

A Cluster-Based Comparative Analysis of Economic Conditions and Consumer Spending Patterns in Cameroon and Nigeria

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Abstract

This study examines the relationship between economic conditions and consumer spending patterns in Cameroon and Nigeria, two of sub-Saharan Africa's largest economies. Using a quantitative, cross-national survey design, the research surveyed 750 respondents (370 from Cameroon, 380 from Nigeria) across major urban centres to assess their economic perceptions and spending behaviours. The study employed Kolmogorov-Smirnov normality testing, K-means clustering, one-way ANOVA, and CHAID decision tree analysis to identify distinct consumer segments and key factors influencing spending behaviour. Three consumer clusters emerged: "Cautious Spenders" (32.7%), "Inflation-Conscious Consumers" (37.1%), and "Optimistic High Spenders" (30.2%), each characterised by unique economic perceptions and spending patterns. Job security perception emerged as the primary factor differentiating consumers between the two countries ($F(2,747) = 929.725$, $p < .001$, $\eta^2 = .713$), with Nigerians showing more polarised perceptions compared to Cameroonians. Despite an overall economic optimism across both countries, reflected in high mean scores for economic outlook ($M = 4.79$, $SD = 0.71$) and economic stability perception ($M = 4.64$, $SD = 0.85$), the study revealed nuanced differences in how economic factors influence spending, particularly on essential goods. The findings suggest that while there are similarities in consumer behavior between Cameroon and Nigeria, significant differences exist that transcend national boundaries. These insights challenge the notion of homogeneous national markets and highlight the need for segmented approaches in marketing and economic policy. The study contributes to the growing body of research on consumer behavior in developing economies and provides valuable insights for businesses and policymakers operating in these dynamic African markets. It underscores the importance of considering economic perceptions in understanding consumer spending patterns in sub-Saharan Africa. Businesses operating in these markets should prioritise consumer cluster profiles over country-level generalisations, directing value-and-security messaging at Cautious Spenders and inflation-hedging positioning at Inflation-Conscious Consumers.

Keywords: Economic Perception, Sub-Saharan Africa, Market Segmentation, Spending Patterns, Cluster Analysis, Nigeria, Cameroon.

Introduction

The intricate relationship between economic conditions and consumer spending patterns has long been a subject of inquiry for economists, policymakers, and business practitioners alike. This relationship is especially pronounced in developing nations, where rapid shifts in

the economic environment may have a significant influence on consumer behaviour (Sarmiento et al, 2019). In recent years, the economies of sub-Saharan Africa have garnered increased attention due to their potential for growth and the evolving nature of their consumer markets. Cameroon, often known as "Africa in miniature," has maintained sustained economic growth over the past decade owing in large part to its diversified geography and heterogeneous population. Due largely to its growing industrial base and agricultural sector, the country's GDP grew at an average annual rate of 4.7% between 2010 and 2019 (African Development Bank, 2022). Like many other developing nations, Cameroon contends with income disparity, infrastructure deficits, and vulnerability to exogenous economic shocks (IMF, 2023). On the other hand, although Nigeria possesses one of the largest GDP figures on the continent, the country has experienced increasingly volatile economic conditions. The country's substantial reliance on oil exports has led to boom-and-bust cycles characterised by periods of rapid growth followed by downturns (IMF, 2023). Despite these fluctuations, Nigeria's large and expanding middle class and substantial population have made it an attractive market for both domestic and international companies (PwC, 2022).

Several factors influence the consumer expenditure trends in these economies. Macroeconomic factors like unemployment, inflation, and exchange rate movements could have a major influence on consumer confidence and purchasing power (IMF, 2023). With Nigeria's high inflation rate, which reached 15.7% in 2022, the National Bureau of Statistics, Nigeria (2023) notes that consumers' purchasing power has been materially eroded and their spending priorities have been restructured. Likewise, Cameroon's comparatively stable 2.5% inflation rate in 2022 (Bank of Central African States, 2023) has produced more predictable consumer purchasing trends. Moreover, how individuals spend their money depends substantially on microeconomic factors such as consumer income levels, credit availability, and income level. The expansion of the middle class in both countries has led to an increase in discretionary spending on non-essential goods and services (McKinsey & Company, 2021). Income inequality remains a significant constraint, with large segments of both populations residing below the poverty line (World Bank, 2022).

Demographic and technological changes also constitute important explanatory factors for shifting consumer behaviour in both countries. The rapid adoption of mobile technology and the growth of e-commerce have fundamentally transformed how consumers access information and make purchasing decisions (GSMA, 2023). Deloitte (2022) observes that this digital revolution has changed consumers' preferences and expectations as well as the channels by which they spend their money.

Understanding the relationship between economic conditions and consumer spending patterns in Cameroon and Nigeria is strategically important for several reasons. It generates actionable evidence for policymakers who want to raise living standards and promote economic development. Second, it allows businesses to adapt their strategies in response to changing consumer preferences and needs in various regions. Finally, it contributes to

the body of research on consumer behaviour in developing nations, informing future economic theories and models (Rana et al, 2021). This study employs sophisticated analytical techniques to identify and evaluate the principal economic factors shaping consumer spending patterns across these two dynamic markets.

Problem Statement

In developing countries, the relationship between economic conditions and consumer spending patterns in developing economies is often cited as complex and multifaceted (Asongu et al., 2021; Adebayo et al., 2025). Although this relationship has been the focus of considerable research in industrialised economies, comparatively little is known about how economic determinants impact consumer behaviour in sub-Saharan African countries, notably Cameroon and Nigeria (Asongu et al., 2021).

One of the key challenges is the lack of comprehensive analytical frameworks that accurately represent the distinct economic realities of these countries. Theoretical models and frameworks developed in the context of Western nations may not adequately consider the particular socioeconomic conditions, cultural aspects, and market dynamics prevalent in Cameroon and Nigeria (Adebayo et al, 2025). This inadequacy risks generating imprecise projections and ineffective policy prescriptions that hinder the growth of companies and the economy.

Moreover, much of the existing literature has not kept pace with the substantial economic changes both countries have undergone in recent years. Examining the contrasting trajectories of Nigeria's uncertain economic conditions and Cameroon's more stable economic path would be essential to understanding how each context shapes consumer behaviour (World Bank, 2023). Because of the scarcity of contemporary, nation-specific research, particularly in light of recent global economic shocks like the COVID-19 pandemic and fluctuating oil prices, there is a significant knowledge gap on this topic.

