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**AN ASSESSMENT OF THE INFLUENCE OF PACKAGING ON CONSUMER
PURCHASING DECISIONS FOR MADE-IN-NIGERIA CONSUMABLE PRODUCTS IN
NASARAWA STATE**

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Abstract

This study examined the influence of packaging attributes on consumer purchasing decisions for made-in-Nigeria consumable products in Nasarawa State. A causal research design was adopted to identify and explain the cause-and-effect relationships between key packaging variables specifically product labelling and packaging innovativeness and consumer buying behaviour. The target population comprised consumers in Nasarawa State, and a sample size of 450 respondents was determined using Cochran's (1977) formula, with a 17 per cent oversampling rate to accommodate potential non-responses. A multistage sampling technique was employed, involving the random selection of Local Government Areas across the state's three senatorial districts and the cluster sampling of respondents within each selected area. Data were collected using a structured questionnaire. Data analysis was conducted using Partial Least Squares Structural Equation Modelling (PLS-SEM) to examine the relationships between packaging attributes and consumer purchasing decisions. The findings revealed that both product labelling and packaging innovativeness exert significant influences on consumer purchasing decisions for made-in-Nigeria consumable products in Nasarawa State. Based on these findings, the study recommends that manufacturers enhance product labelling by providing clear, accurate, and easily accessible information to strengthen consumer trust and facilitate informed purchasing decisions. In addition, producers should invest in innovative packaging designs that enhance product appeal, differentiate products in the marketplace, and increase consumer purchase intention.

Keywords: Packaging, Labelling, Packaging Innovation, Consumer Purchasing Decisions, Consumable Products



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Introduction

Across the world, consumer purchasing decisions constitute a fundamental aspect of market dynamics and business sustainability, as they determine the extent to which goods and services are promoted, accepted, patronised, and sustained within competitive business environments. In an increasingly complex and choice-driven marketplace, consumers are exposed to a wide range of alternatives, causing their purchasing decisions to be influenced by multiple psychological, social, economic, and product-related factors that ultimately shape what they choose to buy or not to buy. Consumer purchasing decision represents the cognitive and behavioural process through which consumers identify needs, evaluate available alternatives, select products, and assess post-purchase outcomes, and it remains a central construct in consumer behaviour and marketing research (Dibie & Olannye, 2022; Ndulue, 2020). In contemporary consumer markets, purchasing decisions are increasingly influenced by extrinsic product cues due to information overload, time constraints, and the similarity of product offerings. As a result, consumers frequently rely on easily accessible signals such as packaging information and design features to guide their choices, particularly in the case of low-involvement consumable products (Underwood & Klein, 2020; Klimchuk & Krasovec, 2021).

Packaging has therefore emerged as a critical communication tool that bridges the information gap between producers and consumers at the point of sale. In self-service retail environments, packaging often serves as the primary source of product information, influencing perceptions of quality, safety, credibility, and brand trust (Silayoi & Speece, 2019). In emerging economies such as Nigeria, where formal consumer education and regulatory awareness may vary, packaging plays an even more significant role in shaping purchasing decisions by providing cues that simplify evaluation and reduce perceived risk (Adeola & Ezenwafor, 2021; Omamuzo & Okeke, 2023).

Labelling constitutes a key informational element of packaging that directly affects consumer purchasing decisions by communicating product attributes, usage instructions, nutritional content, safety warnings, and regulatory compliance (Magnier & Schoormans, 2019; Osei-Tutu et al., 2022). Clear, accurate, and visually appealing labels enhance consumer understanding and confidence, thereby increasing the likelihood of purchase. Empirical evidence suggests that



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consumers are more inclined to purchase products with labels that are easy to read, trustworthy, and aligned with their informational needs, especially in the consumables sector where health and safety considerations are paramount (Ares et al., 2021).

Packaging innovation, on the other hand, refers to the introduction of novel packaging designs, materials, technologies, or functionalities that enhance product value and consumer experience. Innovative packaging can improve convenience, sustainability, and usability while also differentiating products in competitive markets (Rundh, 2020; Ketelsen et al., 2020). Recent studies indicate that innovative packaging positively influences consumer perceptions of brand modernity, quality, and environmental responsibility, which in turn shapes purchasing decisions (Magnier & Cri e, 2020; Adeola et al., 2023). For Made-in-Nigeria consumable products in Nasarawa State, both labelling and packaging innovation are critical tools for influencing consumer purchasing decisions and enhancing market competitiveness.

