unlike conventional marketing, which relies on lengthy research and structured campaigns, EM leverages flexibility and customer engagement to maintain competitiveness (O'Cass & Sok, 2014; Kumar & Gupta, 2014). In developing economies like Tanzania, where SMEs operate in unpredictable environments, EM serves as a strategic avenue for enhancing resilience by helping firms respond proactively to disruptions (Suleiman & Mhando, 2021; Mafimisebi, Olagboye, & Obembe, 2024). While some scholars argue that EM's flexibility prepares firms to adapt rapidly to supply chain shocks (Haq & Aslam, 2023), others suggest its potential is diminished if SMEs lack the financial and technological resources to adopt these strategies (Daisy, Slamet, & Cahyadi, 2024; Mandal & Saravanan, 2019). These contradictions highlight the need for empirical studies to clarify the role of EM in building SCR.

While prior research has analyzed SCR in developed economies, the factors influencing SCR in African SMEs have been largely overlooked (Alshahrani & Salam, 2022; Goaill & Mohammed, 2021). Works by Golgeci et al. (2020) and Mandal & Saravanan (2019) reveal that SCR is determined by multiple factors, including digital transformation, entrepreneurial leadership, and strategic resource management. However, few empirical studies analyze how individual EM dimensions contribute to SCR, specifically within Tanzania's food processing SMEs (Khuan, 2024; Oyeyemi et al., 2023). Tanzanian food processing SMEs face distinct challenges, such as volatile supply chains, low technological uptake, and limited capital. These realities underscore the importance of understanding how EM can enhance resilience in this sector (Mbilinyi, 2019; Tukamuhabwa et al., 2024). Therefore, it is essential to investigate how entrepreneurial marketing can serve as a core resilience-building strategy.

This study aims to address this gap by analyzing the direct relationship between EM dimensions and SCR among SMEs in the Tanzanian food processing industry. Specifically, the research assesses the impact of resource leveraging, proactiveness, customer intensity, innovativeness, and value creation on supply chain resilience. While existing literature acknowledges these facets, it has largely ignored how they contribute directly to building resilience capacity in resource-limited environments. This study contributes to the literature by focusing on how these EM dimensions help SMEs withstand supply chain disruptions (Tukamuhabwa et al., 2024; Oyeyemi et al., 2023). By synthesizing existing literature and empirical findings, this research provides a theoretical basis for integrating EM practices into resilience measures, advancing both academic and managerial knowledge.

The findings of this study offer practical implications for policymakers, SME owners, and supply chain managers by providing evidence-based recommendations for strengthening resilience through EM. Theoretically, this study extends SCR models by incorporating EM dimensions, providing a novel perspective on resilience-building for SMEs (Ponomarov & Holcomb, 2009; Ivanov & Dolgui, 2020). Ultimately, this research informs scholarly discussion and practical applications regarding the strategic importance of EM in sustaining resilient supply chains.

Theoretical Background

The study is theoretically grounded in the resource-based view (RBV) and dynamic capabilities theory (DCT). The Resource-Based View (RBV), as posited by Barney (1991), suggests that firms can attain a sustainable competitive advantage by deploying valuable, rare, inimitable, and non-substitutable (VRIN) resources. This view is relevant to EM because SMEs often operate in uncertain conditions where resource leveraging is key to retaining operational stability (Eisenhardt & Martin, 2000). RBV is popular in supply chain resilience literature, showing that firms with superior capabilities in managing

resources will be better made to withstand and recover from disruptions (Al-Hakimi & Borade, 2020; Ali & Kausar, 2022).

Complementing RBV, the Dynamic Capabilities Theory (DCT) extends the notion of competitive advantage by emphasizing a firm's ability to integrate, build, and reconfigure internal and external competencies in response to rapidly changing environments (Teece, Pisano, & Shuen, 1997). DCT highlights that resilience is not merely about possessing key resources but also about the firm's ability to dynamically adapt to market disruptions (Erol & Kucuk, 2016). Studies in supply chain management have demonstrated that firms with strong dynamic capabilities are better equipped to anticipate and mitigate risks, ensuring continuity even under volatile conditions (Mandal & Saravanan, 2019; Tukamuhabwa et al., 2024).

Several studies have attempted to apply RBV and DCT to investigate supply chain resilience and entrepreneurial marketing strategies. For example, Ponomarov and Holcomb (2009) demonstrated that highly resilient firms tend properly managing their resource base; similarly, (Golgeci, Kuivalainen, & Kuivalainen, 2020) used DCT to show how firms dynamically reconfigure their supply chain process to react to the crisis and, in particular African SME business environment, Oyeyemi et al. (2023) established that firms that incorporate resource optimization (RBV) and adaptability (DCT) tend to maintain business operations despite experiencing disruption with supply chain.

In explaining the effect of entrepreneurial marketing on supply chain resilience, the two theories are complementary. RBV sheds light on what resources the firm should hold and settle on to produce sustained performance (Oshri et al., 2015). DCT is fundamental in illustrating how they could result in improved resilience in the context of SMEs. In some extents to where RBV may end proving a comprehensive and proactive set of organizational routines to be incorporated, However, DCT approaches provide proof on how firms can change to modify their resource base to reflect constantly changing environmental conditions and to shape the environment itself (Ivanov, 2020; Kumar & Gupta, 2014). The two theories provide a holistic perspective that demonstrates that a firm that leverages resources has a better ability to anticipate what to respond to or even learn and adapt to changing strategies to improve its supply chain resilience (Ivanov, 2020; Kumar & Gupta, 2014).

This study aims to investigate the relationship between entrepreneurial marketing dimensions (i.e., resource leveraging, proactiveness, customer intensity, innovativeness, and value creation) and supply chain resilience through RBV and DCT perspectives. The entrepreneurial marketing dimension of the resource leveraging can be explained in the case of RBV. Firms leverage resource position (i.e., financial resources, human resources, and network resources) for their strategic benefits (Boso et al., 2013; Celuch et al., 2015; Song, 2015). Multiple resources are always available through networks and previous experiences; firms can benefit from getting those resources from a range of stakeholders (Alvarez & Barney, 2007). Dyerson et al. (2016) stated that innovation and entrepreneurship internal and external business networks enhance the resilience of firms. The carefully strategic leverage of resources can enable a firm to catch up with market opportunity and smooth the business operation (Mafimisebi, Olagboye, & Obembe, 2024).

In the RBV perspective, the entrepreneurial marketing dimension of proactiveness is best leveraged through the DCT perspective. Intuitively, firms should act swiftly and decisively to avoid market threats. A proactive firm, with the help of resource leverage, should take the initial preemptive actions that traditional marketing can be missed. Thereby, SME can keep their activities in the cluttered marketplace and be more adaptable to other changes. By doing so, they can become more resilient to any disruptions in their supply chain (Haq & Aslam, 2023). On the other hand, the entrepreneurial marketing dimension of customer intensity is captured by both a resource-based view and dynamic capability theories. The greater extent of a firm's behavior toward customer satisfaction, demand stabilization, and decrease

uncertainty can lead to enhance their supply chain resilience. Through a constant dialogue with customers, firms become more efficient and heavily possess firm-specific knowledge gained from their respected customers (Tacit knowledge). As a result, customer-oriented capabilities enable SME to guide their supply chain to be more resilient (Makuya & Musonda, 2019). Innovativeness is closely explained through the dynamic capability lens. Through their experience, SME owners can initiate innovations into their firm operations. Innovation in products and services is important to balance disruption. However, innovation in market-oriented activities and supply chain relationship-oriented activities are more prone to situational planning. New practical ideas and approaches might create a better chance for a firm to exploit new supply chain capabilities (Ripoll & Vázquez, 2018).

Finally, the entrepreneurial marketing dimension of value creation best fits the case of RBV. Long-term supply chain resilience is mainly accomplished through value-creation strategies taken by SME. Kamal & Sadique (2020) stated that "social capital, collaboration and problem-solving capabilities increase firm's resilience". In essence, partnership strengthening and joint problem-solving initiatives enhance the value creation capabilities of supply chain partners. Additionally, value creation capabilities can be observed from proactiveness and customer-oriented capabilities and innovation activities as well. It is the combination of resource advantage and innovative exploitative strategies to deal with any type of future uncertainty. They represent the absorptive capacity, innovation and entrepreneurship, and resource mobilization capabilities as seen in Marmenout & Martin's (2019) conceptual paper. The stronger the supply chain, the more value creation capability, and the better they can become resilient in the long term.

By incorporating these theories, this study develops a theoretical framework to investigate how entrepreneurial marketing dimensions engender supply chain resilience in Tanzania's SMEs and it adds to a growing body of knowledge in resilience strategy research.

Hypotheses Formulation

Using the theoretical knowledge built from the Resource-Based View (RBV) and Dynamic Capabilities Theory (DCT), this research develops hypotheses that can be used to assess the association between entrepreneurial marketing (EM) dimensions and supply chain resilience (SCR) in Tanzanian SMEs. The standing hypothesis (developed above) is supported by empirical studies that show a significant association between resource leveraging, proactiveness, customer intensity, innovativeness, and value creation with business resilience and adaptability.

Empirical studies have shown that resource leveraging enhances firms' ability to sustain operations in times of supply chain disruption, as follows: Mafimisebi, Olagboye & Obembe (2024) found resource leveraging to strengthen firms' capability to allocate scarce resources in a manner that demonstrates greater resilience to external shocks. Ali & Kausar (2022) provided empirical evidence for resource leveraging to optimize resources against the risk of disruption in supply chains. Oyeyemi et al. (2023) reported financial and human capital resource leveraging to enhance supply chain stability among resilient SMEs. Mandal & Saravanan (2019) also showed that firms that leverage their resources during strategic decision-making experience strengthened resilience. Finally, Kumar & Gupta (2014) provided evidence for resource leveraging boosting supply chain resilience. It can, therefore, be hypothesized that:

H1: Resource leveraging has a positive influence on supply chain resilience for Tanzanian SMEs.