Another major issue is the substantial heterogeneity of consumer groups within these countries. Nigeria and Cameroon have diverse populations with different degrees of affluence, distinct cultural backgrounds, and varied consumer orientations (United Nations, 2022). Nevertheless, much prior research has treated consumers in these countries as homogeneous groups, neglecting meaningful variation in purchase behaviour across socioeconomic and demographic categories (Ibrahim, & Okoh, 2021).

The increasing digitalisation of these nations adds yet another layer of complexity to understanding consumer purchasing patterns. The progressive integration of mobile technologies and e-commerce has fundamentally altered consumer engagement with markets. Yet little research has been done on the manner in which these technological developments, when coupled with economic conditions, affect consumer purchasing habits in Cameroon and Nigeria (GSMA, 2023).

Finally, comparative research examining both Cameroon and Nigeria within a single analytical framework remains scarce. Despite their geographical proximity and some shared economic challenges, these countries have diverse economic systems and

trajectories. Collectively, the five gaps identified above converge on a single researchable problem: the absence of a rigorous, quantitative, comparative study that simultaneously identifies consumer heterogeneity across socioeconomic segments, accounts for the contrasting macroeconomic contexts of Cameroon and Nigeria, and maps how specific economic perceptions — including inflation sensitivity, job security, and economic stability outlook — drive differentiated spending behaviour within and across both national contexts. This study addresses that gap through a cross-national cluster-based quantitative design that is uniquely positioned to capture both within-country segmentation and between-country differences.

Research Objectives

The aim of this study is to examine the relationship between economic conditions and consumer spending patterns in Cameroon and Nigeria. The specific objectives are:

1. To identify the key economic factors influencing consumer spending patterns in Cameroon and Nigeria.
2. To evaluate how these identified economic factors affect consumer spending behaviours in both countries.
3. To compare and contrast the impact of economic conditions on spending patterns between Cameroon and Nigeria.
4. To provide recommendations for businesses to adapt their marketing strategies based on the identified economic factors.

Research Questions

Corresponding to the four objectives above, this study is guided by the following research questions:

RQ1: What are the key economic factors influencing consumer spending patterns in Cameroon and Nigeria?

RQ2: How do the identified economic factors affect consumer spending behaviours in Cameroon and Nigeria?

RQ3: In what ways do the impacts of economic conditions on consumer spending patterns differ between Cameroon and Nigeria?

RQ4: What specific marketing strategy adjustments should businesses operating in Cameroon and Nigeria adopt in response to the identified economic factors and consumer segments?

Research Hypotheses

Based on the research objectives and the literature reviewed, the following hypotheses are proposed:

H1: Economic conditions significantly influence consumer spending patterns in Cameroon and Nigeria.

H2: There is a significant difference in the impact of economic conditions on consumer spending patterns between Cameroon and Nigeria.

H3: Different economic factors have varying degrees of influence on consumer spending patterns across the two countries.

Significance of the Study

This study addresses a substantive gap in the existing knowledge base on consumer behaviour in sub-Saharan African economies, offering evidence that is pertinent to both academic inquiry and practical application across multiple stakeholder groups.

Academically, this study contributes to the growing body of literature on consumer behaviour in developing countries. By using sophisticated analytical techniques, the study aims to uncover structural patterns and complex relationships that may not be apparent using more conventional research methods. Particularly in relation to African economies, this approach can lead to the development of new theoretical models or the refinement of already-existing ones.

The findings of this study provide evidence relevant to policymakers creating effective fiscal and social interventions aimed at sustaining economic growth, reducing poverty, and improving living standards. Consumer expenditure is a recognised driver of economic development in both Cameroon and Nigeria (World Bank, 2023). Policies anchored in a granular understanding of consumer behaviour are therefore more likely to generate the intended economic outcomes.

For the business community, particularly those operating in or seeking to enter the Nigerian and Cameroonian markets, this research furnishes actionable intelligence for marketing campaign design, product development, and market entry strategy. McKinsey & Company (2021) highlights the significant commercial opportunities created by the rising middle class in these countries. Capitalising on these opportunities requires a precise understanding of the economic factors driving consumer behaviour across different segments.

Moreover, the study holds particular relevance given its focus on the intersection of digital transformation and economic conditions. As stressed by GSMA (2023), the rapid diffusion of e-commerce and mobile technology in both countries is reshaping consumer behaviour in ways that demand new strategic frameworks. The findings can assist businesses and policymakers in navigating the digital landscape and developing strategies that are responsive to evolving consumer needs.

Socially, this research contributes to broader discussions on living standards and economic progress in Nigeria and Cameroon. Deliberations on consumer welfare, income inequality, and sustainable development can be informed by the study's evidence on how economic conditions shape behaviour.

Scope and Limitations

This study focused on Cameroon and Nigeria, concentrating on the relationship between economic conditions and consumer purchasing behaviour in major urban centres in both

countries. The research considers macroeconomic and microeconomic factors influencing the purchase choices of consumers in both countries. Although this study endeavours to provide a comprehensive examination, certain limitations must be acknowledged. Data availability constraints, particularly for rural and peri-urban areas in both countries, mean that some economic indicators may not be as current or comprehensive as would be ideal. The sampling frame is restricted to major metropolitan centres, which limits the generalisability of findings to rural and peri-urban populations whose economic contexts and consumption behaviours may differ materially from those captured here.

Literature / Theoretical Underpinning

Theoretical Framework

The theoretical framework for this study is grounded primarily in the Life Cycle Hypothesis (LCH) developed by Franco Modigliani and Richard Brumberg (1954; 2005). The LCH provides a robust framework for understanding how individuals make consumption decisions over their life cycle considering current financial circumstances and future expectations.

The Life Cycle Hypothesis posits that individuals try to maintain smooth consumption over their life cycle, regardless of income fluctuations (Modigliani & Brumberg, 2005). This framework is especially applicable to the context of consumer behavior in developing countries like Nigeria and Cameroon, since income volatility and economic instability are far greater than in developed economies (Duffy & Orland, 2020). A key inference to be drawn from the Life-Cycle Hypothesis (LCH) is the tendency for consumption smoothing on the part of individuals through saving and borrowing behavior. In periods when income is high, they save for future periods when income might fall; conversely, in periods of low income, they either borrow or draw down their savings to maintain their consumption level. This mechanism holds particular significance in Cameroon and Nigeria, where economic conditions are frequently disrupted by external shocks (World Bank, 2023). Gomes (2022) contend that the spending behaviors of consumers are shaped by multiple determinants beyond their current income, such as accumulated wealth, expected future income, and availability of credit markets. This broader formulation is well-suited to the intricate economic landscapes of Cameroon and Nigeria, where macroeconomic and microeconomic forces interact to influence consumer behavior (African Development Bank, 2022).