Consumer purchasing decisions for consumable products in Nigeria are increasingly complex due to rising competition, product similarity, and heightened consumer awareness. In Nasarawa State, Made-in-Nigeria consumable products often compete with imported alternatives that provide clearer labels and more innovative packaging solutions. Despite offering similar functional benefits, many local products are perceived as lacking adequate product information and modern packaging features, which negatively affects consumer confidence and purchase intention (Omamuzo & Okeke, 2023; Adeola et al., 2023). This situation raises concerns about the effectiveness of labelling and packaging innovation strategies employed by indigenous manufacturers.

Although existing studies acknowledge the importance of labelling and packaging innovation in influencing consumer behaviour, empirical evidence remains fragmented and context-specific. Most prior studies have focused on developed economies or major Nigerian cities, with limited attention given to Nasarawa State and similar sub-national markets (Ares et al., 2021; Rundh, 2020). Moreover, few studies have simultaneously examined the influence of labelling and packaging innovation on consumer purchasing decisions for Made-in-Nigeria consumables. This



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empirical gap stresses the need for a focused investigation into how these packaging dimensions influence consumer purchasing decisions within Nasarawa State. The main objective of this study is to examine the influence of labelling and packaging innovation on consumer purchasing decisions for Made-in-Nigeria consumable products in Nasarawa State. The study specifically seeks to:

- i. examine the effect of labelling on consumer purchasing decision for Made-in-Nigeria consumable products in Nasarawa State;
- ii. evaluate the influence of packaging innovation on consumer purchasing decision for Made-in-Nigeria consumable products in Nasarawa State.

Statement of Hypotheses

H₀₁: Labelling has no significant effect on consumer purchasing decision for Made-in-Nigeria consumable products in Nasarawa State.

H₀₂: Packaging innovation has no significant effect on consumer purchasing decision for Made-in-Nigeria consumable products in Nasarawa State.

Literature Review

Consumer purchasing decision is the process through which consumers evaluated product alternatives and made final choices based on perceived value, personal preferences, and available information (Kotler & Keller, 2016). It was also described as a sequence of mental and behavioural steps that guided buyers from recognising a need to completing a purchase (Guo et al., 2024). Furthermore, it was considered the outcome of both internal and external influences, including marketing cues and product attributes, which collectively shaped consumer evaluation and final buying behaviour (Silayoi & Speece, 2021).

Packaging was described as the materials and design used to protect products, provide information, and ensure functionality during storage, transport, and use (Rundh, 2022). It was also considered a marketing tool that communicated brand identity, quality, and value to consumers at the point of sale (Silayoi & Speece, 2021). Additionally, packaging was regarded as a crucial element of the



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product offering that influenced consumer perception, evaluation, and purchase intention (Kotler & Keller, 2016).

Labelling involves the textual and graphical information placed on packaging to convey product details such as ingredients, usage instructions, and expiry dates (Guo et al., 2024). It was also described as a critical cue that reduced consumer uncertainty, facilitated informed decision-making, and enhanced confidence at the point of purchase (Silayoi & Speece, 2021). Moreover, labelling was recognised as a key determinant of consumer evaluation, trust, and preference, particularly in competitive markets where accurate information influenced choice (Rundh, 2022).

Packaging innovation is a strategic and rapidly evolving field that extends far beyond the basic function of containing a product. It involves the introduction of new functional, structural, and aesthetic features designed to enhance product appeal, strengthen brand differentiation, and promote sustainability. In contemporary markets, packaging innovation has become a critical tool for engaging consumers and creating memorable often interactive experiences, thereby transforming the unboxing process into a key marketing touchpoint.

It was also described as the application of creative design and technological improvements to improve usability, convenience, and consumer experience (Rundh, 2022). Furthermore, packaging innovation was considered a strategic marketing tool that influenced consumer perception, trust, and purchase intention by increasing product visibility and perceived quality (Silayoi & Speece, 2021).

