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EFFECT OF RETAIL ENVIRONMENTAL FACTORS ON CONSUMER BUYING BEHAVIOUR IN ZARIA, KADUNA STATE

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Abstract

Retail outlets compete not only through prices and product availability but also through the conditions in which customers shop. This study develops an analytical framework for examining the effect of retail environmental factors on consumer buying behaviour in Zaria, Kaduna State, with particular attention to ambient conditions, store layout and accessibility, visual merchandising, and the social and service environment. Grounded in the Stimulus–Organism–Response framework, the proposed research adopts a descriptive, cross-sectional survey design. The defined study population consists of 200 eligible retail consumers, from which a sample size of 134 is determined using Yamane's formula at a 5% margin of error. To demonstrate the intended analysis before fieldwork, a reproducible synthetic dataset containing 134 questionnaire records was generated using five-point Likert-scale items. Descriptive statistics, Cronbach's alpha, and heteroskedasticity-robust multiple regression were applied to these illustrative records. In the simulated results, store layout and accessibility has the largest positive association with the buying-behaviour score (b = 0.388), followed by visual merchandising (b = 0.289), social and service environment (b = 0.210), and ambient conditions (b = 0.184). The model explains approximately 51.7% of the variation in the generated outcome (R^2 = .517). These coefficients and significance tests describe the synthetic data only; they do not constitute evidence obtained from consumers in Zaria and cannot support conclusions about the actual local retail market. The paper therefore offers a structured questionnaire-based research design and a transparent example of how field responses could be analysed. Its practical relevance lies in identifying testable environmental dimensions that retail managers may consider when assessing shopping comfort, convenience, product presentation, and service quality.

Keywords: Retail Environment, Consumer Buying Behaviour, Store Atmospherics, Visual Merchandising, Zaria.

1. Introduction

A customer entering a retail outlet notices far more than the merchandise on the shelves. The temperature of the shop, the ease of moving through its aisles, how clearly goods are displayed and the way attendants respond to questions may all influence whether the customer purchases an item or decides to return. Retailing therefore involves the management of both products and the setting in which consumers encounter them. Kotler (1973) described this deliberate shaping of the purchasing environment as atmospherics, while Bitner (1992) showed why physical surroundings matter to customers and employees alike. Recent retail research identifies sensory elements and interpersonal interaction as important ways physical shops create experiences that differ from online purchasing (Roggeveen et al., 2023).

Consumer buying behaviour refers to the way individuals select, purchase, use and evaluate goods and services. In physical retail outlets, the decision is often influenced by practical

considerations such as affordability and availability, alongside perceptions of convenience, comfort, trust and value. The present study focuses on self-reported buying decisions, willingness to buy and intention to revisit a shop. These outcomes are related but not interchangeable: a respondent may enjoy a store environment yet leave without purchasing because a desired product is unavailable or too expensive. A review of visual merchandising and store atmospherics further distinguishes product presentation from broader features of the shopping environment (Basu et al., 2022).

Ambient conditions are an important component of this experience. Lighting, cleanliness, temperature, ventilation, music and noise levels may create pleasant or unpleasant sensations that affect customers' willingness to remain in a shopping space. Turley and Milliman (2000), in their review of experimental research, showed that atmospheric variables can affect a broad range of shopping-related evaluations and behaviours. These influences are especially relevant where many retailers offer similar products and consumers can readily switch outlets. A meta-analysis of design atmospherics found that lighting, colour, layout and displays were associated with shopping outcomes, although the strength of association differed by feature and outcome (Oduro & De Nisco, 2024).

Store layout and accessibility also matter. Convenient aisles, orderly product categories, visible prices and clear circulation routes make products easier to locate and compare. Where displays obstruct movement or merchandise is poorly arranged, customers may experience inconvenience and reduce the time spent in the shop. Conversely, a functional layout can encourage browsing and facilitate unplanned purchasing decisions. Field research on supermarket design also highlights the potential role of layout and atmospheric elements in customer evaluations (Mantratzis et al., 2023).

Visual merchandising refers to the presentation of products through shelving, signage, display arrangements, colours and related visual cues. Attractive but accurate displays can call attention to products and make shopping more engaging. The interpersonal environment is equally significant: employees' courtesy, willingness to assist, and interactions among shoppers can affect perceived service quality and confidence in purchasing decisions. Grewal and Baker (1994) found that environmental characteristics can influence consumers' acceptance of prices. More recent research connects visual merchandising and layout with shopping decisions in fashion retail environments (Florea et al., 2025).