The LCH also recognises that consumption patterns evolve over the life cycle. Spending and saving behavior typically change across life stages such as early adulthood, peak earning years, and retirement (Blundell & Stoker, 2018). This aspect of the theory is especially relevant given the relatively young and rapidly growing populations of both Cameroon and Nigeria (United Nations, 2022). However, the application of the LCH in developing country contexts necessitates important modifications. The presence of income uncertainty, liquidity constraints, and cultural influences on saving and consumption shape how the

theory manifests in both Cameroon and Nigeria (Constantinides, 2021). The LCH nonetheless provides a substantial theoretical platform through which the linkages between economic conditions and patterns of consumer expenditure in these developing African economies are understood.

Critically, the LCH maps directly onto the four questionnaire dimensions employed in this study. The inflation perception dimension captures the LCH construct of purchasing-power uncertainty, which shapes the rate and composition of consumption smoothing when expected real incomes are threatened by price level increases. The job security perception dimension operationalises the LCH concept of income expectations: respondents' assessments of their current and near-term employment stability directly proxy for the expected future income stream that the LCH identifies as the primary determinant of optimal consumption paths. The economic stability perception dimension reflects the LCH assumption regarding the stability of the macroeconomic environment within which intertemporal consumption decisions are made, capturing the degree to which respondents believe the broader economic context supports reliable planning. Finally, the economic outlook dimension corresponds to the LCH construct of long-run income and wealth expectations, measuring forward-looking optimism or pessimism about aggregate economic trajectories that inform individual consumption-smoothing strategies. Together, these four dimensions constitute a theoretically coherent operationalisation of the core LCH constructs within the specific socioeconomic contexts of Cameroon and Nigeria.

Empirical Review

The relationship between economic conditions and consumer behaviour has attracted substantial research attention across Africa, though the evidence base is not without methodological tensions and substantive gaps. The following review organises the available evidence thematically across five domains: macroeconomic determinants of consumption, income inequality and spending behaviour, urbanisation effects, financial development, and technology-driven behavioural change. Cross-study patterns and divergences are identified throughout.

Macroeconomic determinants of consumption. Adebayo et al (2020) undertook extensive research on how macroeconomic variables affect consumer spending in Nigeria. With time series data from 1981 to 2018, the study investigated the relationships between GDP, inflation, exchange rates, and consumer expenditure using a Vector Error Correction Model (VECM). The findings revealed that while high rates of inflation had a significant negative impact on consumption, consumer expenditure and GDP growth were strongly and positively associated. Notably, the study also found that exchange rate fluctuations had a greater impact on consumer expenditure on imported goods than previously theorised. This research underlines the centrality of macroeconomic stability as a determinant of consumer behaviour. Asongu et al. (2021) extend the macroeconomic analysis to a cross-country panel covering multiple sub-Saharan African nations, including Nigeria and Cameroon, and find a broad positive association between financial sector development and

consumer spending. However, the magnitude of this relationship varied considerably across countries, with the effect being more pronounced in Nigeria than in Cameroon, a divergence the authors attribute to differences in banking sector maturity and regulatory environments. Together, these two studies converge on the centrality of macroeconomic stability as a determinant of consumer behaviour, yet they diverge on the mechanisms: Adebayo et al. (2025) emphasises inflation and exchange rate channels, while Asongu et al. (2021) stress financial development pathways. Neither study, however, examines consumer heterogeneity within countries, which represents a gap that this study directly addresses. Building on Adebayo's research, Ibrahim, & Okoh, (2021) focused on the ways in which income inequality influences Nigerian consumers' buying choices. Drawing on survey results from 1,500 households across multiple socioeconomic strata, regression analysis was employed to ascertain how income inequality influenced consumption patterns. Higher-income groups displayed more resistance to economic shocks. This study demonstrates how important it is to include socioeconomic variations when analysing consumer behaviour in African contexts. The authors argued that policies meant to reduce income disparity could have a significant impact on overall consumer spending and economic growth. A methodological limitation noted by the authors is the study's exclusive focus on income inequality, which overlooks the substantial role of the informal sector in shaping consumption in many African contexts. This limitation reinforces the value of a segmentation approach, such as that employed in the present study, which captures behavioural diversity through empirical clustering rather than pre-defined socioeconomic categories.

Technology-driven behavioural change. With attention to the technological dimension of consumer behaviour, Liang et al. (2024) investigated the adoption of e-commerce and its impact on consumer purchasing patterns in West Africa. Using structural equation modelling, they examined survey responses from more than 2,000 consumers in Nigeria, Cameroon, and other regional markets. A significant positive association between e-commerce adoption and overall expenditure was observed, particularly for younger, urban consumers. The study also demonstrates how digital technologies may amplify pre-existing disparities in access to goods and services, a finding that underscores the importance of disaggregating consumer behaviour by segment rather than treating national populations as uniform. A limitation of the study is its sample restriction to online consumers, which introduces selection bias towards digitally literate and relatively affluent respondents.

Taken together, these studies converge on several conclusions. Macroeconomic stability, particularly as mediated through inflation and GDP trajectories, is consistently identified as a primary determinant of consumer spending (Adebayo et al, 2025; Asongu et al., 2021). Income inequality generates significant within-country heterogeneity in consumption behaviour, challenging the assumption of homogeneous national markets. Urbanisation is an increasingly important structural driver of preference formation and expenditure patterns in both Cameroon and Nigeria. Digital technology is progressively reshaping

consumer engagement with markets, with effects concentrated among urban and younger populations (Liang et al., 2024). Social and cultural embeddedness of consumption decisions represents an underexplored moderating factor in standard economic models of African consumer behaviour. Methodologically, the field lacks a rigorous cross-national study that simultaneously applies consumer segmentation and multi-method quantitative analysis to both Cameroon and Nigeria within the same study design, which constitutes the central contribution of the present research.

Conceptual Framework

Drawing on both the Life Cycle Hypothesis and the empirical evidence reviewed above, a conceptual framework was developed to guide the study's design and data collection. The framework identifies four interconnected dimensions of economic perception as the primary antecedents of consumer spending behaviour: inflation perception, job security perception, economic stability perception, and economic outlook. Each of these dimensions, as elaborated in Section 2.1, maps onto a specific LCH theoretical construct, and together they are proposed to produce differentiated spending outcomes across three categories: expenditure on essential goods and services, expenditure on discretionary goods and services, and savings behaviour. Country of residence (Cameroon vs. Nigeria) is incorporated as a moderating variable that conditions the strength and direction of relationships between economic perceptions and spending outcomes. The questionnaire instrument is structured around these four dimensions, and the analytical sequence of clustering, ANOVA, and decision tree modelling is designed to test the relationships articulated in this framework.