Empirical Review

Guo et al. (2024) conducted an empirical systematic review examining the effect of front-of-package nutrition labelling on consumer behaviour among young adults. The study reviewed peer-reviewed quantitative studies published between 2014 and 2023, drawing data from experimental designs, cross-sectional surveys, and quasi-experimental studies across multiple countries. Most studies used structured questionnaires and controlled experiments to measure comprehension, attention, and purchase intention. The results showed interpretive labels such as warning labels and colour-coded systems significantly improved consumer understanding and influenced



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healthier purchase decisions compared to neutral labels. A major limitation identified was the heavy reliance on experimental settings, which may not fully capture real-world purchasing behaviour.

Silayoi and Speece (2021) empirically examined how packaging elements, including labelling information, influence consumer purchase decisions. The study adopted a survey research design and collected primary data from supermarket shoppers using structured questionnaires. Factor analysis and regression techniques were applied to analyse relationships between packaging attributes and buying behaviour. The findings showed informational elements on labels significantly influenced consumer evaluation, especially for food and household consumables. Consumers depended on label cues when time pressure was high and product familiarity was low. Limitations included the use of self-reported data, which may introduce response bias, and a focus on urban retail outlets, which limited rural consumer representation.

Rundh (2022) carried out an empirical review on packaging design and consumer decision-making using evidence from survey-based and experimental studies. The methodology involved analysing quantitative consumer studies that applied regression analysis, SEM, and eye-tracking techniques to assess behavioural response to packaging innovation. The results showed innovative packaging design significantly influenced attention, brand differentiation, and purchase behaviour across competitive markets. Functional and aesthetic innovations were found to be more effective than traditional packaging. The review study showed limited empirical evidence from African markets, creating a contextual research gap relevant to developing economies.

This study was underpinned by the Stimulus-Organism-Response (S-O-R) Theory, propounded by Mehrabian and Russell (1974). The theory explains that external stimuli in an environment influence the internal states of an individual, which subsequently drive observable responses. In this framework, stimuli refer to environmental cues or product attributes, the organism represents the consumer's emotional and cognitive state, and the response reflects the behavioural outcome. The theory has been widely applied in consumer behaviour research to explain how marketing stimuli, such as product packaging, colour, and labelling, affect consumer perception, evaluation,



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and ultimately purchase decisions. It posits that positive and appealing stimuli evoke favourable internal reactions that increase the likelihood of a desired behavioural response (Mehrabian & Russell, 1974; Donovan & Rossiter, 1982).

In the context of this study, packaging attributes including labelling and innovativeness—served as the stimulus, influencing the internal perceptions and evaluations of consumers (the organism), which then determined their purchasing decisions (the response). The relationship outlined by the S-O-R model supports the investigation of how different packaging elements impact consumer choice, as attractive, informative, and innovative packaging is expected to generate positive perceptions and encourage purchase behaviour. Applying this theory, the study conceptualised the causal pathway linking packaging features to consumer decision-making, providing a theoretical justification for analysing the direct effect of labelling and packaging innovation on consumer purchase intention.

Methodology

This study employed a causal research design to explore the impact of packaging attributes on consumer purchase decisions. This methodological approach is essential for identifying and elucidating cause-and-effect relationships among clearly defined variables, allowing researchers to understand how specific packaging characteristics influence consumer behavior in a measurable way. In this context, the key variables examined include various packaging attributes such as innovation, and labeling and their direct effects on consumers' purchasing choices, providing perceptions that can inform marketing strategies in the fast-evolving consumer goods market. The target population for this research comprised consumers who engage in purchasing made-in-Nigeria consumable products within Nasarawa State. Ascertaining the precise size of this population was challenging due to its variability and the lack of comprehensive records.

The study sample size was determined using Cochran's (1977) formula, which is a well-established statistical method for calculating sample sizes in finite populations. The parameters used in the calculations included:



$$SS = \frac{Z^2(P) \times (1-P)}{C^2}$$

- Where: SS - Necessary Sample Size
- Z - Z score at 5% level of significance (1.96)
- P - Population Proportion (0.5 for the study)
- C - Margin of Error (0.05)

The sample size was, thus, computed as

$$\begin{aligned}
 &= \frac{1.96^2(0.5) \times (1-0.5)}{0.05^2} \\
 &= \frac{3.8416(0.5) \times (0.5)}{0.0025} \\
 &= \frac{1.9208(0.5)}{0.0025} \\
 &= \frac{0.9604}{0.0025} \\
 SS &= 384.16 \\
 SS &\approx 385
 \end{aligned}$$