Proactiveness, as an important EM dimension, allows firms to anticipate risks in supply chains and take necessary measures to reduce potential supply chain disruptions and disturbances. Haq and Aslam (2023) reported that proactive firms suffer less operational disturbance and maintain stronger supply

chain networks. Erol and Kucuk (2016) provided empirical evidence that proactive strategies enable firms to recover from supply chain shocks. Golgeci et al. (2020) empirically demonstrated that firms that continuously scan the business environment and implement forward-thinking strategies are more resilient. Tukamuhabwa et al. (2024) provided empirical evidence that proactiveness in building flexibility in supply chain management enabled firms to minimize the effect of disruption in supply chains. Finally, Daisy et al. (2024) empirically demonstrated that proactive firms outperform reactive firms in crisis management. Hence, we formulate our hypothesis as:

H2: Proactiveness positively influences supply chain resilience among Tanzanian SMEs.

Customer intensity refers to the extent to which firms are connected and committed to their customers in terms of maintaining the customers' demand stability for the firm and, in turn, continual operations. Makuya and Musonda (2019) found evidence that firms that maintain close relationships with their customers are more resilient in times of uncertainty. Turbulent markets and order fulfilment: Manager and customer perceptions: Mendes and Santos, 2008; Trkman and (Makuya and Musonda, 2019). Mishra (2020) found evidence that customer-driven firms experience less volatility in their supply chains, implying that their supply chains are more stable (Mishra, 2020). Ripoll and Vázquez (2018) found that a firm's orientation towards its customers enables it to deal and adapt faster to changes in demand (Ripoll and Vázquez, 2018). Ivanov (2020) found that firms that ensure that their supply chain strategies are in line with their customer expectations were more resilient from supply chain disruptions (Ivanov, 2020). Kamal and Sadique (2020) found that businesses that focus on customer engagement created stability for their business in the long-term (Kamal and Sadique, 2020). Thus, we propose the following hypothesis:

H3: Customer intensity positively impacts supply chain resilience of SMEs in Tanzania

Innovativeness is generally regarded as a vital element that facilitates the enhancement of resilience by enabling firms to develop alternative solutions in times of disruption. For instance, Ponomarov and Holcomb (2009) found that firms that take innovation initiatives are more capable of tackling supply chain challenges. Similarly, Oyeyemi et al. (2023) found that innovative small and medium enterprises (SMEs) could develop adaptive strategies that would proffer solutions capable of sustaining business operations despite external shocks. Alshahrani and Salam (2022) showed that firms that have previously innovated on continuity solutions are more likely to recover from supply chain perturbations faster. Golgeci, Kuivalainen, and Kuivalainen (2020) provided empirical evidence that showed that the more innovative firms are, the stronger their capacity to respond to changes in the market. Lastly, Daisy, Slamet, and Cahyadi (2024) emphasized that firms that integrate innovative approaches into supply chain management display a higher level of resilience. Based on the above empirical observations, the following hypothesis is developed:

H4: Innovativeness has a positive effect on supply chain resilience among Tanzanian SMEs.

Value creation enhances long-term resilience through the development of stronger business relationships and competitive advantage. Ivanov (2020) suggested that firms focusing on value creation sustain stronger supply chains during times of economic downturns. Mbilinyi (2019) found that a firm that improves its value propositions ensures market stability. Evidence from Mafimisebi, Olagboye, and Obembe (2024) found that SMEs that enhance value co-creation with suppliers and customers demonstrate few supply chain disruptions. Mandal and Saravanan (2019) found that firms that integrate value-driven strategies into their operations exhibit greater flexibility to supply chain risks. Kamal and Sadique (2020) showed that firms that focus on value creation develop long-term supply chain relationships that generate resilience. Hence, the final hypothesis is developed:

H5: Value creation positively affects the supply chain resilience among Tanzania SMEs.

Combining these empirical works, the research hypotheses build a strong case for investigating marketing entrepreneurial dimensions as the driver of supply chain resilience. The following methodology section discusses the research design, data collection approaches, and techniques for data analysis used to test the research hypotheses.

Methodology

Reaserch Design

This study employed an explanatory research design in establishing the causal relationship between entrepreneurial marketing dimensions and supply chain resilience of the food-processing SMEs in Tanzania. The choice of explanatory research design is consistent with the nature of this study, that is, to test hypotheses and establish the direction and strength of relationships between variables of interest (Zikmund et al., 2013). The study used a cross-sectional research design, where data were collected only once during a study period (Easterby-Smith et al., 2021). Such a cross-sectional design is well-suited for scientists to take a composite view of a specific targeted sample of a large population in a region (Katakam et al., 2021; Bordens & Abbott, 2022). The study was deductive, as it involved the use of a structured theoretical model with a set of predetermined hypotheses that were tested (Woiceshyn & Daellenbach, 2018).

Sampling design

The target population in this study consisted of food processing SMEs in Tanzania. The study focused on registered food processing SMEs in Dar es Salaam, Tanzania. According to the Tanzania Revenue Authority (TRA, 2023), there are approximately 719 food processing SMEs in Tanzania. A stratified random sampling technique was adopted in this study to ensure that the three districts of Dar Es Salaam are well taken care of by achieving full representation of each. To ascertain this intention, the demarcation of the districts was considered as the basis of these strata. The rationale for using the stratified method is that it necessitates the random allocation of samples, which made the units assigned to a given stratum share the same or similar elements. 300 food processing SMEs were considered as a sample size from the three districts (Kinondoni, Ilala, and Temeke); this is about 42% of the total food processing sector population of 719. Krejcie and Morgan's formula (1970) was used in determining the sample size to make sure that the sample yields statistically meaningful power (Hansen et al., 2018). The researcher adopted a purposive sampling technique to sample respondents (SMEs owners and managers) who were at the strategic level of decision-making in their respective SMEs.

Data Collection Procedure

Primary data was collected via a structured questionnaire that was distributed using a drop-and-pick method to enhance response rates (Creswell & Creswell, 2023). The questionnaire consisted of previously validated scales borrowed from prior empirical studies to measure constructs of interest. The instrument was pre-tested by industry experts to refine items that were ambiguous and unclear and to improve reliability. The data was collected over 3 months. Reminders were given to respondents to enhance response rates. The instrument was divided into five sections. Part A contained questions on general demographic information of the firms, Part B: entrepreneurial marketing dimensions, Part C: Indicators of supply chain resilience.

Measures

The independent variables (i.e., resource leveraging, proactiveness, customer intensity, innovativeness, and value creation) are all operationalized through multiple-item Likert scales adapted from Becherer et al. (2012) and Morris et al. (2002). Resilience indicators (adaptability, robustness, and agility) were used to assess supply chain resilience (Christopher and Peck 2004, Hair et al. 2021). There are also control variables which are firm age, firm size, and industry experience, to reduce the effect of extraneous effects.

Validity and Reliability

The content validity of the questionnaire was confirmed by academic experts and industry practitioners to ensure compliance with the extant literature and the empirical best practice (Abd Gani et al., 2020). Convergent validity requires an AVE value threshold of 0.5 (Hair et al., 2017). Secondly, discriminant validity was evaluated using the Fornell-Larcker Criterion and HTMT ratio (Hair et al., 2015). Internal consistency reliability was assessed via a) Composite reliability (>0.7) and Cronbach's alpha (>0.7) (Hair et al., 2019). For the estimation of common method bias, Harman's single-factor test was conducted with zero single factor explaining the majority of all the variance is <50%.

Methods of Analysis

Descriptive and inferential statistics were used in data analyses. Means, standard deviations, and frequencies as descriptive statistics were generated through SPSS 26 to summarise the respondent characteristics and key variables. Hypothesis testing was employed using Partial Least Squares Structural Equation Modeling (PLS-SEM), a non-parametric method using the SEMinR package with R 4.3.3 to test these hypotheses and SEM analysis on consumer data to obtain robust model estimation (Hair et al., 2021). A bootstrapping method with 5,000 re-samples was applied to test the significance of path coefficients (Zhao et al., 2010). Normality items were performed by looking for skewness and kurtosis values (Sarstedt et al., 2021). We also checked the Variance Inflation Factor (VIF) values to identify multicollinearity issues among predictors and ensure they were not related to each other.

Ethics Considerations

Ethical clearance was sought and obtained from the University of Dar es Salaam's Research Ethics Committee. Participation in the study was a choice of respondents after obtaining their informed consent at the beginning of data collection. Data were handled confidentially and anonymously by coding responses and storing them in password-secured files (Creswell & Creswell, 2023). The study followed the Ethical stipulations given by the University and International research Ethics guidelines to make sure ethical research standards are adhered to so as to ensure research integrity and protection of respondents as an important part of the study.
Such a combination assures that a rigorous and systematic way of conducting this study is attained (international journal of applied) to examine how entrepreneurial marketing dimensions affects SCR of the Tanzania SMEs.

Results

Results

Results show that most interviewed SMEs are micro and small enterprises, whereby 141 registered firms (55.3%) have less than five workers, followed by 107 firms (42.0%) employing 5-49 persons. About 7 firms (2.7%) employ 50–100 individuals, and the rest, suggesting that food processing SMEs in Tanzania are majorly small-scale enterprises.

With respect to how long the SME have been in business, the analysis shows that 90 SMEs (35.3%) have been in business for 6-10 years, and this is followed by 76 firms (29.8%) having being in business for 3-5 years. In addition, 69 firms (27.1%) have been in operation for more than 10 years, whereas only 20 SMEs (7.8%) were comparatively young operating businesses between 1 and 2 years. This result implies that the majority of the SMEs in the industry have a strong hold of the market, with a relatively large number of SMEs in the industry demonstrating business longevity.

The analysis by sub-sector, shows the largest subsector representation of the food processors being grain millers (52 firms, 20%), bakeries and confectionery (47 firms, 19%), followed by fruit processors (37 firms, 15%), fish processors (36 firms, 14%) and beverages (31 firms, 12%). This is consistent with the variety of the food processing industry, however, it can be deduced that most subsectors have small representation. These include edible oils (21 firms, 8%), milk processors (18 firms, 7%), tea and coffee (10 firms, 4%), and sugar processors (2 firms, 1%).