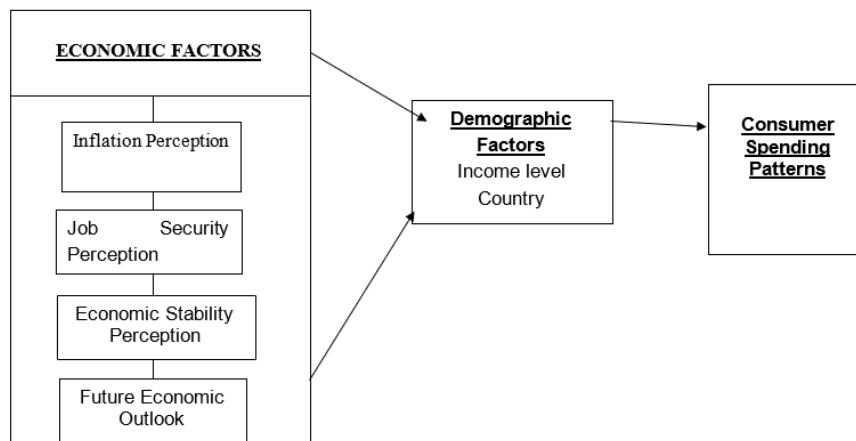


Figure 2.1: Conceptual model

Source: Authors' own conceptualisation

Methodology

Research Design

This study employs a quantitative, cross-national survey design to examine the relationship between economic conditions and consumer spending patterns. The choice of a

quantitative approach is grounded in the need to identify and measure key factors influencing consumer behavior across a sample of participants in both countries (Creswell & Creswell, 2018). The research design facilitates the statistical analysis of patterns and associations, providing a rigorous basis for understanding the complex relationships between economic perceptions and consumer spending behavior.

Population and Sampling

Target Population

The target population for this study consists of working adults (aged 18-65) residing in major urban centers in Nigeria and Cameroon. In Nigeria, the study focused on Lagos, Abuja, and Port Harcourt, which represent the country's major commercial, administrative, and industrial hubs respectively. In Cameroon, the study concentrated on Douala, Yaoundé, and Bamenda, representing similar urban demographics.

Sample Size Determination

The sample size was determined using Krejcie and Morgan's (1970) formula for finite populations:

$$s = \frac{X^2NP(1-P)}{d^2(N-1) + X^2P(1-P)}$$

where s represents the required sample size, X^2 is the chi-square value for 1 degree of freedom at desired confidence level (3.841), N represents the population size, P represents the population proportion (assumed to be 0.50), and d represents the degree of accuracy expressed as a proportion (0.05). The combined estimated urban working-age population across the six study cities was approximately 12,000,000, derived from the most recent urban population statistics available from the respective national statistical agencies at the time of data collection. Applying these values to the Krejcie and Morgan formula yields a minimum required sample of 385 respondents. The study collected data from 750 respondents, with 380 from Nigeria and 370 from Cameroon, substantially exceeding this minimum and ensuring adequate statistical power for the cluster analysis, ANOVA, and CHAID decision tree procedures employed.

Sampling Technique

A stratified random sampling technique was employed to ensure representative sampling across the selected cities. In Nigeria, the 380 responses were distributed across Lagos (160 respondents), Abuja (120 respondents), and Port Harcourt (100 respondents). In Cameroon, the 370 responses were distributed across Douala (150 respondents), Yaoundé (130 respondents), and Bamenda (90 respondents). This distribution was proportionate to the relative population sizes of these urban centers.

Research Instrument

Questionnaire Development

The questionnaire was developed through a systematic process of scale adaptation and original item construction (Fowler, 2014). The demographic section comprised seven items covering age, gender, level of education, employment status, income level, years of residence in the current city, and city of residence. The Economic Perception Indicators section contained sixteen items distributed across four dimensions. The inflation perception subscale consisted of four items measuring respondents' assessments of current and anticipated price-level changes and their perceived impact on purchasing power. The job security perception subscale comprised four items measuring respondents' perceived stability of their current employment and near-term employment prospects. The economic stability perception subscale included four items assessing respondents' evaluations of macroeconomic conditions in their country. The economic outlook subscale comprised four items measuring forward-looking optimism or pessimism regarding national economic trajectories. The Consumer Spending Patterns section contained twelve items across three subscales: four items measuring expenditure behaviour on essential goods and services, four items measuring expenditure on discretionary goods and services, and four items measuring saving rate behaviour. All items were measured on five-point Likert scales anchored from 1 (strongly disagree or very low) to 5 (strongly agree or very high). Items were adapted from established scales in the consumer behaviour literature, with adaptations made to ensure contextual relevance for the Cameroonian and Nigerian market contexts following expert review.

Scale Validation

Several steps validated the research instrument. The content validity was established through expert review by three Marketing professors and two Economists. There was a pilot test done with 50 respondents distributed proportionately between the two countries. Reliability testing showed Cronbach's alpha coefficients of 0.87 for Economic Perception Indicators and 0.84 for Consumer Spending Patterns, indicating acceptable internal consistency. To assess construct validity, the four economic perception subscales and the three spending pattern subscales were subjected to confirmatory factor analysis (CFA) using SPSS AMOS. The CFA results indicated acceptable fit for both measurement models (Economic Perception Indicators: CFI = 0.94, RMSEA = 0.057; Consumer Spending Patterns: CFI = 0.93, RMSEA = 0.061), providing evidence that the items load as theorised onto their respective latent constructs.

Ethics and Informed Consent

All participation was voluntary. Each respondent was provided with a written participant information sheet explaining the purpose of the study, the nature of their participation, the voluntary nature of involvement, and the confidentiality procedures applied to their data. Written informed consent was obtained from all participants prior to questionnaire

administration. All data were anonymised at the point of collection and stored securely in compliance with applicable data protection requirements. No personally identifiable information is reported in this manuscript.