Nevertheless, in order to accommodate possible non-responses or analogous scenarios, and to guarantee an adequate response count to fulfil the desired sample size, a 17% rate of oversampling was done. Consequently, an additional 65 participants were factored in. This augmentation elevated the overall sample size to 450 participants. The oversampling carried out had substantial importance in guaranteeing the research attained the stipulated minimum sample size and procured a resilient data set for thorough analysis. Thus, the definitive sample size for the study was firmly set at 450 participants.

A multistage sampling technique was employed to ensure a representative sample across various communities within Nasarawa State. The process included a random Selection of Local Government Areas (LGAs): One LGA was randomly selected from each of the three senatorial districts Lafia (Southern), Akwanga (Northern), and Keffi (Western). Furthermore, within each selected LGA, cluster sampling was used to randomly choose respondents, facilitating the collection of data from diverse population segments while minimizing logistical challenges.



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Table 1: Distribution of Sample Across Selected Areas

Area (LGA)	Senatorial District	Questionnaires Distributed
Lafia	Southern	150
Akwanga	Northern	150
Keffi	Western	150
Total		450

This structured approach provides a balanced representation, allowing for a comprehensive understanding of consumer preferences across the state. Data collection was executed using a structured questionnaire, developed to capture relevant insights into consumer behavior. The instrument was carefully adapted from validated scales utilized in previous consumer behavior and packaging studies, with particular reference to work by Silayoi and Speece (2007) and Ampuero and Vila (2006). Modifications were applied to ensure the items were contextually relevant to the Nigerian market. The questionnaires were administered using a drop-off and pick-up method, facilitated by trained research assistants who provided guidance and support to respondents, ensuring a higher response rate and improved quality of data collection.

Validity and Reliability

Content validity was achieved through a thorough expert review, ensuring that the items accurately represented the constructs being measured and were aligned with established literature in consumer behavior and marketing research. This process involved consultations with subject matter experts to confirm the relevance and comprehensiveness of the questionnaire. Reliability was assessed using Cronbach's Alpha, a widely recognized statistic for measuring the internal consistency of scales. A Cronbach's Alpha value above 0.70 is generally considered acceptable, indicating that the items within each construct consistently measure the intended variable.