Table 1: Sample Characteristics

Characteristic	Group	Frequency	Percentage
Firm Size (Number of Employees)	< 5 employees	141	55.3
	5–49 employees	107	42.0
	50–100 employees	7	2.7
Years in Operation	1–2 years	20	7.8
	3–5 years	76	29.8
	6–10 years	90	35.3
	Above 10 years	69	27.1

Measurement model evaluation

As all variables of this study are formative constructs, we conducted the measurement model assessment by evaluating convergent validity, collinearity, and indicator significance and relevance. The convergent validity of formative constructs was examined by redundancy analysis. Results indicate that all formative constructs have a significant relationship with the corresponding global reflective measures, with all path coefficients higher than the 0.7 threshold, which confirms sufficient convergence.

To assess collinearity among indicators, we checked Variance Inflation Factor (VIF) values. All VIF values were lower than the threshold value of 3. As these results suggest, collinearity is not a concern among indicators, and indicators provide distinct contributions to their associated constructs. We conducted bootstrapping with 5,000 resamples to examine the significance of indicator weights and loadings. The results show that all indicators have significant weights ($p < 0.05$) and adequate loadings, indicating that they are relevant in measuring constructs.

Results of Structural Model

Partial Least Squares Structural Equation modeling (PLS–SEM) was used to estimate the structural model for hypothesis testing. Table 2 shows the path coefficients and significant levels of entrepreneurial marketing dimensions on SCR. The analysis indicated that resource leveraging (β =

0.216, p 0.05) was significant. Similarly, Proactiveness (β = 0.134, p 0.01) was significant, and Customer intensity (β = 0.180, p 0.01) was also significant. However, the results for innovativeness (β = 0.-0.115, p 0.05) and value creation (β = -0.086, p > 0.05) do not significantly influence SCR.

Table 2: Structural Model Path Coefficients

Path	β (Path Coefficient)	t-Statistic	p-Value	Supported?
Proactiveness → SCR	0.134	2.885	<0.01	Yes
Innovativeness → SCR	-0.115	-0.932	>0.05	No
Resource Leveraging → SCR	0.216	2.355	<0.05	Yes
Customer Intensity → SCR	0.180	2.881	<0.01	Yes
Value Creation → SCR	-0.086	-0.917	>0.05	No

Bootstrapping Confidence Intervals

To ensure the robustness of the results, a bootstrapping procedure with 5,000 resamples was also employed to examine the confidence intervals of the path coefficients. Table 3 summarizes the confidence intervals obtained through bootstrapping, which confirm the robustness of the results. As illustrated in Table 3, the confidence intervals for resource leveraging, proactiveness, and customer intensity do not contain 0, thus supporting their significant positive impact on SCR. On the other hand, for innovativeness and value creation, the confidence intervals contain 0, and, hence, their non-significance is confirmed. This confirms that Tanzanian SMEs are resilient based on proactive, customer focus and efficient use of resources and not on an innovative and value-creation basis.

Table 3: Bootstrapping Confidence Intervals

Path	5% CI	95% CI	Supported?
Proactiveness → SCR	0.047	0.200	Yes
Innovativeness → SCR	-0.163	0.209	No
Resource Leveraging → SCR	0.036	0.281	Yes
Customer Intensity → SCR	0.066	0.255	Yes
Value Creation → SCR	-0.137	0.151	No

Discussion of Findings

The results of the study show that proactiveness, resource leveraging, and customer intensity significantly influence SCR among Tanzanian SMEs. Innovativeness and value creation have no statistically significant effect. These results differ from previous studies emphasizing the importance of innovation and value creation in building resilience, implying that the environment in which businesses operate may determine the extent to which these dimensions influence resilience in a resource-constrained environment.

Resource leveraging was found to be significantly and positively related to SCR. This result supports extant studies' (Ali & Kausar, 2022; Mafimisebi, Olagboye, & Obembe, 2024) contention about the importance of effectively utilizing financial, human, and network resources to sustain the supply continuity of firms. SMEs with the ability to optimally utilise their resources strategically and constructively stand a higher chance of effectively managing disruptions and sustaining the operations

of their firms despite the multiple supply chain shocks they face. This result also follows that from environments where resource constraints may abound; firms that focus on maximising the value of available resources can significantly boost their resilience to supply chain shocks.

Proactiveness also had a significant and positive impact on SCR, supporting our earlier argument that firms that anticipate and brace themselves for possible disruptions suffer less from adverse developments (Haq & Aslam, 2023; Mandal & Saravanan, 2019). The ability to anticipate the risks of supply chain risks and to engage in pre-emptive action fosters the development of adaptive capabilities and minimises their susceptibility to disruptions among SMEs. These results imply that cultivating a culture of proactiveness in SMEs can hold the key to enhancing resilience in dynamic and uncertain marketplaces.

Customer intensity was identified as another crucial aspect for improved SCR. Those firms that maintain constant (close) contact with their customers have more stable demand patterns and relatively less uncertainty. This contributes to the stability of supply chains (Makuya & Musonda, 2019; Oyeyemi et al., 2023). The findings of this study are supported by prior studies, as the ties established with customers would translate into goodwill and/or trust that can be exploited during supply chain disruptions. SMEs that focus on customer intensity would gain the goodwill of their customers, who could easily be called in when disruptions occur. Dedication to customer intensity relative to competitors will result in customers supporting such firms during periods of disruptions resulting from climate change. This will guarantee that the affected SMEs are kept in business.

Innovativeness had no statistically significant effect. These results differ from previous studies emphasizing the importance of innovation in building resilience, implying that the environment in which businesses operate may determine the extent to which these dimensions influence resilience in a resource-constrained environment. One possible explanation as to why innovativeness did not significantly contribute to the CSR of SMEs is related to the financial and technological constraints faced by Tanzanian SMEs. While evidence suggests that innovativeness is associated with resilience in resource-endowed environments (Oyeyemi et al., 2023), SMEs in developing economies may find it challenging to implement innovation due to limited access to financial resources and advanced technological infrastructure (Edeh et al., 2024). Hence, their ability to exploit innovation in responding to supply chain disruptions remains constrained. Also, innovativeness might contribute to long-term competitiveness rather than short-term resilience as most SMEs facing disruptions might prioritize survival strategies, such as resource optimization and proactive risk management, over resource-demanding activities, such as innovation (Ivanov, 2020).

Another plausible explanation for this finding is the type of innovation focus undertaken by SMEs, as the researchers note. Many firms focus on product- or service-related innovations rather than process or logistical-type innovations that might prove more effective for supply chain resilience. Extant research has found that firms on the forefoot of operational and supply chain innovation were best placed for curbing disruption [66]. Thus, Tanzanian SMEs may need to consider moving their innovation focus from products onto supply chain processes and technology adoption as well as flexible supplier relationships for resilience.

In the same vein, the non-significance of value creation in enhancing SCR might be explained by weak supply chain networks. Many Tanzanian SMEs operate in fragmented supply chains with limited collaboration among suppliers, distributors, and customers (Golgeci et al., 2020). While large firms co-create value through strong, mutually beneficial partnerships, SMEs may face difficulties in establishing long-term relationships that facilitate their ability to absorb shocks. Moreover, SMEs often have relatively low bargaining power, limiting their ability to negotiate resilient supply chain contracts and influence value co-creation efforts with their suppliers and customers (Mandal & Saravanan, 2019).

Another possible explanation could have something to do with the perception of value creation within the SME sector. In a resource-constrained context, expenditures on relationships and value-added services may be perceived as a secondary priority, particularly in circumstances where businesses have more immediate financial constraints (Mbilinyi, 2019). For such contexts, many SMEs may regard value creation as an additional cost rather than an imperative resilience enhancement strategy. Consequently, firms may be more committed to securing raw materials and cost reduction than long-term values-based partnerships, making the effect of value creation on SCR limited.

The findings indicate that in environments with limited resources, SMEs may benefit more from resilience through strategic uses of resources and risk management than through innovation or value creation. That is not to say that these dimensions of innovation and value creation aren't important; rather, their importance may depend on financial capacity, technological readiness, and integration with supply chains.

Conclusion

This study aimed to investigate the effect of dimensions of entrepreneurial marketing on supply chain resilience among Tanzanian SMEs in the food processing industry. The results revealed that three of the five dimensions of entrepreneurial marketing (proactiveness, resource leveraging, and customer intensity) were statistically significant predictors of supply chain resilience of SMEs in the food processing industry, while innovativeness and value creation did not influence supply chain resilience. These findings provide useful insights in the existing literature by signifying strategic factors for strengthening supply chain resilience of SMEs operating in dynamic and uncertain environments. The study highlights the significance of a proactive strategy, proper utilisation of available resources, and maximisation of relationships with customers to minimise supply chain disruptions.

The study also implies that in order to enhance their adaptability to unforeseen circumstances in the supply chain, SMEs must incorporate adaptive strategies into their business models. While innovativeness and value creation will ultimately help SMEs remain competitive in the future, their resilience-enhancing effects could not be confirmed as significant. These findings demonstrate that SMEs must balance their entrepreneurial marketing orientation with supply chain management strategies to manage long-lasting businesses while enhancing resilience.

Managerial recommendations

SME managers should be proactive in strategies to anticipate and preempt potential supply chain disruptions. This comprises contingency planning, building alternative supply sources, and utilising digital technologies for market intelligence. SME managers should also focus on leveraging resources effectively to maximise operational efficiency. SME leaders should ensure that their firms have flexible and adaptive resource allocation mechanisms in place to allow them to respond rapidly to disruption.

SMES must focus on strengthening relationships with their customers. By being closely engaged with customers and using feedback loops, SMEs will be better able to forecast changes in demand and adapt their supply chain strategies. Customer-demand-led supply chain flexibility can help SMEs build resilience and competitive advantage.

Policy recommendations

They lack the resources and expertise to invest in proactive and resource-efficient strategies. Policymakers should develop support programmes to improve SMEs' access to finance and technology. Government agencies should promote digital supply-chain solutions that support transparency, efficiency, and responsiveness. In addition, governments should promote training programmes to support SME capacity for supply-chain risk management and resilience planning.

Additionally, there should be an emphasis on fostering collaborative networks between SMEs, larger corporations, and industry associations to enhance knowledge sharing and collective risk management. Policymakers will need to devise frameworks that promote SME integration in resilient supply chain ecosystems to ensure sustainable business expansion and economic stability.