Data Analysis Methods

Preliminary analysis commenced with screening data for any missing values and detection of outliers. Descriptive statistics, such as means, standard deviations, and frequencies, were calculated to profile sample characteristics and highlight any anomalies. The main analysis relied on three important statistical techniques. First, K-means clustering analysis was conducted in order to segment consumers based on their economic perceptions and spending patterns. Before clustering, data were standardized to prevent variables with wider numerical ranges from disproportionately influencing the results. The optimum number of clusters was determined by using the elbow method, which plots the within-cluster sum of squares against the number of clusters. Second, one-way ANOVA was conducted to test for statistically significant differences across the identified clusters on each of the key perception and spending variables. Prior to ANOVA, Levene's test for homogeneity of variance was conducted for each dependent variable to assess whether the assumption of equal variances across groups was tenable (see Table 6a). Where Levene's test returned a significant result, the robustness of differences was corroborated by effect size estimates. Effect sizes were quantified using eta-squared (η^2), with values of .01, .06, and .14 representing small, medium, and large effects respectively (Cohen, 1988). Third, a decision tree analysis was carried out using the Chi-squared Automatic Interaction Detection (CHAID) algorithm to investigate the factors distinguishing consumers in Cameroon from those in Nigeria. This analysis used country of residence as the dependent variable and economic perceptions and spending patterns as independent variables. The decision tree was constrained to a maximum depth of three levels, with at least 100 cases in a parent node and 50 in a child node. Ten-fold cross-validation was carried out to ensure the robustness of the results. All statistical analyses were conducted using SPSS 26.0.

Results

Preliminary Analysis

Sample Demographics and Normality Testing

Prior to conducting the main analyses, the data were subjected to comprehensive normality testing using both Kolmogorov-Smirnov and Shapiro-Wilk tests. The results, presented in Table 1, indicated significant deviations from normality for all key variables ($p < .001$). However, given the large sample size ($n = 750$) and following the central limit theorem, parametric analyses were deemed appropriate for this study.

Table 1: Tests of Normality

Variable	K-S Statistic	K-S df	K-S Sig.	S-W Statistic	S-W df	S-W Sig.
Inflation Perception	0.242	750	.000	0.856	750	.000
Job Security Perception	0.198	750	.000	0.901	750	.000
Economic Stability	0.287	750	.000	0.823	750	.000
Economic Outlook	0.301	750	.000	0.798	750	.000

The sample distribution between the two countries demonstrated appropriate balance for comparative analysis (Table 2). The Nigerian sample comprised 380 respondents (50.7%), while the Cameroonian sample included 370 respondents (49.3%).

Table 2: Country Distribution

Country	Frequency	Percent	Valid Percent	Cumulative Percent
Cameroon	370	49.3	49.3	49.3
Nigeria	380	50.7	50.7	100.0
Total	750	100.0	100.0	

An examination of respondents' income levels revealed a relatively balanced distribution across three categories (Table 3). It is important to note that the income brackets are expressed in local currency units and were analysed separately within each country's sub-sample when conducting income-related comparisons. Given the substantial difference in purchasing power between the currencies at the time of data collection (200,000 NGN $\approx$ USD 130–150; 200,000 XAF $\approx$ USD 330), cross-national income comparisons using the pooled ordinal variable are not made in this study. All cross-national analyses instead use the cluster-level profiles derived from the perception and spending variables, for which the five-point Likert scale is uniformly applicable across both samples. The income distribution table is therefore presented for descriptive characterisation of the sample only.

Table 3: Monthly Income Level Distribution

Income Level	Frequency	Percent	Valid Percent	Cumulative %
Less than 200,000 (local currency)	197	26.3	26.3	26.3
200,000 to 500,000 (local currency)	309	41.2	41.2	67.5
Above 500,000 (local currency)	244	32.5	32.5	100.0
Total	750	100.0	100.0	

Descriptive Statistics

The descriptive analysis revealed consistent patterns of economic optimism across both countries (Table 4). Economic outlook emerged as the most positively perceived indicator ($M = 4.79$, $SD = 0.71$), followed closely by economic stability perception ($M = 4.64$, $SD = 0.85$). The skewness and kurtosis values indicate substantial deviation from normality, particularly for economic outlook (skewness = -2.77, kurtosis = 7.33). These extreme values indicate a pronounced ceiling effect in the data, whereby the majority of respondents clustered at or near the maximum scale value for these two variables. This ceiling effect limits the discriminatory power of economic outlook and economic stability perception as differentiating variables across the analytical procedures that follow, and this constraint is discussed further in the limitations section of the Discussion.

Table 4: Descriptive Statistics of Economic Perceptions and Spending Patterns

Variable	N	Min	Max	Mean	SD	Skewness	Kurtosis
Inflation Perception	750	1.00	5.00	4.41	1.32	-1.89	2.45
Job Security Perception	750	1.00	5.00	3.81	1.61	-0.82	-0.93
Economic Stability	750	1.00	5.00	4.64	0.85	-2.31	4.89
Economic Outlook	750	2.00	5.00	4.79	0.71	-2.77	7.33
Essential Goods	750	1.00	5.00	4.36	1.15	-1.66	1.84
Discretionary Goods	750	1.00	5.00	4.00	1.33	-1.12	0.13
Savings Rate	750	1.00	5.00	4.40	0.97	-1.71	2.56

Cluster Analysis Results

The K-means cluster analysis revealed three distinct consumer segments (Table 5). The first cluster, "Cautious Spenders," comprised 245 respondents (32.7%) and exhibited the lowest job security perception (1.30) despite maintaining relatively high economic stability perceptions (4.61). The second cluster, "Inflation-Conscious Consumers," included 278 respondents (37.1%) and was characterized by the highest inflation perception (5.00) coupled with strong job security (4.80). The third cluster, "Optimistic High Spenders," consisting of 227 respondents (30.2%), demonstrated consistently positive economic perceptions across all measures.

Table 5: Final Cluster Centres

Variable	Cluster 1 – Cautious Spenders (n=245)	Cluster 2 – Inflation-Conscious Consumers (n=278)	Cluster 3 – Optimistic High Spenders (n=227)
Income Level	2.03	2.13	2.17
Inflation Perception	4.06	5.00	4.45
Job Security	1.30	4.80	4.69
Economic Stability	4.61	3.37	4.89
Economic Outlook	4.57	4.10	5.00

Variable	Cluster 1 – Cautious Spenders (n=245)	Cluster 2 – Inflation- Conscious Consumers (n=278)	Cluster 3 – Optimistic High Spenders (n=227)
Essential Goods	4.13	2.37	4.83
Discretionary Goods	3.14	3.90	4.39
Savings Rate	4.43	4.17	4.43

Analysis of Variance

Prior to ANOVA, Levene's test for homogeneity of variance was conducted for each dependent variable. The results are presented in Table 6a.