Zaria presents a useful setting for examining these questions because consumers encounter a range of retail formats, including neighbourhood provision shops, supermarkets, clothing outlets and general merchandise stores. Shopping circumstances can differ considerably across these outlets. For instance, narrow passages may be inconvenient when a shop is crowded, indistinct price labels may prolong a purchase decision, and inadequate ventilation may reduce the time a customer is willing to spend inside. These examples are plausible local retail experiences, not findings attributed to surveyed shoppers. The study is designed to establish whether consumers themselves associate these conditions with their purchasing responses. These contextual observations are motivations for the proposed local study, not verified prevalence estimates for Zaria.

This study therefore examines ambient conditions, store layout and accessibility, visual merchandising, and social or service environment as predictors of consumer buying behaviour in Zaria. The findings are expected to assist retail managers in prioritising improvements that correspond to customers' needs and to contribute evidence to the literature on retail atmospherics in a Nigerian urban setting.

A retail environment should make shopping straightforward: products should be easy to locate, prices should be understandable and customers should receive assistance when needed. Yet stores can differ markedly in the attention paid to ventilation, lighting, space, product displays and service quality. In a busy shop, customers who cannot locate goods may postpone a purchase. Likewise, a consumer who feels uncomfortable or poorly treated may decide to shop elsewhere. These possibilities are important to retailers, but their relative importance cannot be assumed without evidence from the customers concerned.

Previous scholarship has established that the store environment can affect perceived merchandise value, shopping experience and patronage intentions (Baker et al., 2002). Research on multisensory atmospherics also suggests that visual, auditory and other sensory cues are relevant to shopping experiences (Spence et al., 2014). However, results from other markets do not automatically indicate which characteristics matter most in Zaria. Store size, shopping purposes, income constraints, product availability and service expectations can shape how customers respond to otherwise similar environments. For example, Khan et al. (2023) studied the relationship between store design, atmosphere and shopping decisions, while Matthes and Spaid (2026) investigated the influence of curved retail design on shoppers. Their findings cannot automatically be generalized to Zaria.

The specific research gap is therefore an empirical one: within the defined group of retail consumers in Zaria, there is no survey evidence supplied for this study showing the separate associations of ambient conditions, layout and accessibility, visual merchandising, and the social/service environment with buying behaviour. By examining all four factors in one model, the study aims to identify which environmental dimensions are most strongly associated with consumers' responses after accounting for the others. Its purpose is not to claim that the environment overrides price or product availability, but to establish its measurable contribution within the proposed research scope.

This intends to answer the following questions: To what extent do ambient conditions affect consumer buying behaviour in Zaria, Kaduna State? How does store layout and accessibility affect consumer buying behaviour in Zaria, Kaduna State? What is the effect of visual merchandising on consumer buying behaviour in Zaria, Kaduna State? How does the social and service environment affect consumer buying behaviour in Zaria, Kaduna State?

It is in the light of the above questions that the following main and specific objectives: The main objective of the study is to examine the effect of retail environmental factors on consumer buying behaviour in Zaria, Kaduna State. The specific objectives are to: Assess the effect of ambient conditions on consumer buying behaviour in Zaria, Kaduna State: To evaluate the effect of store layout and accessibility on consumer buying behaviour in Zaria, Kaduna State: To determine the effect of visual merchandising on consumer buying behaviour in Zaria, Kaduna State: To examine the effect of the social and service environment on consumer buying behaviour in Zaria, Kaduna State.

2. Literature Review

This section reviews the meaning of the variables, explains the possible behavioural mechanisms linking them and identifies the conceptual basis of the study. Retail atmospherics research provides a useful starting point, although the present investigation concentrates on the specific purchasing context of consumers in Zaria rather than assuming that outcomes reported elsewhere will be repeated locally. Contemporary work on physical retail design, sensory cues and shoppers' responses provides a useful basis for structuring this review (Basu et al., 2022; Oduro & De Nisco, 2024; Roggeveen et al., 2023).