Theoretical Implications

From a theoretical perspective, this study makes a contribution to the literature on supply chain resilience and entrepreneurial marketing by demonstrating the importance of proactive strategies, resource leveraging, and customer intensity in enhancing SMEs' resilience. Future research should further refine theoretical models that integrate entrepreneurial marketing dimensions with resilience frameworks to gain a more holistic understanding of these relationships. Scholars should systematically examine the interaction between external environmental factors, such as regulatory changes and technological advancements, and their moderating effects on supply chain resilience.

Further research could examine the generalizability of the results by conducting a cross-industry analysis of the generalizability of these relationships within and beyond the food processing sector. A longitudinal research design can be adopted with richer results to analyse the effects of entrepreneurial marketing practices on resilience. New conceptual frameworks such as dynamic capabilities theory and resource-based views could help enrich the theoretical explanations of how SMEs mediate supply chain disruption.

Future Research Directions

Further research can be conducted to consider the moderating and mediating effect of other environmental factors such as market volatility, regulation policies, and technology advancement on the relationship between entrepreneurial marketing dimension and supply chain resilience which will add value to the work. A longitudinal study of a similar nature can be conducted in the future to see the variation of relation over time. The study can further be analysed across sectors to see whether it holds across all sectors as it is doing in the food processing sector.

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The Specialization Resilience Paradox: When Export Concentration Protects African Economies from Global Shocks, 2005-2024

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Abstract

This paper investigates the existence of a specialization resilience paradox in African trade, challenging the established view that export diversification is the primary buffer against global shocks. Drawing from capabilities theory and transaction cost economics, the study employs a quasi-experimental research design using high-frequency data from the CEPII-BACI database (2005–2024), encompassing 1,006 country-year and 1.6 million product-year observations across 54 African economies. Methodologically, it identifies exogenous global demand shocks at the HS6 product level and estimates two-way and triple fixed-effects models to isolate causal effects. Findings robustly reveal the paradox: during shock years, higher product concentration is associated with significantly better export performance ($\beta = 1.106$, $p = 0.021$), while greater partner diversification correlates with worse outcomes ($\beta = -1.057$, $p = 0.040$). At the micro level, product-specific market diversification amplifies, rather than buffers, negative shock impacts ($\beta = -0.460$, $p < 0.001$). These effects are most pronounced among commodity-dependent economies, where deep specialization provides the strongest shock absorption. The results withstand multiple robustness checks, including alternative shock thresholds and two-way clustering. The interaction between pre-existing deep specialization and entrenched supply chains creates a reinforcing effect that confers resilience. The study concludes that in the African context, characterized by concentrated comparative advantages, strategic deepening of existing export sectors offers a more effective path to short-term resilience than broad horizontal diversification. Consequently, policy prescriptions for the African Continental Free Trade Area (AfCFTA) should prioritize building resilient regional value chains within core competitive advantages

1. Introduction

The global trading system is undergoing a period of profound transformation, increasingly defined by geoeconomic fragmentation, climate-related disruptions, and strategic recalibrations of global supply chains (WTO, 2023; IMF, 2024). Within this turbulent environment, developing economies face amplified vulnerabilities, particularly those reliant on precarious international commodity markets and concentrated trade relationships. For African nations, these external headwinds intersect with persistent structural challenges, including limited industrial diversification, infrastructure deficits, and institutional constraints, creating a complex landscape for achieving sustainable and resilient economic growth (AfDB, 2023; UNCTAD, 2023).

Africa's integration into the world economy remains characterized by a pronounced dependence on the export of primary commodities minerals, fuels, and agricultural products to a limited set of traditional trading partners. This pattern of trade, a legacy of colonial economic structures and persistent comparative advantages, has long been associated with macroeconomic volatility, susceptibility to terms-of-trade shocks, and challenges in fostering inclusive development (Collier & Goderis, 2012; Freund & Rocha, 2011). The recurring impacts of global crises, from the 2008-09 financial collapse to the more recent COVID-19

pandemic and geopolitical tensions, have starkly underscored the risks inherent in such concentrated and undiversified export profiles (World Bank, 2023).

Institutional and policy responses to this vulnerability have increasingly centered on the imperative of export diversification. This prescription is deeply rooted in economic theory, drawing an analogy from financial portfolio management: spreading exports across a broader basket of products and geographic markets mitigates the risk associated with demand or price shocks in any single sector or destination (Brainard & Cooper, 1968; Koren & Tenreyro, 2007). The empirical literature, particularly in the African context, largely reinforces this view, linking high commodity concentration to greater output volatility and slower recovery from external downturns (Elhiraika & Mbate, 2014). This theoretical and empirical consensus underpins one of the continent's most ambitious contemporary initiatives: the African Continental Free Trade Area (AfCFTA). By creating a single continental market, the AfCFTA aims explicitly to reduce trade costs, stimulate industrial diversification, and ultimately build economies that are more resilient to external shocks (World Bank, 2020; AfCFTA Secretariat, 2023).

However, the diversification paradigm, while theoretically appealing, may not account for the full spectrum of real-world costs and context-specific factors. A nascent but growing strand of critical literature suggests that diversification is not a costless strategy. It requires significant investments in new productive capabilities, entails coordination frictions and informational asymmetries in unfamiliar markets, and may dilute scarce managerial and institutional resources (Cadot et al., 2011). In contrast, deep specialization in existing comparative advantages often in primary commodities for many African states may confer underappreciated resilience benefits. These include entrenched supply chain relationships, deep sector-specific expertise, established logistics corridors, and economies of scale that can enable stability and swift adaptation during periods of global disruption (Berman & Martin, 2012). Consequently, a critical and unresolved empirical question emerges: in the specific structural context of African economies, does pre-existing export diversification unequivocally enhance resilience to global trade shocks, or could deep specialization serve as an alternative, and perhaps more viable, buffer?

Despite its central importance for trade policy, rigorous causal evidence on this question remains scarce. Much of the existing empirical work on diversification and resilience in Africa relies on correlational panel data analyses vulnerable to omitted variable bias (Manwa & Moyo, 2022). Few studies employ research designs capable of isolating the causal moderating role of trade structure by leveraging exogenous sources of variation in global demand. Moreover, there is a notable lack of high-frequency, product-level analyses that can unpack the microeconomic mechanisms through which diversification or specialization might condition shock impacts (Eaton et al., 2016). This gap is particularly acute in the context of the AfCFTA's implementation, as policymakers require an evidence-based understanding of which pre-existing trade structures are most conducive to weathering the ongoing volatility of the global economy.

To address these gaps, this study investigates the following research question: To what extent does pre-existing export diversification across both products and destination markets moderate the impact of exogenous global trade shocks on the export performance of African economies? We employ a quasi-experimental empirical strategy, leveraging high-frequency,

product-level international trade data from the CEPII-BACI database for the period 2005–2024. Our methodology constructs a precise measure of external shocks by identifying sharp, year-on-year declines in global demand at the Harmonized System (HS) 6-digit product level, following the logic of the "world-product shock" approach (Bems et al., 2011; Eaton et al., 2016). We then analyze how these plausibly exogenous shocks differentially impacted African exporters based on their pre-shock levels of product and market concentration, using high-dimensional fixed-effects models to control for unobserved heterogeneity.

This paper aims to provide novel empirical evidence on the diversification-resilience nexus in Africa. Based on model estimations, the paper offers timely insights into the protective value of different export structures against real global shocks, providing a crucial assessment as the AfCFTA moves toward fuller implementation. Accordingly, it offers policy implications to foster more resilient trade patterns, promote sustainable export growth, and enhance economic stability across the continent.

The paper is organized as follows: Section 2 reviews the theoretical and empirical literature on trade diversification, resilience, and the AfCFTA. Section 3 details the data, variable construction, and econometric methodology. Section 4 presents the descriptive statistics and empirical results. Section 5 discusses the findings, explores their implications, and outlines policy recommendations. Section 6 concludes.

2. Literature Review

2.1 The Diversification Doctrine: Theoretical Foundations and Empirical Consensus

The prescription for export diversification as a primary mechanism for achieving economic resilience is deeply embedded in development economics and trade theory. This paradigm is anchored in the application of portfolio theory to international trade (Brainard & Cooper, 1968), which posits that spreading a nation's export earnings across a diverse basket of products and geographic markets reduces aggregate income volatility by mitigating risks from sector-specific or partner-specific demand shocks (Koren & Tenreyro, 2007). The theoretical appeal of this "portfolio effect" is that it functions as a built-in stabilizer, smoothing national income and consumption in the face of external turbulence (di Giovanni & Levchenko, 2012).

Empirical research, both globally and within Africa, has largely reinforced this theoretical expectation. Cross-country studies consistently find that economies with more diversified export structures experience lower GDP growth volatility (Caselli et al., 2020). In the African context, the vulnerability associated with concentrated, commodity-dependent export profiles is well-documented. High commodity concentration is robustly linked to deeper recessions and slower recoveries from external shocks (Freund & Rocha, 2011; Elhiraika & Mbate, 2014), cementing diversification as a central policy objective for building macroeconomic stability. This evidence forms the bedrock of major continental initiatives, most notably the African Continental Free Trade Area (AfCFTA), which explicitly aims to enhance resilience by creating a single market to foster product and market diversification (World Bank, 2020).

The urgency of this policy goal is underscored by persistent structural challenges. Analyses show that African exports remain significantly more concentrated than those of other

developing regions, and the continent's least developed countries face a pronounced "double diversification gap" across both products and markets (Weldemicael, 2020). This gap leaves their export earnings acutely exposed to external shocks, a vulnerability magnified in the contemporary global environment characterized by slower growth, geopolitical fragmentation, and rising protectionism (Abrego et al., 2020).

2.2 Mounting Critiques and Contextual Complexities

Despite this dominant narrative, a significant and growing strand of literature questions the universal applicability and automatic benefits of diversification, particularly for economies with structural constraints. Critics highlight substantial and often-overlooked real-world frictions and costs.

First, diversification is not a costless strategy. Successfully entering new product lines or geographic markets requires overcoming significant discovery costs, building new supply chain relationships, and complying with unfamiliar regulations investments that strain the limited managerial, financial, and institutional resources common in developing economies (Cadot et al., 2011). This aligns with theoretical work on the "hump-shaped" pattern of diversification, where initial specialization may yield growth benefits before broader diversification becomes advantageous (Cadot et al., 2011). Second, the empirical link between diversification and resilience in Africa is more nuanced than the orthodoxy suggests. The relationship is highly context-dependent, varying with structural factors such as the type of commodity dependence, existing productive capabilities, and the quality of institutions (Sawadogo et al., 2024). For instance, strong institutional quality including control of corruption, government effectiveness, and regulatory quality has been shown to be a critical enabler of trade competitiveness under agreements like the AfCFTA (Adem et al., 2023), suggesting that the benefits of diversification policies are contingent on the environment in which they are implemented.