Table 2: Reliability Test Results

Construct	Number of Items	Cronbach's Alpha
Labelling	6	0.86

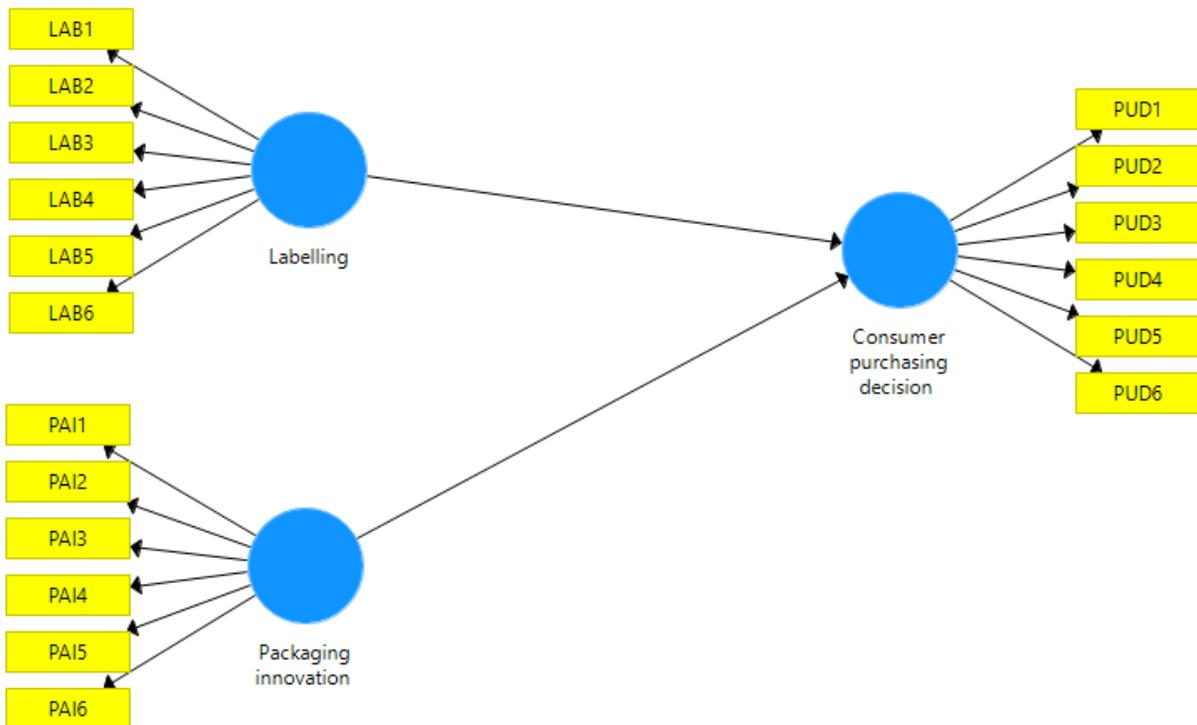


Construct	Number of Items	Cronbach's Alpha
Innovativeness	6	0.80
Purchase Decision	6	0.88

The Cronbach's Alpha results confirmed that all constructs exceeded the acceptable reliability threshold, indicating that the measurement scales were consistent and suitable for analysis.

Data analysis was conducted utilizing Partial Least Squares Structural Equation Modelling (PLS-SEM), a statistical technique well-suited for examining complex relationships between multiple variables. This method was selected for its ability to handle various constructs and facilitate predictive analysis.

Figure 1: Graphical Model





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Data Analysis and Discussion

The survey conducted in the study involved the administration of a total of 450 copies of the research instrument in a field survey for the purpose of obtaining needed data. 418 copies out of these were retrieved and put through preliminary analysis, including data cleaning, coding and missing value evaluation. Consequently, 391 were determined to be valid and retained for the study. This therefore, reflected the sample size relied upon by the study. A summary of information concerning the administration of the research instrument is presented in table 1.

Table 1: Questionnaire Administration and Retention Information

Description	Number
Administered	450
Retrieved	418
Retained	391
Discarded	27

Source: Researcher's Compilation.

Retained questionnaire copies viz-a-viz administered, provided a response rate of 87%, providing more than adequate sources of needed primary data, especially, as the sample requirement of the study was satisfactorily met.

In PLS-SEM (Partial Least Squares Structural Equation Modeling), the measurement model is a critical part of the analysis. The measurement model specifies the relationships between observed variables (indicators) and their underlying latent constructs. It is composed of two main components: reflective and formative indicators. Reflective indicators are those that reflect the underlying construct they were measuring, while formative indicators contributed to defining the underlying construct. The measurement model was estimated through the calculation of factor loadings, which indicated the strength of the relationship between each observed variable and its underlying latent construct.

In this study, all indicators assessed in SmartPLS met the commonly accepted threshold of 0.7 for factor loadings, indicating strong reliability and validity of the measurement model. Additionally, these indicators met the Average Variance Extracted (AVE) threshold and were statistically significant, further supporting their inclusion in the final model. This approach ensured that the



measurement model remained both statistically strong and conceptually comprehensive. (Collier, 2020; Hair et al., 2014). The result is shown in Figure 2 and Table 4.