2.1 Conceptual Review

2.1.1 Retail Environmental Factors

Retail environmental factors are the physical, sensory, spatial and interpersonal conditions consumers encounter when shopping. Kotler (1973) emphasised the deliberate design of a purchasing atmosphere. Bitner (1992) later developed the servicescape perspective, identifying ambient conditions, spatial layout/functionality, and signs, symbols and artefacts as relevant dimensions of the physical service setting. Baker et al. (2002) also distinguished ambient, design and social cues when examining store choice. In this study, the construct is organised into four consumer-perceived dimensions that can be measured by questionnaire: ambient conditions, layout/accessibility, visual merchandising and social/service conditions. As Basu et al. (2022) explain in their integrated review, visual merchandising and store-wide atmospherics are related but conceptually distinguishable.

2.1.2 Ambient Conditions and Consumer Buying Behaviour

Ambient conditions include ventilation, temperature, lighting, noise, music and cleanliness. Shoppers may not consciously assess each feature, yet the combination can make a store feel comfortable or unpleasant. For example, excessive heat can discourage browsing, whereas adequate lighting may help consumers inspect merchandise and read labels. Spence et al. (2014) reviewed how sensory aspects of store atmospherics relate to shopping experiences. For this study, the important question is whether customers' own ratings of these conditions are associated with greater willingness to buy and revisit stores in Zaria. The proposed indicators emphasise observable, understandable conditions rather than expensive design features that may not be common across all outlet types. In their meta-analysis, Oduro and De Nisco (2024) report positive relationships between design atmospherics and several shopping outcomes; these are pooled findings, not evidence specific to Zaria.

2.1.3 Store Layout, Accessibility and Consumer Buying Behaviour

Store layout refers to the arrangement of shelves, merchandise categories, entrances, exits and checkout points. Accessibility concerns the ease with which shoppers enter and move within the store, find products and complete transactions. An orderly layout may save time and reduce frustration, while congested passages or unclear product placement can interrupt shopping. The servicescape perspective highlights the functional importance of physical arrangement (Bitner, 1992). Proposed survey items will assess aisle movement, ease of finding goods, placement of product categories and checkout convenience. These indicators will be interpreted with awareness that the layout of a small neighbourhood shop cannot reasonably be judged by the same design expectations as a large supermarket. Mantratzis et al. (2023) considered supermarket layout and atmospheric elements, and Florea et al. (2025) examined store layout alongside visual merchandising in fashion retail.

2.1.4 Visual Merchandising and Consumer Buying Behaviour

Visual merchandising is the presentation of goods through shelf arrangement, window or entrance displays, product grouping, signage, colours and visible price information. Effective merchandising should make merchandise easier to understand and compare, not simply make it look attractive. Store-environment research suggests that design cues can influence shoppers' evaluations of merchandise and store value (Baker et al., 2002). In the Zaria context, clear price tags, well-organised product displays and easily readable signs may be especially practical indicators. The proposed questionnaire will assess whether consumers regard these

features as helpful to their purchase decisions; it will not assume that colourful displays necessarily lead to purchases. Khan et al. (2023) and Florea et al. (2025) provide empirical examples of how product presentation and store design can shape shoppers' decision processes.

2.1.5 Social and Service Environment and Consumer Buying Behaviour

The social and service environment includes the behaviour of sales attendants, the availability of help, the quality of responses to customers' questions and the general experience of interacting with staff and other shoppers. A courteous attendant can help a customer compare alternatives, while poor treatment may undermine trust even where goods are competitively priced. Baker et al. (2002) identified social cues as an important part of the store environment. Here, respondents will be asked about staff courtesy, readiness to assist, clarity of communication and whether interactions make shopping easier. These perceptions will be analysed separately from purely physical store attributes. Research on future physical stores emphasizes interpersonal interaction as well as sensory and personalised atmospheric experiences (Roggeveen et al., 2023).

2.1.6 Consumer Buying Behaviour

Consumer buying behaviour covers the decisions and responses that accompany the purchase of goods. For this investigation, it is operationalised through purchase willingness, the influence of store experience on buying decisions and intention to revisit or recommend an outlet. These questionnaire-based indicators measure reported behaviour and intentions; they do not constitute independently verified transaction records. This distinction matters because a positive survey relationship cannot alone establish that store changes caused an increase in actual sales. Recent evidence further suggests that features of retail design may affect store entry, purchase intentions and experience, depending on the specific setting and mechanism (Matthes & Spaid, 2026).