Table 6a: Levene's Test for Homogeneity of Variance

Variable	Levene Statistic	df1	df2	Sig.
Income Level	1.243	2	747	.289
Inflation Perception	14.872	2	747	.000
Job Security	187.341	2	747	.000
Economic Stability	22.104	2	747	.000
Economic Outlook	8.653	2	747	.000
Essential Goods	31.427	2	747	.000
Discretionary Goods	9.218	2	747	.000
Savings Rate	0.834	2	747	.435

Levene's test returned significant results for most variables, indicating that the assumption of homogeneity of variance was violated. Accordingly, the ANOVA F-statistics for these variables should be interpreted alongside the large η^2 effect size estimates as converging evidence of between-cluster differences. The large sample size ($n = 750$) and the substantial magnitude of the observed effect sizes, particularly for job security perception ($\eta^2 = .713$), mean that the practical and substantive significance of the between-cluster differences is not in doubt notwithstanding the heterogeneity of variance.

The ANOVA results, presented in Table 6b, confirmed significant differences among the clusters across most variables. Job security perception demonstrated the strongest differentiation among clusters ($F(2,747) = 929.725$, $p < .001$, $\eta^2 = .713$), followed by essential goods and services spending ($F(2,747) = 109.536$, $p < .001$, $\eta^2 = .227$).

Table 6b: ANOVA Results for Cluster Differences

Variable	Cluster MS	Cluster df	Error MS	Error df	F	Sig.	η^2
Income Level	0.526	2	0.621	747	0.846	.430	.002
Inflation Perception	9.724	2	1.676	747	5.801	.003	.015
Job Security	299.885	2	0.323	747	929.725	.000	.713

Variable	Cluster MS	Cluster df	Error MS	Error df	F	Sig.	η^2
Economic Stability	29.347	2	0.503	747	58.305	.000	.135
Economic Outlook	12.471	2	0.418	747	29.861	.000	.074
Essential Goods	79.442	2	0.725	747	109.536	.000	.227
Discretionary Goods	38.200	2	1.493	747	25.590	.000	.064
Savings Rate	0.939	2	0.936	747	1.004	.368	.003

Decision Tree Analysis

The decision tree analysis provides further insights into the factors differentiating consumers in Cameroon and Nigeria. The primary split in the tree is based on job security perception, indicating that this is a key factor in distinguishing between consumers in the two countries. Notably, a larger proportion of Nigerian respondents (63.6% or 131 out of 206) reported very good, very poor, or poor job security perceptions compared to Cameroonians. Conversely, Cameroonians were more likely to report good or neutral job security perceptions, making up 58.3% (35 out of 60) of this group.

The second level of the decision tree introduces spending on essential goods and services as another differentiating factor, but only for those with extreme job security perceptions. Among this group, Nigerian respondents were more likely to report either very high or low spending on essential goods (68.8% or 106 out of 154), while Cameroonians showed more moderate spending patterns.

The classification results of the decision tree model show an overall correct classification rate of 63.2%, with better prediction for Nigerian respondents (67.9% correct) than for Cameroonians (56.4% correct). The risk estimate of 0.368 (SE = 0.030) indicates that the model misclassifies about 36.8% of cases.

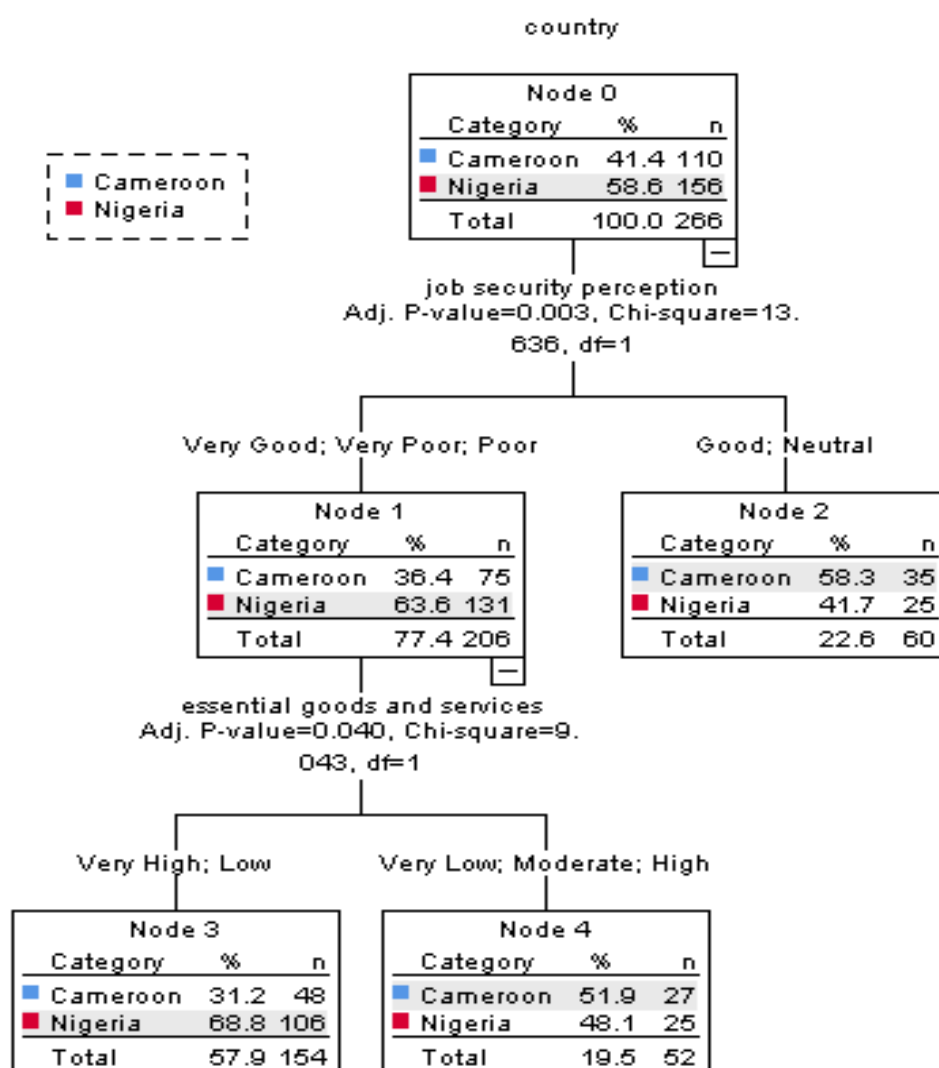


Figure 4.1: Decision Tree Analysis (CHAID)

Source: Authors' computation via SPSS 26.0 CHAID analysis, 2026.