Furthermore, deep specialization in a narrow range of products, often seen as a vulnerability, may confer underappreciated resilience benefits. Specialization can foster entrenched expertise, established logistics corridors, and economies of scale. During systemic crises, these deep capabilities and trusted buyer-supplier relationships may provide a crucial buffer by enabling more reliable coordination and adaptation than fragmented, nascent export ventures (Beverelli et al., 2018; Berman & Martin, 2012).

2.3 Methodological Evolution and Persistent Gaps

The empirical debate has evolved alongside methodological advancements. Early studies establishing the diversification-resilience link often relied on correlational panel data analyses, which risk confounding due to omitted variable bias. A significant innovation has been the use of high-frequency, product-level exogenous demand shocks to isolate how pre-existing trade structures condition economic outcomes (Eaton et al., 2016; Bems et al., 2011). This quasi-experimental approach, exemplified by gravity model analyses of trade agreements, allows for cleaner causal inference.

However, this rigorous identification strategy has been scarcely applied to the specific question of diversification's buffering effect in Africa. Most regional studies continue to use observational methods (e.g., Cariolle & Goujon, 2021; Manwa & Moyo, 2022), leaving a gap in causal evidence. Moreover, there is a distinct lack of granular, product-level analysis that

can unpack the microeconomic mechanisms whether a shock's impact differs for a concentrated versus a diversified export line within the same country. This absence of precise, causal, and micro-founded evidence from the African context represents a critical gap in the literature this study aims to address.

2.4 Synthesis and Hypothesis Formulation

The preceding review reveals a fundamental empirical tension regarding the export structure that best confers resilience to African economies. A substantial body of evidence, grounded in portfolio theory, demonstrates that diversified export baskets are associated with lower macroeconomic volatility globally and are prescribed to mitigate commodity-driven instability in Africa (Koren & Tenreyro, 2007; Elhiraika & Mbate, 2014). This forms the empirical basis for the predominant policy paradigm. Consequently, we derive our first hypothesis to test this conventional wisdom directly:

H_1: Greater pre-shock export diversification mitigates the negative impact of global trade shocks on country-level export growth.

However, the diversification doctrine is challenged by critiques highlighting its significant costs and contextual limitations. Scholars note that diversification entails substantial coordination costs, information frictions, and the dilution of scarce managerial resources, which may be particularly debilitating in developing economies (Cadot et al., 2011). Furthermore, the benefits of diversification in Africa appear highly heterogeneous and contingent on existing capabilities and institutional quality (Sawadogo et al., 2024). This suggests that the relationship is not uniform and that the specific margin of diversification product versus partner may matter. To investigate this nuance, we propose a second hypothesis:

*H_2: The mitigating effect of diversification is stronger for partner (geographic) diversification than for product diversification***.**

A critical advancement in this literature is the use of exogenous, product-level demand shocks to identify causal mechanisms, yet this rigorous approach has been scarcely applied to African trade data (Eaton et al., 2016; Bems et al., 2011). This methodological gap prevents a micro-level understanding of how resilience operates at the granular level of individual products. It remains an open question whether, within a specific product category, spreading exports across many markets provides a buffer, or if deeper ties to fewer markets foster more resilient relationships. To resolve this and provide a micro-foundation for the macro debate, we formulate a final, granular hypothesis:

H_3: At the product level, greater pre-shock market diversification for a specific product attenuates the negative impact of a global shock in that product category.

3. Methodology

This study employs a quasi-experimental panel data approach to estimate the causal effect of pre-existing export structures on resilience to global trade shocks. The empirical strategy leverages exogenous variation from product-level global demand shocks, implementing a difference-in-differences style analysis within a high-dimensional fixed effects framework.

All data processing and analysis were conducted using R and the fixest package (Bergé, 2018).

3.1 Data Source and Sample Construction

The analysis utilizes a multi-level panel dataset constructed from the CEPII-BACI database (Gaulier & Zignago, 2010), a harmonized and reconciled dataset of international trade flows. To construct a consistent panel spanning 2005–2024, the data from two Harmonized System (HS) classification versions were integrated. For the years 2005–2006, trade flows classified under HS 2002 were used. For the period 2007–2024, data under HS 2012 were utilized. Using the R programming language and concordance tables, all trade flows were programmatically mapped and aggregated to create a consistent HS 6-digit product classification series for the full timeframe, following standard practice in longitudinal trade analysis (Düben & Huang, 2022). This process ensures product-level comparability across the entire study period.

The final harmonized series uses the HS 6-digit level, which allows for the identification of precise global demand shocks for specific products while maintaining analytical feasibility. The sample includes 54 African economies over the period 2005–2024, capturing multiple major global shock episodes. The data is structured into three analytical panels to test hypotheses at different levels of aggregation (see Table 1).

Table 1: Data Structure and Sample Composition

Panel Level	Unit of Observation	Time Span	Primary Use	Approx. Observations
Country-Year	Country *i*, Year *t*	2005-2024	Macro-level analysis (H_1, H_2)	1,006
Country-Product-Year	Country *i*, Product *p* (HS6), Year *t*	2005-2024	Micro-level interaction analysis (H_3)	~1.6 million
World-Product-Year	Product *p* (HS6), Year *t*	2005-2024	Construction of exogenous shock variable	~120,000

3.2 Variable Construction

3.2.1 Dependent Variable: Export Growth

The core outcome variable is annual export growth, measured at two levels:

i. *Country-Level Growth*: \Delta Exp_{i,t} = \ln(\text{Total_Exports}_{i,t} + 1) - \ln(\text{Total_Exports}_{i,t-1} + 1)

ii.*Product-Level Growth:*\Delta Exp_{i,p,t} = \ln(\text{Product_Exports}_{i,p,t} + 1) - \ln(\text{Product_Exports}_{i,p,t-1} + 1). A small constant (1 USD) is added to handle zero-trade flows.

3.2.2 Core Explanatory Variables: Concentration and Diversification

i. Product Concentration (HHI_Prod): Measured by the Herfindahl-Hirschman Index (HHI) across HS6 product categories within a country's export basket: \text{HHI_Prod}_{i,t-1} = \sum_{p} (s_{i,p,t-1})^2, where s*s* is the product share.

ii.Partner Concentration (HHI_Part): Measured by the HHI across destination markets: \text{HHI_Part}_{i,t-1} = \sum_{j} (m_{i,j,t-1})^2, where m*m* is the partner share.

iii.Product-Specific Partner Diversification: For H_3, diversification for a given country-product-year is calculated as: \text{Diversification}_{i,p,t-1} = 1 - \text{HHI_Part}_{i,p,t-1}. All indices are lagged by one year to represent the pre-shock trade structure and mitigate reverse causality.

3.2.3 Key Independent Variable: World-Product Shock

Following the event-study methodology of Eaton et al. (2016), an exogenous global demand shock is constructed. For each HS6 product *p* in year *t*:

1. Calculate global export growth: \text{Shock}_{p,t} = (\text{World_Exports}_{p,t} - \text{World_Exports}_{p,t-1}) / \text{World_Exports}_{p,t-1}.
2. Define a binary Severe Global Shock indicator: \text{Severe_Shock}_{p,t} = 1 if Shockp,tShock*p*,*t* falls in the bottom 10th percentile of the distribution across all products and years (≈ -15% decline), and 0 otherwise. This threshold identifies economically significant, plausibly exogenous demand collapses.

3.2.4 Control Variables

To isolate the effects of trade structure, models include controls derived from trade data:

- Ln(Total Exports): Log of a country's total exports (lagged), controlling for scale.
- Commodity Share: Share of mineral products (HS chapters 25-27) in total exports (lagged), controlling for commodity dependence.
- Revealed Comparative Advantage (RCA): Balassa index for product-level regressions, controlling for inherent specialization:

  RCAi,p,t−1=Xi,p/XiXw,p/XwRCA*i*,*p*,*t*−1=*Xw*,*p*/*XwXi*,*p*/*Xi*.

Table 2: Variable Definitions and Sources

Variable	Definition	Measurement	Source
Export Growth	Annual log difference in export value.	Continuous.	CEPII-BACI

HHI_Prod	Herfindahl-Hirschman Index of product concentration.	Continuous, [0,1].	Calculated
HHI_Part	Herfindahl-Hirschman Index of partner concentration.	Continuous, [0,1].	Calculated
Severe_Shock	Dummy for severe global demand decline in a product-year.	Binary {0,1}.	Calculated
Ln(Total Exports)	Log of a country's total annual exports.	Continuous.	CEPII-BACI
Commodity Share	Share of mineral-related exports (HS 25-27).	Continuous, [0,1].	Calculated

3.3 Empirical Strategy and Model Specification

3.3.1 Model 1: Country-Level Analysis (Testing H_1 & H_2)

To test macro-level hypotheses, a two-way fixed effects model is estimated:

export_growth ~ hhi_prod_lag + hhi_part_lag + hhi_prod_lag:shock_year + hhi_part_lag:shock_year + ln_total_exports_lag + commodity_share_lag | i + t

Where shock_year is a country-year shock dummy activated when global shock intensity exceeds 15%. H_1 predicts a negative coefficient on the hhi_prod_lag:shock_year interaction (concentration worsens shocks). H_2 predicts a positive coefficient on hhi_part_lag:shock_year (lower concentration i.e., diversification buffers shocks).

3.3.2 Model 2: Product-Level Analysis (Testing H_3)

To test the granular buffering hypothesis, a triple fixed effects model is estimated on the country-product-year panel:

product_export_growth ~ severe_shock:diversification_lag + rca_lag | country_product + t + product_year

Crucially, the inclusion of product_year fixed effects absorbs the severe_shock dummy itself. Identification comes from comparing, within the same shocked product-year, how export growth differs for country-products with high versus low pre-shock diversification. H_3 predicts a positive coefficient for the interaction term severe_shock:diversification_lag, indicating diversification attenuates the shock's negative impact.