Figure 2: Measurement Model

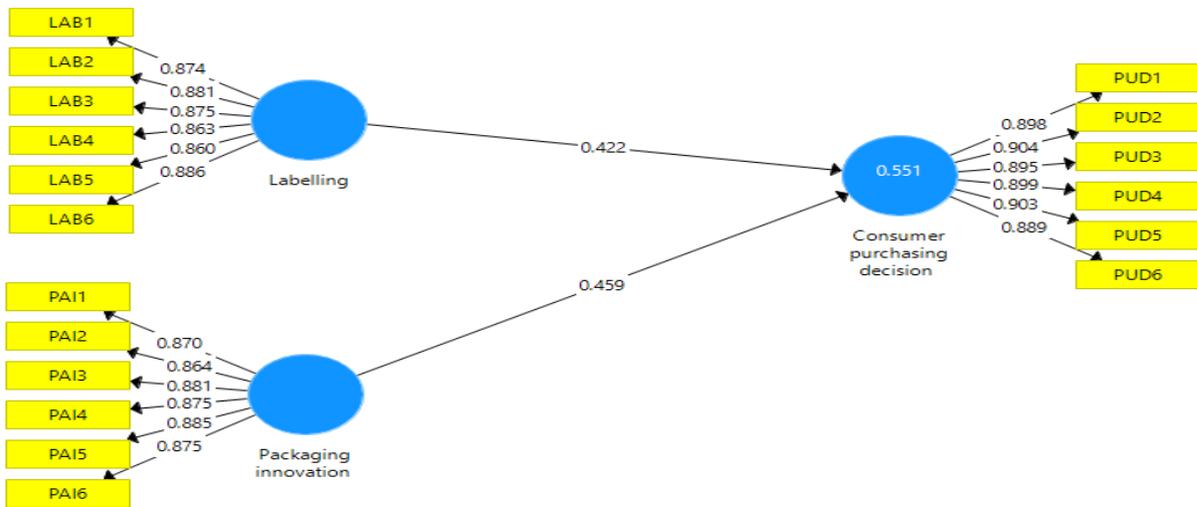


Table 4: Convergent Validity and Reliability of the Constructs and Indicators

Items	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Consumer purchasing decision		0.807	0.810	0.671
PUD1	0.898			
PUD2	0.904			
PUD3	0.895			
PUD4	0.899			
PUD5	0.903			
PUD6	0.889			
Labelling		0.818	0.881	0.672
LAB1	0.874			
LAB2	0.881			
LAB3	0.875			
LAB4	0.863			
LAB5	0.860			
LAB6	0.886			
Packaging innovation		0.809	0.879	0.584



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PAI1	0.870
PAI2	0.864
PAI3	0.881
PAI4	0.875
PAI5	0.885
PAI6	0.875

Source: *SmartPLS Output*

Table 4 presents the convergent validity and reliability results for study variables. All indicator loadings exceeded the minimum threshold of 0.70, indicating strong item reliability and showing that each item adequately measured its respective construct. The Cronbach's Alpha values for were all above the recommended benchmark of 0.70, confirming satisfactory internal consistency among the measurement items. Composite Reliability values also surpassed the acceptable level of 0.70, further confirming construct reliability in line with established PLS-SEM standards. The Average Variance Extracted (AVE) values for all constructs were above 0.50, indicating that each construct explained more than half of the variance in its indicators. These results confirm adequate convergent validity and suggest that the measurement model was reliable and suitable for further structural analysis.



Table 5: Heterotrait-Monotrait (HTMT) Ratio

	Consumer purchasing decision	Labelling	Packaging innovation
Consumer purchasing decision			
Labelling	0.635		
Packaging innovation	0.659	0.428	

Source: *SmartPLS Output*

Table 5 reports the Heterotrait-Monotrait (HTMT) ratio, which assesses discriminant validity. An HTMT value below 0.85 is considered acceptable, while values above 0.90 indicate a lack of discriminant validity (Henseler et al., 2015).

Table 6: Coefficient of Determination

	R Square	R Square Adjusted
Consumer purchasing decision	0.551	0.549

Source: *SmartPLS Output*

Table 6 presents the coefficient of determination for consumer purchasing decision. The R Square value of 0.551 shows packaging attributes jointly explain 55.1 percent of the variation in consumer purchasing decision. This level reflects strong explanatory power for a behavioural study. The adjusted R Square of 0.549 confirms model stability after accounting for predictors and sample size. The narrow difference between both values signals limited model inflation. The result indicates packaging variables such as colour, material, wrapping, labelling, and innovativeness play a major role in shaping purchase decisions for made-in-Nigeria consumable products in Nasarawa State.