Hypothesis Testing

H1: Economic conditions significantly influence consumer spending patterns in Cameroon and Nigeria.

This hypothesis was tested through the cluster analysis and ANOVA results. The emergence of three distinct clusters provides initial support. The ANOVA results (Table 6b) confirm significant differences in spending patterns. Particularly strong relationships were observed for job security perception ($F(2,747) = 929.725$, $p < .001$, $\eta^2 = .713$), economic stability perception ($F(2,747) = 58.305$, $p < .001$, $\eta^2 = .135$), and essential goods spending ($F(2,747) = 109.536$, $p < .001$, $\eta^2 = .227$). H1 is therefore supported.

H2: There is a significant difference in the impact of economic conditions on consumer spending patterns between Cameroon and Nigeria.

The decision tree analysis provides strong support for H2. Job security perception emerged as the primary discriminating factor ($\chi^2 = 13.6$, $p < .001$). Nigerian consumers demonstrated more polarized responses, with a concentration of extreme job security perceptions compared to more moderate perceptions among Cameroonian consumers. H2 is therefore supported.

H3: Different economic factors have varying degrees of influence on consumer spending patterns across the two countries.

The ANOVA effect size estimates (Table 6b) provide clear evidence in support of H3. Job security perception exerts the largest effect ($\eta^2 = .713$), followed by essential goods spending ($\eta^2 = .227$), economic stability perception ($\eta^2 = .135$), economic outlook ($\eta^2 = .074$), and discretionary goods spending ($\eta^2 = .064$). H3 is therefore supported.

Discussion

The analysis of economic perceptions and consumer spending behaviour across Cameroon and Nigeria reveals a set of substantive and theoretically coherent patterns. One of the most notable findings was a general economic optimism documented across both national samples, reflected in high mean scores for economic outlook (4.79) and economic stability perception (4.64). This optimism is consistent with the African Development Bank's 2022 report on the resilience of African economies and extends the theoretical framework of Constantinides (2021), who identify forward-looking income expectations as a key determinant of consumption decisions in developing country contexts. It is important to note, however, that both economic outlook and economic stability perception exhibit severe ceiling effects in this dataset (economic outlook: skewness = -2.77, kurtosis = 7.33; economic stability: skewness = -2.31, kurtosis = 4.89), with the majority of respondents concentrated at or near the maximum scale value. These ceiling effects reduce the discriminatory power of these variables and mean that findings pertaining to them should be interpreted with caution. Future research employing instruments with a wider response range or alternative measurement approaches may capture more meaningful variance in these dimensions.

Through cluster analysis, ANOVA, and decision tree analysis, the study identified three distinctive segments of consumers: "Cautious Spenders," "Inflation-Conscious Consumers," and "Optimistic High Spenders." The identification of these cross-national profiles supports Asongu et al. (2021) on financial development and consumer spending in sub-Saharan Africa.

The cluster "Cautious Spenders" creates a notable paradox, with the low job security score of 1.30 against the relatively high economic stability (4.61) and outlook (4.57) scores. The restrained essential goods spending and markedly low discretionary expenditure in this cluster is consistent with the LCH prediction that individuals facing perceived income

uncertainty will reduce current consumption to accumulate precautionary savings. The finding also aligns with Duffy & Orland, (2020) buffer stock theory, which predicts that households with high income uncertainty will hold precautionary reserves that suppress current consumption.

The cluster "Inflation-Conscious Consumers" is characterised by maximum inflation perception scores (5.00) combined with strong job security (4.80) but depressed essential goods spending (2.37). The maintenance of relatively high discretionary spending alongside suppressed essential goods expenditure fits well with Duffy & Orland, (2020) buffer stock theory on crisis consumption strategies, in which consumers prioritise maintenance of discretionary consumption as a psychological response to perceived economic threat..

The "Optimistic High Spenders" cluster represents the theoretically predicted consumption profile of individuals with both high income expectations and low perceived income uncertainty, consistent with the LCH and the Permanent Income Hypothesis (Friedman, 1957). These findings corroborate observations about the rise of the African consumer by McKinsey & Company (2021) and GSMA (2023). Sustained high spending across income levels within this cluster is consistent with life-stage spending dynamics discussed by Blundell and Stoker (2018).

Decision tree analysis identified job security perception as the key differentiating factor between consumers in Cameroon and Nigeria. The concentration of extreme job security perceptions among Nigerian respondents (63.6%) is theoretically grounded in Nigeria's sustained dependence on oil export revenues, which generates employment volatility that translates into heightened individual-level income uncertainty (IMF, 2023). Cameroon's more diversified economic base has produced comparatively stable employment conditions in the urban centres sampled (African Development Bank, 2022). This demonstrates how national economic conditions shape individual perceptions and, in turn, consumer behavior.

The second-tier split, based on essential goods spending patterns, reflects significant cross-national variations in consumer reactions to economic uncertainty. In Nigeria, consumers displayed more extreme variations in essential goods spending, whereas Cameroonian respondents showed more moderate spending patterns.

Two methodological notes are necessary in interpreting the cross-national findings. First, as discussed in Section 4.1, the income variable employs a shared nominal currency threshold across both countries without purchasing-power adjustment. Because 200,000 NGN represented approximately USD 130–150 at the time of data collection while 200,000 XAF represented approximately USD 330, the income brackets are not equivalent across countries in real economic terms. Cross-national income comparisons are therefore not made in this study. Second, the urban-only sampling design means that findings cannot be generalised to rural or peri-urban populations in either country, whose economic circumstances and consumer behaviours may differ substantially from those documented here.

The results provide strong evidence for all three hypotheses: economic conditions bear a significant impact on consumer spending habits; this impact varies between Cameroon and Nigeria; and different economic variables exert varying degrees of influence on spending behaviour. Critically, the three identified consumer segments cut across national boundaries, suggesting that cluster membership may be a more powerful predictor of spending behaviour than country of residence, a finding with significant practical implications for regional marketing strategy.

Conclusion

This study provides a rigorous quantitative examination of the relationship between economic conditions and consumer spending patterns in Cameroon and Nigeria, offering valuable insights into the complex dynamics shaping consumer behavior in these emerging African markets. Through a combination of K-means cluster analysis and CHAID decision tree modeling, the research has identified distinct consumer segments that transcend national boundaries, challenging the assumption of homogeneous national markets. The findings reveal a generally optimistic economic outlook among consumers in both countries, qualified by more nuanced perceptions of job security. The emergence of three distinct consumer clusters, "Cautious Spenders," "Inflation-Conscious Consumers," and "Optimistic High Spenders", underscores the diversity of consumer behaviors and the need for tailored marketing and policy approaches. Job security perception emerged as a critical differentiating factor, with its influence on spending moderated by overall economic optimism and inflation perceptions. These insights align with established economic theories such as the Life Cycle Hypothesis and the Permanent Income Hypothesis, while also reflecting the unique characteristics of these African markets. As Cameroon and Nigeria continue to evolve economically and digitally, the consumer segmentation framework developed in this study provides a foundation for more targeted and effective marketing and policy interventions.