3.4 Identification and Robustness

The causal identification rests on the quasi-exogeneity of world-product shocks. A severe global demand decline for a specific product is plausibly unrelated to an individual African exporter's pre-existing diversification choices. The high-dimensional fixed effects structure (particularly product_year FE in Model 2) isolates the variation of interest, controlling for all global shock conditions and time-invariant country-product characteristics.

The following robustness checks will be reported (i) Alternative Shock Thresholds: Using the 5th and 15th percentiles to define Severe_Shock.(ii)Two-Way Clustering: Estimating Model 1 with standard errors clustered by both country and year. (ii) Subsample Analysis: Estimating models separately for high vs. low commodity-dependent economies. (iii) Alternative Specification: Estimating Model 2 without product_year FEs to show the baseline shock coefficient.

4. Results

4.1 Descriptive Statistics and Preliminary Trends

Table 1 presents summary statistics for the key variables in the harmonized panel of 54 African countries from 2005 to 2024. The data reveal substantial heterogeneity in export structures across the continent. The mean product concentration (HHI_Prod) is 0.408, but the range from 0.083 to 0.961 indicates the coexistence of highly diversified and extremely specialized economies. Similarly, partner concentration (HHI_Part) shows significant variation. Approximately 10.1% of product-year observations were classified as experiencing a severe global shock, with aggregate shock intensity peaking in recognized crisis years (2009, 2015, 2020).

Table 1: Summary Statistics of Key Variables (2005–2024)

Variable	Mean	Std. Dev.	Min	Max	Observations
Country-Level Variables					
Annual Export Growth (ΔlnExp)	0.072	0.299	-0.921	1.467	1,080
Product Concentration (HHI_Prod)	0.408	0.236	0.083	0.961	1,080
Partner Concentration (HHI_Part)	0.294	0.198	0.048	0.896	1,080
Commodity Export Share (lagged)	0.648	0.281	0.015	0.992	1,080
Shock Variables					
Severe Shock Dummy (1=yes)	0.101	0.301	0.000	1.000	~120,000

Visual trends indicate a gradual decline in both product and partner concentration since 2005, with an acceleration post-2015, coinciding with AfCFTA negotiations. However, this aggregate trend masks significant cross-country disparity. The periods of major global shocks align with pronounced contractions in median export growth, providing a first suggestive link between global conditions and African trade performance.

4.2 Core Econometric Findings: The Specialization Resilience Paradox

The fixed-effects regression results, presented in Table 2, reveal findings that directly challenge the conventional diversification hypothesis. Column (1) shows the baseline country-level model.

Table 2: The Specialization Resilience Paradox – Country and Product-Level Results

	(1) Country-Level	**(2) Product-Level**
Model	Two-Way FE (Country, Year)	Triple FE (Country-Product, Year, Product-Year)
Dependent Variable	Country Export Growth ($\Delta \ln Exp_{i,t}$)	Product Export Growth ($\Delta \ln Exp_{i,p,t}$)
Key Independent Variables		
HHI_Prod (t-1)	-0.180 (0.401)	
HHI_Part (t-1)	0.016 (0.386)	
HHI_Prod × Shock Year	**1.106** (0.464)**	
HHI_Part × Shock Year	**-1.057** (0.503)**	
Diversification*i,p,t-1*		-0.053 (0.008)***
Severe_Shock × Diversification*i,p,t-1*		**-0.460** (0.028)***
RCA*i,p,t-1*		-0.006 (0.001)***
Ln(Total Exports)*i,t-1*	-0.746 (0.218)***	
Commodity Share*i,t-1*	-0.264 (0.409)	
Fixed Effects	Country, Year	Country-Product, Year, Product-Year
Observations	1,006	1,673,860
R-squared (Within)	0.159	0.007
Interpretation of Key Results		
H_1 Support?	**No. Opposite finding.** Positive	

	interaction (β=1.106) indicates *higher* product concentration associated with *better* growth during shocks.
H_2 Support?	**No. Opposite finding.** Negative interaction (β=-1.057) indicates partner diversification is associated with *worse* growth during shocks.
H_3 Support?	**No. Opposite finding.** Negative interaction (β=-0.460) indicates product-level diversification *amplifies* the negative shock impact.

***p<0.01, **p<0.05, *p<0.1; Robust standard errors clustered by country (Col 1) and country-product (Col 2) in parentheses.*

Contrary to H_1 and H_2, the interaction terms in Column (1) show a specialization resilience paradox. The coefficient on HHI_Prod × Shock Year is positive and significant (β = 1.106, p < 0.05), indicating that during global shock years, economies with *higher* product concentration experienced *greater* export growth. Conversely, the coefficient on HHI_Part × Shock Year is negative and significant (β = -1.057, p < 0.05), suggesting that higher partner diversification (lower HHI_Part) was detrimental during crises.

Column (2) presents the product-level test of H_3. The negative and highly significant coefficient on the Severe_Shock × Diversification interaction (β = -0.460, p < 0.001) confirms that the paradox holds at a granular level: for a specific product hit by a global demand shock, pre-existing market diversification for that product amplified export losses rather than buffering them.

4.3 Robustness Checks and Alternative Specifications

The core paradoxical findings are robust to a series of alternative model specifications, as summarized in Table 3.

Table 3: Robustness of the Specialization Resilience Paradox

Specification Check	H_1: Prod. Conc. × Shock	H_2: Part. Conc. × Shock	H_3: Shock × Diversification
Main Specification	**1.106** (0.464)**	**-1.057** (0.503)**	**-0.460** (0.028)***
Alternative Shock Threshold			

5th Percentile Shock	1.242 (0.521)**	-1.188 (0.565)**	-0.492 (0.031)***
15th Percentile Shock	1.037 (0.439)**	-0.991 (0.476)**	-0.431 (0.026)***
Alternative Estimation			
Two-Way Clustered SEs (Country & Year)	1.106 (0.238)***	-1.057 (0.309)***	-
System GMM Estimator	1.048 (0.498)**	-0.989 (0.540)*	-

***p<0.01, **p<0.05, *p<0.1; Coefficients reported with standard errors in parentheses.*

The results remain stable when using more extreme (5th percentile) or more lenient (15th percentile) shock definitions. The significance of the country-level interactions is strengthened under two-way clustering of standard errors. Estimating the dynamic panel model using the System GMM approach to control for endogeneity yields qualitatively similar coefficients.

4.4 Heterogeneity Analysis: The Role of Commodity Dependence

The analysis reveals that the specialization benefit is not uniform but is primarily driven by commodity-dependent economies. Table 4 presents results from splitting the sample based on whether a country's lagged commodity export share is above 50%.

Table 4: Heterogeneous Effects by Commodity Dependence

Sample	H_1: Prod. Conc. × Shock	H_2: Part. Conc. × Shock	Observations
High Commodity Dependence (>50% share)	**1.647** (1.044)	**-1.726** (1.084)	217
Low Commodity Dependence (≤50% share)	-0.080 (0.500)	-0.025 (0.740)	787

Note: Coefficients shown; full model controls included. High-dependence group shows large point estimates consistent with the main paradox but lower precision due to smaller sample size.

For highly commodity-dependent economies, the point estimates of the paradox are substantially larger ($\beta = 1.647$ for product concentration), though measured with less precision. In contrast, for less commodity-dependent economies, the effects are negligible and statistically insignificant. This indicates that the observed specialization resilience is a phenomenon concentrated in economies with deep, entrenched comparative advantages in primary sectors.

4.5 Summary of Key Findings

The empirical analysis yields three robust, counter-intuitive findings:

1. Product concentration enhances resilience: During global shock years, higher product concentration is associated with significantly better export performance, contradicting the central tenet of the diversification doctrine.
2. Partner diversification reduces resilience: Conversely, broader geographic diversification of exports is associated with worse performance during crises.
3. Effects are micro-founded and commodity-driven: The specialization benefit is observable at the disaggregated product level and is predominantly a feature of commodity-dependent economies.

These results are economically significant, statistically robust across specifications, and highlight meaningful heterogeneity. They collectively demonstrate that deep specialization particularly in core commodity sectors played a crucial role in determining African economies' resilience to global trade disruptions from 2005 to 2024.

5. Discussion

The study's conclusions provide robust empirical evidence that challenges the conventional diversification doctrine and highlight a specialization resilience paradox in African trade. This paradox finds grounding in complementary theoretical frameworks, notably capabilities theory and transaction cost economics, which help explain why deep specialization outperforms broad diversification during systemic shocks in this context.

The positive and significant coefficient for the product concentration interaction during shock years ($\beta = 1.106$, $p < 0.05$) indicates that negative global shocks amplify the relative performance of concentrated exporters rather than harming them. This asymmetry directly contradicts the central tenet of portfolio theory applied to trade. It supports the view of scholars like Cadot et al. (2011), who note the significant costs of discovering and developing new export markets. For example, an African country deriving 60% of its exports from a single mineral product may possess deeply entrenched logistics, buyer relationships, and sector-specific regulatory knowledge. During the COVID-19 pandemic, such established channels often proved more reliable for moving goods amidst global logistical chaos than the nascent, fragmented networks of a more diversified exporter.

The negative coefficient for partner diversification ($\beta = -1.057$, $p < 0.05$) further underscores the weight of coordination costs. Managing a wide geographic spread of export destinations requires distributed logistical capabilities and adaptability to diverse market regulations capacities that are often limited in developing economies. A shock that disrupts global shipping lanes or regional demand thus creates disproportionate complexity for highly diversified exporters, who lack the deep, stabilized relationships with a core set of partners that facilitate crisis coordination and problem-solving.

The granular product-level analysis solidifies this interpretation. The negative interaction between product-specific diversification and severe shocks ($\beta = -0.460$, $p < 0.001$) demonstrates that the paradox operates at the micro level. A product exported to many markets is more exposed to the aggregate demand collapse across those markets and lacks a dominant, resilient trade corridor. In contrast, a concentrated product flow often follows a fortified, high-volume trade route that stakeholders have a greater interest and capacity to maintain during disruptions.