2.2 Theoretical Framework

2.2.1 Stimulus–Organism–Response (S–O–R) Framework

The study is grounded in the Stimulus–Organism–Response (S–O–R) framework of Mehrabian and Russell (1974). The model proposes that features of an environment (stimuli) influence an individual's internal assessments and feelings (organism), which in turn relate to behavioural responses. In the present study, lighting, layout, displays and customer service constitute the stimuli; perceived comfort, convenience, confidence and store evaluation provide the explanatory organism processes; and willingness to purchase or return to a store forms the response. Because the proposed statistical model tests direct paths from environmental factors to buying behaviour, the organism processes serve as theoretical explanations rather than separately estimated mediators.

This framework is useful because it clarifies why the same merchandise may be assessed differently in different shopping environments. A neatly arranged store may reduce the effort needed to shop, while polite assistance may reassure someone uncertain about a product. Importantly, S–O–R does not imply that every environmental factor must produce a positive or significant effect. Price, availability, shopping urgency and personal preference can also influence consumer decisions. The study therefore treats each relationship as an empirical question to be tested, rather than as a conclusion. The approach is consistent with recent retail design studies applying environmental psychology to shopping responses (Matthes & Spaid, 2026).

3. Methodology

The study is designed as a descriptive cross-sectional survey of retail consumers in Zaria, Kaduna State. The proposed sampling frame contains 200 eligible consumers, treated as the finite study population. For this worked example only, a separate synthetic dataset of 134 records was created computationally; no consumers were recruited or interviewed.

The sample size was determined with Yamane's (1967) formula, $n = N/[1 + N(e^2)]$. With $N = 200$ and $e = 0.05$, $n = 200/[1 + 200(0.05^2)] = 133.33$, rounded upward to 134. This is a planned sample, not evidence of completed data collection.

For actual fieldwork, a simple random selection of 134 consumers from a complete list of 200 eligible persons would be appropriate; where no list exists, the researcher must report and justify a feasible alternative rather than claiming simple random sampling. The illustrative 134-record file was produced with a fixed random seed (20261024) and does not represent sampled Zaria residents.

The questionnaire contains profile questions and the simulated instrument uses four items each for ambient conditions (AC), store layout and accessibility (SLA), visual merchandising (VM), social/service environment (SSE), and consumer buying behaviour (CBB). All 20 items use integer scores from 1 (strongly disagree) to 5 (strongly agree). Scores for each construct are the mean of its four items. The attached CSV contains every generated response and calculated construct score.

In a real study, content validity would be assessed through expert review and a pilot survey, followed by internal consistency analysis. In the illustrative dataset, Cronbach's alpha is computed directly from the four simulated items within each construct. These reliability values assess the generated example only and cannot establish validity for a questionnaire that has not been administered.

Frequencies and percentages summarise synthetic respondent characteristics. Construct means and standard deviations summarise item-scale composites. A multiple linear regression models CBB as a function of AC, SLA, VM and SSE; HC3 heteroskedasticity-robust standard errors, t tests and 95% confidence intervals are reported. The estimates are descriptive properties of an artificial dataset and should not be interpreted as inferential evidence for Zaria consumers.

Model specification: $CBB = \beta_0 + \beta_1 AC + \beta_2 SLA + \beta_3 VM + \beta_4 SSE + \varepsilon$.

Where CBB = Consumer Buying Behaviour; AC = Ambient Conditions; SLA = Store Layout and Accessibility; VM = Visual Merchandising; SSE = Social and Service Environment; β_0 = intercept; β_1–β_4 = model coefficients; and ε = error term. The PLS-SEM estimation will use latent-construct path modelling, so the equation is a simplified representation of the structural relationships.

3.1 Conceptual Model

Retail Environmental Factors		Consumer Buying Behaviour
AC • SLA • VM • SSE	→	Purchase decisions • Purchase intention • Revisit intention

The proposed model examines four independently measured environmental dimensions and one dependent construct, consumer buying behaviour. The arrows represent hypotheses for testing rather than established effects. The model is deliberately limited to consumer

perceptions at selected stores in Zaria; the findings will not be generalised to every retail outlet or shopper in Kaduna State without considering how the sample was selected.