Figure 3: Structural model

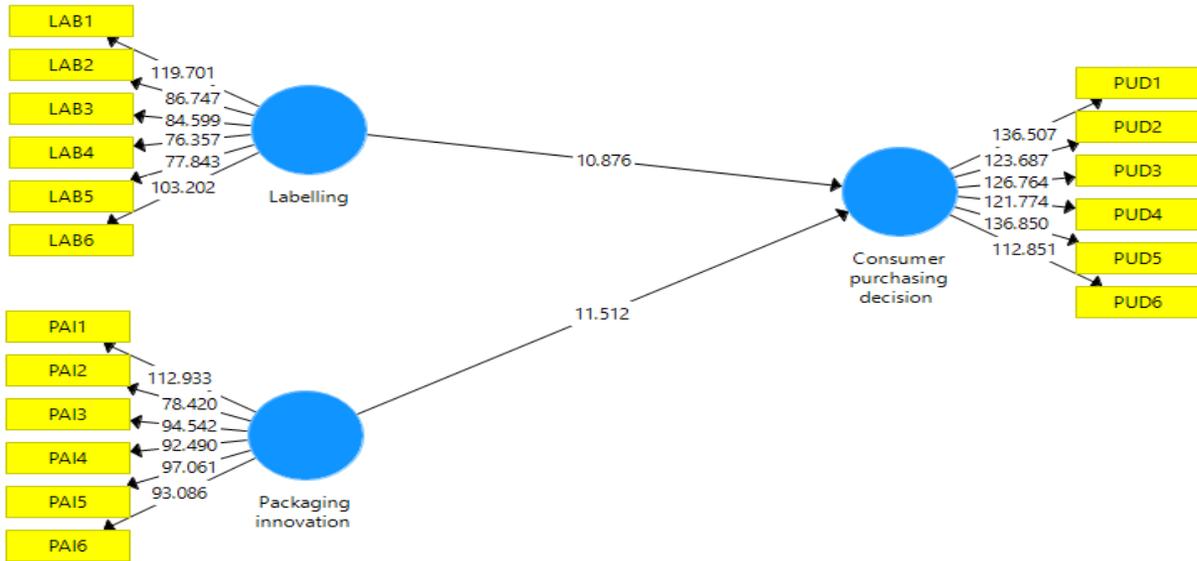


Table 7: Path Coefficient

Hypotheses	Beta	Sample Mean	Standard Deviation	T Statistics	P Values
Labelling -> Consumer purchasing decision	0.422	0.423	0.039	10.876	0.000
Packaging innovation -> Consumer purchasing decision	0.459	0.462	0.040	11.512	0.000

Source: *SmartPLS Output*

The path coefficient for labelling shows a strong and significant relationship with consumer purchasing decision ($\beta = 0.422$, $t = 10.876$, $p = 0.000$). This result shows labelling plays a decisive role in shaping consumer choice. Clear product information, symbols, and usage guidance support evaluation at the point of purchase. Guo et al. (2024) show front-of-package labels improve consumer understanding and directly influence food selection decisions. Silayoi and Speece (2021) also report consumers rely on label information when comparing alternatives, especially for consumable goods. The finding confirms effective labelling reduces uncertainty and strengthens purchase confidence among buyers of made-in-Nigeria products.



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The path coefficient for packaging innovation also shows a strong and statistically significant effect on consumer purchasing decision ($\beta = 0.459$, $t = 11.512$, $p = 0.000$). This result indicates packaging innovation exerts a stronger influence on purchase decision than labelling. Innovative packaging improves product visibility, perceived quality, and differentiation on the shelf. Rundh (2022) further explains innovative design elements shape consumer perception and trigger buying action in competitive markets. The result confirms packaging innovation plays a central role in influencing consumer purchasing decisions for made-in-Nigeria consumable products.

Conclusion and Recommendations

- i. The study concludes that both labelling and packaging innovation significantly influence consumer purchasing decisions for made-in-Nigeria consumable products. Labelling provides essential information that guides consumers during product evaluation, reduces perceived risk, and strengthens trust, while packaging innovation enhances product visibility, differentiation, and perceived value. The findings demonstrate that these packaging attributes collectively shape consumer behaviour, with packaging innovation exerting a slightly stronger effect than labelling. This underscores the critical role of effective product presentation in driving purchase decisions and highlights the need for manufacturers to prioritise both informational and creative packaging strategies. hen consumer purchase intention.

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Base on the findings, the following recommendations were raised:



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- ii. Manufacturers should improve product labelling to provide clear, accurate, and easily accessible information that enhances consumer trust and facilitates informed purchase decisions.
- iii. Producers should invest in innovative packaging designs that increase product appeal, differentiate products in the market, and strengt