Our heterogeneity analysis confirms that these effects are primarily driven by commodity-dependent economies. This aligns with the capabilities-based view of economic development (Hausmann & Hidalgo, 2011), where a country's productive structure reflects its accumulated knowledge and embedded networks. For these nations, specialization in commodities is not merely a historical artifact but the embodiment of their deepest comparative advantage. Attempting rapid horizontal diversification into unrelated, complex manufacturing during a crisis would require capabilities they do not possess, whereas leveraging and adapting within their specialized domain is more feasible.

These findings contribute to a more nuanced empirical debate. They contrast with cross-country studies linking diversification to lower volatility (Koren & Tenreyro, 2007) but resonate with critiques highlighting the "diversification hump" and context specificity (Sawadogo et al., 2024). The results suggest that for a significant subset of African economies, the costs of diversification informational frictions, institutional thinness, and diluted managerial focus can critically outweigh its theoretical benefits during periods of systemic stress.

The implications for the African Continental Free Trade Area (AfCFTA) are profound. The agreement's foundational goal of enhancing resilience through market diversification may require strategic refinement. A policy focus on vertical deepening within existing specializations such as promoting regional value chains in mineral processing or agro-processing may offer a more immediate resilience payoff than promoting a scattered entry into unrelated sectors. This involves building complexity atop deep capabilities rather than moving away from them.

This discussion acknowledges a key limitation: while the methodology establishes a clear causal link between pre-existing structure and shock resilience, it does not model the long-term growth implications of sustained specialization versus diversification. Furthermore, the analysis is confined to merchandise trade, excluding services which may exhibit different dynamics.

6. Conclusion and Policy Implications

This study makes three primary contributions to the literature on trade and development. First, it provides robust, causal evidence challenging the universal applicability of the export diversification doctrine for achieving short- to medium-term resilience. It posits that in economies with deep, concentrated comparative advantages and institutional constraints, specialization can be a more effective crisis buffer. Second, it advances methodological rigor in the field by applying a product-level, shock-based identification strategy to African trade data, moving the discourse beyond correlation. Third, it delivers timely, actionable insights for the implementation of the AfCFTA, arguing for a context-sensitive approach to building resilient economies.

The policy implications are significant. Policymakers should consider a strategic shift from advocating for broad horizontal diversification to enabling strategic vertical specialization.

1. Conduct Resilience Audits: National AfCFTA strategies should identify and map "deep capability" sectors those with entrenched expertise and networks. Crisis response plans and trade facilitation investments should be prioritized for these core economic pillars.

2. Promote Regional Value Chains in Core Sectors: Industrial policy under the AfCFTA should incentivize regional investment in processing, logistics, and services that add value to existing commodity and agricultural exports, building resilience through deeper continental integration within familiar ecosystems.

3. Focus Trade Facilitation on Strategic Corridors: Investments should aim to deepen the efficiency, capacity, and digital integration of existing major trade corridors, making them more robust to shocks, rather than solely pursuing new market access.

4. Adopt Differentiated Strategies: Regional institutions must recognize heterogeneity. Support for commodity-dependent economies should focus on capability-deepening and value addition within their specialization, while more diversified economies can pursue broader strategies.

In conclusion, the relationship between trade structure and economic resilience is fundamentally shaped by context. For Africa, the evidence suggests that the most viable path to greater resilience in an uncertain world may lie in strategically deepening and adding value to what the continent already produces best. This is not a rejection of diversification as a long-term development goal but a recommendation for a sequenced and strategic approach that builds immediate stability on a foundation of proven strength, paving the way for sustainable and complex transformation under the AfCFTA.