4. Results and Discussion

The tables below are calculated from 134 reproducible SIMULATED consumer records and are included to demonstrate how a completed empirical journal could report its analysis. They are NOT field data, and significance levels apply only to the synthetic responses. Actual findings must be substituted when authentic questionnaire responses become available. These numerical observations were generated for analytical illustration, and no empirical claims about consumers in Zaria are made.

4.1 Demographic Profile of Respondents

Table 1

Simulated Respondent Characteristics (N = 134)

Characteristic	Category	Frequency	Percentage (%)
Gender	Female	68	50.7
	Male	66	49.3
Age group	25–34	47	35.1
	35–44	40	29.9
Age group	18–24	35	26.1
	45 and above	12	9.0
Shopping frequency	Several times weekly	43	32.1
	Weekly	37	27.6
Shopping frequency	Daily	34	25.4
	Less often	20	14.9

Source: Field Survey, 2026

4.2 Measurement Model Assessment

The values reflect the deliberately generated item correlations and are not evidence that the proposed instrument has been validated with real shoppers. Composite reliability and AVE are not reported because no fitted confirmatory measurement model was estimated.

Table 2

Construct Descriptive Statistics and Simulated Internal Consistency

Construct	Items	Mean	SD	Cronbach α
AC	4	3.25	0.73	0.810
SLA	4	3.13	0.79	0.819
VM	4	3.15	0.79	0.849
SSE	4	3.21	0.76	0.807
CBB	4	3.27	0.77	0.860

Source: Field Survey, 2026

4.3 Structural Model and Hypothesis Testing

Table 3 presents HC3-robust ordinary least squares results for the illustrative regression model. Coefficients reflect one-unit differences on the five-point composite scale while holding the other composite scores constant. No causal interpretation is warranted.

Table 3

Simulated Multiple Regression Results (Dependent Variable: CBB)

Predictor	β	Robust SE	t	p	95% CI
AC	0.184	0.065	2.85	0.0044	[0.057, 0.310]
SLA	0.388	0.062	6.26	< .001	[0.267, 0.510]
VM	0.289	0.072	4.02	0.0001	[0.148, 0.430]
SSE	0.210	0.068	3.11	0.0018	[0.078, 0.343]

Source: Field Survey, 2026

Model summary: n = 134; R^2 = 0.517; adjusted R^2 = 0.502. These statistics reflect only the synthetic dataset.

4.4 Discussion of Findings

The simulated results illustrate a possible pattern in which more favourable ambient conditions, better layout and accessibility, stronger visual merchandising, and more helpful social/service experiences coincide with higher buying-behaviour scores. The relative magnitude of the coefficients is a property of the simulation design and should not be ranked as evidence about retailers in Zaria. This demonstration supports the practicality of the proposed questionnaire and analytical sequence, but it does not confirm the research hypotheses. For field-based interpretation, the researcher should compare empirical coefficients, uncertainty intervals and observed store contexts with the store-atmospherics literature (Baker et al., 2002; Turley & Milliman, 2000). These patterns are illustrative only. They may be discussed in relation to empirical research on visual merchandising, store layout and atmospheric cues (Florea et al., 2025; Khan et al., 2023; Oduro & De Nisco, 2024), but they cannot be interpreted as a replication or local validation of those studies.

5. Conclusion and Recommendations

5.1 Conclusion

This paper specifies a retail-environment study for a population of 200 eligible consumers and a planned sample of 134 in Zaria, Kaduna State. Using synthetic questionnaire data, it demonstrates a complete reporting workflow: demographic summary, construct statistics, reliability and multivariable regression. The numerical results are entirely simulated and therefore cannot substantiate claims that retail environmental factors affect the behaviour of actual Zaria consumers. The substantive study remains to be completed through ethical recruitment, questionnaire administration and replacement of these illustrative results with analysis of observed responses.

5.2 Recommendations

The following recommendations are tentative suggestions from retail-atmospherics theory, not actions supported by locally measured effects. They should be revisited after real field data are obtained:

i. Retail managers should monitor lighting, ventilation, cleanliness and noise levels to make shopping spaces more comfortable.

ii. Retail outlets should improve aisle accessibility, product categorisation and clear pricing to help customers find merchandise efficiently.

iii. Store operators should use orderly, informative merchandise displays and visible signage that accurately communicate product characteristics.

iv. Retail staff should receive regular guidance on courteous customer interaction, product assistance and responsive service delivery.

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