Recommendations

Based on the findings, the following recommendations are directed at businesses and policymakers operating in Cameroon and Nigeria.

For businesses, segment-based rather than country-based marketing strategies are strongly indicated. The three identified consumer clusters cut across national boundaries, meaning that cluster membership predicts spending behaviour more reliably than nationality alone in many product categories. Companies should develop distinct value propositions for each segment. For the Cautious Spenders segment, characterised by job insecurity and restrained discretionary expenditure, marketing communications should foreground product durability, long-term value, and financial safety. For the Inflation-Conscious Consumers segment, products and communications that position expenditure as an investment or hedge against further price increases are likely to resonate most

effectively. For the Optimistic High Spenders segment, innovation, quality, and aspirational positioning are appropriate given this group's consistently high spending propensity across income levels. Companies should also develop balanced cross-segment product portfolios to mitigate exposure to macroeconomic shocks that affect segments differently.

For policymakers, the high degree of job security polarisation observed among Nigerian respondents warrants prioritised attention. Structural policy measures directed at reducing employment volatility, such as economic diversification initiatives that reduce dependence on oil revenues, would be expected to moderate this polarisation and support more stable consumer demand patterns. Financial inclusion programmes should be designed with explicit awareness of the differing saving and spending orientations across consumer segments. Economic development policies in both countries should incorporate consumer confidence monitoring at the segment level rather than relying solely on aggregate indices.

Future Research

Future research should build upon this study's findings by exploring additional factors that may influence consumer behavior in Cameroon and Nigeria, such as cultural values, digital literacy, and access to financial services. Longitudinal studies could provide insights into how consumer segments evolve in response to economic changes and technological advancements. Additionally, expanding the research to include other African countries would allow for a more comprehensive understanding of consumer behavior across the continent. Future studies might also benefit from incorporating qualitative methods to gain deeper insights into the motivations and decision-making processes underlying the observed spending patterns. Extending the study to include rural and peri-urban populations in both countries would substantially enhance the generalisability of findings and address a notable gap in the current evidence base. Finally, investigating the impact of global economic events, such as the COVID-19 pandemic, on these consumer segments could provide valuable insights for building economic resilience in these markets.

References

- Adebayo, A. A., Bolukale, O. A., & Anagun, A. M. (2025). Internal Macroeconomic Stability Factors and Economic Growth in Nigeria: any Relationship?. *African Banking and Finance Review Journal*, 19(19), 65-83.
- Adebayo, T. S., Onyibor, K., & Akinsola, G. D. (2020). The impact of major macroeconomic variables on foreign direct investment in Nigeria: evidence from a wavelet coherence technique. *SN Business & Economics*, 1(1), 11.
- African Development Bank. (2022). *African Economic Outlook 2022*. African Development Bank Group.
- Asongu, S. A., Nnanna, J., & Acha-Anyi, P. N. (2021). The openness hypothesis in the context of economic development in Sub-Saharan Africa: The moderating role of trade dynamics on FDI. *The International Trade Journal*, 35(4), 336-359.
- Bank of Central African States. (2023). *Annual Report 2022*. BEAC Publications.
- Blundell, R., & Stoker, T. M. (2018). Consumption and the timing of income risk. *European Economic Review*, 109, 14–38.

- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.
- Constantinides, G. M. (2021). *Welfare costs of idiosyncratic and aggregate consumption shocks* (No. w29009). National Bureau of Economic Research.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage Publications.
- Deloitte. (2022). *Digital Consumer Trends in Africa Report*. Deloitte Insights.
- Duffy, J., & Orland, A. (2020). Liquidity constraints and buffer stock savings: Theory and experimental evidence. *SSRN Electronic Journal*. Cited on, 5.
- Fowler, F. J. (2014). *Survey research methods* (5th ed.). Sage Publications.
- Friedman, M. (1957). *A theory of the consumption function*. Princeton University Press.
- Gomes, O. (2022). *Intertemporal and Strategic Modelling in Economics*.
- GSMA. (2023). *The Mobile Economy Sub-Saharan Africa 2023*. GSMA Intelligence.
- Ibrahim, V. H., & Okoh, M. O. (2021). Income inequality and economic development in Nigeria: An empirical assessment. *Journal of Economics and Allied Research*, 6(4), 100-109.
- International Monetary Fund. (2023). *World Economic Outlook: Sub-Saharan Africa*. IMF Publications.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607-610.
- Liang, J. S., Mundy, R. S., & Jagwayan, S. (2024). *E-Commerce in Africa: Divergent Impacts on Rural and Urban Economies* (No. 2412.03879).
- McKinsey & Company. (2021). *The rise of the African consumer*. McKinsey Global Institute.
- Modigliani, F., & Brumberg, R. (1954). Utility analysis and the consumption function: An interpretation of cross-section data. In K. K. Kurihara (Ed.), *Post-Keynesian economics* (pp. 388-436). Rutgers University Press.
- Modigliani, F., & Brumberg, R. (2005). Utility analysis and the consumption function: An interpretation of cross-section data. In F. Modigliani (Ed.), *The collected papers of Franco Modigliani* (pp. 3-45). MIT Press.
- National Bureau of Statistics, Nigeria. (2023). *Consumer Price Index and Inflation Report January 2023*. NBS Publications.
- PricewaterhouseCoopers. (2022). *Nigeria Economic Outlook 2022*. PwC Nigeria.
- Rana, S., Prashar, S., Barai, M. K., & Hamid, A. B. A. (2021). Determinants of international marketing strategy for emerging market multinationals. *International Journal of Emerging Markets*, 16(2), 154-178.
- Sarmiento, M., Marques, S., & Galan-Ladero, M. (2019). Consumption dynamics during recession and recovery: A learning journey. *Journal of Retailing and Consumer Services*, 50, 226-234.
- United Nations. (2022). *World Population Prospects 2022*. United Nations Publications.
- World Bank. (2022). *Poverty and Shared Prosperity 2022: Correcting Course*. World Bank Publications.
- World Bank. (2023). *Global Economic Prospects, January 2023*. World Bank Publications.