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Apendix

R programming code

```
# ============================================

# COMPLETE FIXED ECONOMETRIC ANALYSIS

# Addressing scaling issues, multicollinearity, and adding controls

# ============================================


# Load required libraries

library(data.table)
```

```
library(fixest)
library(ggplot2)
library(stargazer)

# Set paths
base_dir <- "C:/Users/User/Documents/BACI_Processing"

# Load the prepared datasets
cat("Loading prepared datasets...\n")
country_year <- fread(file.path(base_dir, "country_year_panel_hs6.csv"))
country_product_year <- fread(file.path(base_dir, "country_product_year_panel_hs6.csv"))
world_product_year <- fread(file.path(base_dir, "world_product_year_panel_hs6.csv"))
all_data <- fread(file.path(base_dir, "BACI_Africa_2005_2023_HS12_FINAL.csv"))

# ============================================
# FIX 1: CORRECT MODEL 2 GROWTH CALCULATION
# ============================================
cat("\n=== FIXING PRODUCT-LEVEL GROWTH CALCULATION ===\n")

# Recalculate product export growth using LOG DIFFERENCES (not percentage changes)
# This is standard in trade literature
setorder(country_product_year, i, hs6, t)
country_product_year[, product_export_growth := log(product_exports + 1) -
                     log(shift(product_exports) + 1), by = .(i, hs6)]

# ============================================
# FIX 2: RECALCULATE DIVERSIFICATION INDICES
# ============================================
cat("\n=== RECALCULATING DIVERSIFICATION INDICES ===\n")

# Calculate product-specific partner diversification
all_data[, hs6 := floor(hs12/1)]

product_partner_exports <- all_data[, .(
```

```
  export_value = sum(v, na.rm = TRUE)
), by = .(i, hs6, j, t)]

product_total_exports <- product_partner_exports[, .(
  total_product_export = sum(export_value, na.rm = TRUE)
), by = .(i, hs6, t)]

product_shares <- merge(product_partner_exports, product_total_exports,
                        by = c("i", "hs6", "t"))
product_shares[, partner_share := export_value / total_product_export]

product_hhi <- product_shares[, .(
  hhi_product_partner = sum(partner_share^2, na.rm = TRUE)
), by = .(i, hs6, t)]

product_hhi[, diversification := 1 - hhi_product_partner]

# Merge with country_product_year
model2_data <- merge(country_product_year, product_hhi,
                     by = c("i", "hs6", "t"), all.x = TRUE)

# Merge with world shocks
model2_data <- merge(model2_data,
                     world_product_year[, .(hs6, t, severe_shock)],
                     by = c("hs6", "t"), all.x = TRUE)

# Create lagged diversification
setorder(model2_data, i, hs6, t)
model2_data[, diversification_lag := shift(diversification, 1), by = .(i, hs6)]

# Calculate RCA (Revealed Comparative Advantage)
world_product_total <- model2_data[, .(world_product_exports = sum(product_exports, na.rm = TRUE)),
                                   by = .(hs6, t)]
model2_data <- merge(model2_data, world_product_total, by = c("hs6", "t"), all.x = TRUE)
```

```
country_total <- model2_data[, .(country_exports = sum(product_exports, na.rm = TRUE)),
                                 by = .(i, t)]
model2_data <- merge(model2_data, country_total, by = c("i", "t"), all.x = TRUE)

world_total <- model2_data[, .(world_exports = sum(product_exports, na.rm = TRUE)), by = t]
model2_data <- merge(model2_data, world_total, by = "t", all.x = TRUE)

model2_data[, rca := (product_exports / country_exports) / (world_product_exports / world_exports)]
model2_data[, rca_lag := shift(rca, 1), by = .(i, hs6)]

# Clean data for Model 2
model2_data_clean <- model2_data[!is.na(product_export_growth) &
                                 !is.na(diversification_lag) &
                                 !is.na(rca_lag) &
                                 !is.na(severe_shock)]

cat("Model 2 cleaned data:", nrow(model2_data_clean), "observations\n")

# ============================================
# FIX 3: ADD CONTROL VARIABLES TO MODEL 1
# ============================================
cat("\n=== ENHANCING MODEL 1 WITH CONTROL VARIABLES ===\n")

# Prepare country-year data with additional controls
setorder(country_year, i, t)

# Calculate intra-African export share
intra_africa <- all_data[i %in% 1:999 & j %in% 1:999,  # Assuming African country codes are 1-999
                         .(intra_africa_exports = sum(v, na.rm = TRUE)),
                         by = .(i, t)]

total_exports <- all_data[, .(total_exports = sum(v, na.rm = TRUE)), by = .(i, t)]
intra_africa_share <- merge(intra_africa, total_exports, by = c("i", "t"), all.x = TRUE)
```

```
intra_africa_share[, intra_africa_share := intra_africa_exports / total_exports]
intra_africa_share[is.na(intra_africa_share), intra_africa_share := 0]

# Calculate commodity dependence (HS chapters 25-27: mineral products)
commodity_codes <- 250000:279999
commodity_exports <- all_data[hs6 %in% commodity_codes,
                              .(commodity_exports = sum(v, na.rm = TRUE)),
                              by = .(i, t)]

commodity_share <- merge(commodity_exports, total_exports, by = c("i", "t"), all.x = TRUE)
commodity_share[, commodity_share := commodity_exports / total_exports]
commodity_share[is.na(commodity_share), commodity_share := 0]

# Merge with country_year
country_year <- merge(country_year, intra_africa_share[, .(i, t, intra_africa_share)],
                      by = c("i", "t"), all.x = TRUE)
country_year <- merge(country_year, commodity_share[, .(i, t, commodity_share)],
                      by = c("i", "t"), all.x = TRUE)

# Create lagged variables for Model 1
country_year[, hhi_prod_lag := shift(hhi_prod, 1), by = i]
country_year[, hhi_part_lag := shift(hhi_part, 1), by = i]
country_year[, total_exports_lag := shift(total_exports, 1), by = i]
country_year[, ln_total_exports_lag := log(total_exports_lag + 1)]
country_year[, intra_africa_share_lag := shift(intra_africa_share, 1), by = i]
country_year[, commodity_share_lag := shift(commodity_share, 1), by = i]

# Create shock dummy using world shock intensity
world_year_shocks <- world_product_year[, .(
  shock_intensity = mean(severe_shock, na.rm = TRUE)
), by = t]

country_year <- merge(country_year, world_year_shocks, by = "t", all.x = TRUE)
country_year[, shock_year := ifelse(shock_intensity > 0.15, 1, 0)]  # Above 15% products in shock
```

```
# Clean data for Model 1
model1_data <- country_year[!is.na(export_growth) &
                            !is.na(hhi_prod_lag) &
                            !is.na(hhi_part_lag) &
                            !is.na(ln_total_exports_lag) &
                            !is.na(intra_africa_share_lag) &
                            !is.na(commodity_share_lag)]

cat("Model 1 cleaned data:", nrow(model1_data), "observations\n")

# ============================================
# ESTIMATE FIXED MODELS
# ============================================

# MODEL 1: Enhanced country-year fixed effects
cat("\n=== ESTIMATING ENHANCED MODEL 1 ===\n")

model1_enhanced <- feols(export_growth ~ hhi_prod_lag + hhi_part_lag +
                          hhi_prod_lag:shock_year + hhi_part_lag:shock_year +
                          ln_total_exports_lag + intra_africa_share_lag +
                          commodity_share_lag | i + t,
                         data = model1_data, cluster = "i")

cat("\nEnhanced Model 1 Results:\n")
print(summary(model1_enhanced))

# MODEL 2: Fixed product-level model
cat("\n=== ESTIMATING FIXED MODEL 2 ===\n")

model2_data_clean[, country_product := paste(i, hs6, sep = "_")]
model2_data_clean[, product_year := paste(hs6, t, sep = "_")]

model2_fixed <- feols(product_export_growth ~ severe_shock + diversification_lag +
```

```
                    severe_shock:diversification_lag + rca_lag |
                    country_product + t + product_year,
                  data = model2_data_clean, cluster = "country_product")

cat("\nFixed Model 2 Results:\n")
print(summary(model2_fixed))

# ============================================
# ROBUSTNESS CHECKS
# ============================================
cat("\n=== RUNNING ROBUSTNESS CHECKS ===\n")

# 1. Alternative shock definition for Model 1
cat("\n1. Alternative shock definition (20% threshold):\n")
model1_data[, shock_year_alt := ifelse(shock_intensity > 0.20, 1, 0)]
model1_robust1 <- feols(export_growth ~ hhi_prod_lag + hhi_part_lag +
                    hhi_prod_lag:shock_year_alt + hhi_part_lag:shock_year_alt +
                    ln_total_exports_lag + intra_africa_share_lag +
                    commodity_share_lag | i + t,
                  data = model1_data, cluster = "i")
print(summary(model1_robust1))

# 2. Two-way clustering for Model 1
cat("\n2. Two-way clustering (country and year):\n")
model1_robust2 <- feols(export_growth ~ hhi_prod_lag + hhi_part_lag +
                    hhi_prod_lag:shock_year + hhi_part_lag:shock_year +
                    ln_total_exports_lag + intra_africa_share_lag +
                    commodity_share_lag | i + t,
                  data = model1_data, cluster = c("i", "t"))
print(summary(model1_robust2))

# 3. Alternative Model 2 specification (without product-year FE)
cat("\n3. Model 2 without product-year fixed effects:\n")
model2_robust <- feols(product_export_growth ~ severe_shock + diversification_lag +
```

```
                    severe_shock:diversification_lag + rca_lag |
                    country_product + t,
                  data = model2_data_clean, cluster = "country_product")
print(summary(model2_robust))

# ============================================
# HETEROGENEITY ANALYSIS
# ============================================
cat("\n=== HETEROGENEITY ANALYSIS ===\n")

# Split by commodity dependence
model1_data[, high_commodity := ifelse(commodity_share_lag > 0.5, 1, 0)]

cat("\nHigh commodity dependence (share > 50%):\n")
model1_high_comm <- feols(export_growth ~ hhi_prod_lag + hhi_part_lag +
                    hhi_prod_lag:shock_year + hhi_part_lag:shock_year +
                    ln_total_exports_lag + intra_africa_share_lag |
                    i + t,
                  data = model1_data[high_commodity == 1], cluster = "i")
print(summary(model1_high_comm))

cat("\nLow commodity dependence (share ≤ 50%):\n")
model1_low_comm <- feols(export_growth ~ hhi_prod_lag + hhi_part_lag +
                    hhi_prod_lag:shock_year + hhi_part_lag:shock_year +
                    ln_total_exports_lag + intra_africa_share_lag |
                    i + t,
                  data = model1_data[high_commodity == 0], cluster = "i")
print(summary(model1_low_comm))

# ============================================
# CREATE FINAL RESULTS TABLE
# ============================================
cat("\n=== CREATING FINAL RESULTS TABLE ===\n")
```

```
# Extract key coefficients
results_summary <- data.table(
  Model = c("Model 1: H1", "Model 1: H2", "Model 2: H3"),
  Specification = c("Enhanced", "Enhanced", "Fixed"),
  Coefficient = c(
    round(coef(model1_enhanced)["hhi_prod_lag:shock_year"], 4),
    round(coef(model1_enhanced)["hhi_part_lag:shock_year"], 4),
    round(coef(model2_fixed)["severe_shock:diversification_lag"], 4)
  ),
  Std_Error = c(
    round(se(model1_enhanced)["hhi_prod_lag:shock_year"], 4),
    round(se(model1_enhanced)["hhi_part_lag:shock_year"], 4),
    round(se(model2_fixed)["severe_shock:diversification_lag"], 4)
  ),
  P_Value = c(
    round(pvalue(model1_enhanced)["hhi_prod_lag:shock_year"], 4),
    round(pvalue(model1_enhanced)["hhi_part_lag:shock_year"], 4),
    round(pvalue(model2_fixed)["severe_shock:diversification_lag"], 4)
  ),
  Interpretation = c(
    "Product concentration during shock years",
    "Partner diversification during shock years",
    "Diversification buffers product-level shocks"
  )
)

cat("\nFinal Results Summary:\n")
print(results_summary)

# Save results
fwrite(results_summary, file.path(base_dir, "final_results_summary.csv"))

# ============================================
# CREATE VISUALIZATIONS
```

```
# ==========================================
cat("\n=== CREATING VISUALIZATIONS ===\n")

# 1. Plot shock intensity over time
shock_trend <- world_product_year[, .(
  shock_percentage = mean(severe_shock, na.rm = TRUE) * 100
), by = t]

ggplot(shock_trend, aes(x = t, y = shock_percentage)) +
  geom_line(color = "steelblue", size = 1.5) +
  geom_point(color = "darkblue", size = 2) +
  geom_hline(yintercept = 15, linetype = "dashed", color = "red", alpha = 0.5) +
  annotate("text", x = 2010, y = 16, label = "Shock Threshold (15%)",
           color = "red", hjust = 0) +
  labs(title = "Percentage of HS6 Products in Severe Shock by Year",
       x = "Year", y = "% of Products in Severe Shock") +
  theme_minimal() +
  theme(plot.title = element_text(hjust = 0.5))

ggsave(file.path(base_dir, "shock_trend_fixed.png"), width = 10, height = 6)

# 2. Plot concentration trends
concentration_trend <- country_year[, .(
  mean_hhi_prod = mean(hhi_prod, na.rm = TRUE),
  mean_hhi_part = mean(hhi_part, na.rm = TRUE)
), by = t]

ggplot(concentration_trend, aes(x = t)) +
  geom_line(aes(y = mean_hhi_prod, color = "Product Concentration"), size = 1.5) +
  geom_line(aes(y = mean_hhi_part, color = "Partner Concentration"), size = 1.5) +
  labs(title = "Average Export Concentration in Africa (2005-2024)",
       x = "Year", y = "Herfindahl-Hirschman Index (HHI)",
       color = "Concentration Type") +
  scale_color_manual(values = c("Product Concentration" = "darkred",
```

```
                        "Partner Concentration" = "darkgreen")) +
  theme_minimal() +
  theme(legend.position = "bottom",
        plot.title = element_text(hjust = 0.5))

ggsave(file.path(base_dir, "concentration_trend_fixed.png"), width = 10, height = 6)

# ============================================
# SAVE COMPLETE OUTPUT
# ============================================
cat("\n=== SAVING COMPLETE OUTPUT ===\n")

sink(file.path(base_dir, "complete_analysis_output.txt"))
cat("COMPLETE ECONOMETRIC ANALYSIS RESULTS\n")
cat("=====================================\n")
cat("Date:", Sys.Date(), "\n")
cat("Sample: 54 African countries, 2005-2024\n")
cat("Product level: HS6\n\n")

cat("MODEL 1: ENHANCED COUNTRY-YEAR FIXED EFFECTS\n")
cat("--------------------------------------------\n")
print(summary(model1_enhanced))

cat("\nMODEL 2: PRODUCT-LEVEL FIXED EFFECTS\n")
cat("---------------------------------------\n")
print(summary(model2_fixed))

cat("\nROBUSTNESS CHECKS\n")
cat("-----------------\n")
cat("1. Alternative shock threshold (20%):\n")
print(summary(model1_robust1))
cat("\n2. Two-way clustering:\n")
print(summary(model1_robust2))
cat("\n3. Model 2 without product-year FE:\n")
```

```
print(summary(model2_robust))

cat("\nHETEROGENEITY ANALYSIS\n")
cat("----------------------\n")
cat("High commodity dependence:\n")
print(summary(model1_high_comm))
cat("\nLow commodity dependence:\n")
print(summary(model1_low_comm))

cat("\nFINAL RESULTS SUMMARY\n")
cat("---------------------\n")
print(results_summary)
sink()

cat("\n=== ANALYSIS COMPLETE ===\n")
cat("\nKey outputs saved to:", base_dir, "\n")
cat("1. final_results_summary.csv - Main results table\n")
cat("2. complete_analysis_output.txt - Full regression outputs\n")
cat("3. shock_trend_fixed.png - Shock trends visualization\n")
cat("4. concentration_trend_fixed.png - Concentration trends\n")

# Display final message
cat("\n" + strrep("=", 60) + "\n")
cat("SUMMARY OF FINDINGS:\n")
cat(strrep("=", 60) + "\n")

for(i in 1:nrow(results_summary)) {
  row <- results_summary[i]
  sig <- ifelse(row$P_Value < 0.05, "***",
                ifelse(row$P_Value < 0.1, "**",
                       ifelse(row$P_Value < 0.15, "*", "")))
  cat(sprintf("%s: Coefficient = %.4f (p = %.4f) %s\n",
              row$Model, row$Coefficient, row$P_Value, sig))
}
```

```
cat(strrep("=", 60) + "\n")
cat("Interpretation:\n")
cat("- H1: Product concentration during shocks\n")
cat("- H2: Partner diversification during shocks\n")
cat("- H3: Diversification buffers product-level shocks\n")
cat(strrep("=", 60) + "\n")
```

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