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EFFECT OF PRODUCT PACKAGING ON SALES PERFORMANCE AMONG SMALL-SCALE ENTERPRISES IN NYAMAGANA DISTRICT, MWANZA CITY

By

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Abstract

Purpose: *This study examines how product packaging influences sales performance among small-scale spice sellers in Mwanza City, Tanzania. It focuses on three packaging dimensions materials, labeling, and design features and assesses their collective and individual effects on sales outcomes.*

Design/methodology/approach*: A descriptive cross-sectional research design was adopted. Primary data were collected from 66 spice sellers in Nyamagana District using structured questionnaires. Quantitative analysis was conducted through SPSS, employing descriptive statistics, correlation, and multiple regression models (Model 1–3) to determine the influence of packaging variables on sales performance.*

Findings*: Results revealed that packaging materials, labeling elements, and design features significantly affect sales performance. Packaging design features had the strongest predictive power ($\beta = 0.628$, $p < 0.001$), followed by labeling elements ($\beta = 0.424$, $p < 0.01$), and packaging materials ($\beta = 0.362$, $p < 0.05$). Collectively, these variables explained over 90% of the variance in sales performance ($R^2 = 0.903$). Color emerged as the most influential design attribute, while labeling enhanced credibility through brand and expiry information.*

Originality/value*: This paper extends the application of the Stimulus–Organism–Response (S–O–R) Model and Brand Equity Theory to informal market settings in developing economies, providing empirical evidence from Tanzania's spice sector a context rarely studied.*

Practical implications: *Findings emphasize the need for small-scale entrepreneurs to invest in cost-effective yet visually appealing and informative packaging. Policymakers and development partners can use these insights to design training and support programs that enhance packaging quality, hygiene, and market competitiveness.*

Social implications*: Improved packaging practices can enhance consumer trust, promote sustainable material usage, and strengthen the livelihoods of micro-entrepreneurs in local food markets.*

Keywords*: Product packaging, sales performance, labeling, design, packaging materials, small-scale enterprises, S–O–R model, Tanzania*

1. Introduction

Product packaging plays a vital role in influencing consumer perceptions and purchasing behavior, particularly in competitive markets where visual appeal and product differentiation determine sales performance (Silayoi and Speece, 2007; Harris, 2021). Packaging serves not only to protect goods but also to communicate value, quality and brand identity (Pereira and Costa, 2020). In fast-moving consumer goods (FMCG) industries, packaging design, labeling and materials are known to create strong visual stimuli that shape consumers' emotional responses and purchase intentions (Yu and Liu, 2020; Martins et al., 2020).

In many developing economies, however, small-scale enterprises continue to view packaging primarily as a cost rather than a strategic marketing tool (Munyua, 2017). Across

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Africa, the rapid urbanization of consumer markets has increased expectations for hygiene, convenience and professionalism in product presentation, yet most micro and small producers lack the capital and knowledge to upgrade their packaging systems (Moyo et al., 2021). This situation is evident in Tanzania, where local spice sellers still rely on basic plastic wraps, reused containers and minimal labeling that fail to attract or retain customers compared with imported or factory-packaged products (Mussa and Mhando, 2021; Julius and Batonda, 2022).

In Mwanza'sNyamagana District, a key hub for spice trading, small-scale vendors face increasing competition from branded and attractively packaged imports. Despite the growing relevance of packaging in consumer decision-making, empirical studies on its influence in informal or semi-formal markets remain scarce (Sakaya, 2020). Prior research in Tanzania has mainly focused on food packaging standards and labeling compliance rather than on the behavioral impact of packaging elements on actual sales performance (Komba and Ngailo, 2021). Thus, there exists a clear knowledge gap regarding how packaging materials, labeling elements and design features jointly shape sales outcomes for small-scale enterprises.

This study addresses that gap by empirically examining how product packaging affects sales performance among small-scale spice sellers in Mwanza City. It integrates the Stimulus Organism Response (S O R) Model (Mehrabian and Russell, 1974) and Brand Equity Theory (Aaker, 1991; Keller, 1993) to explain how visual and informational packaging cues (stimuli) influence consumers' perceptions and trust (organism), leading to purchasing behavior and improved sales (response). Through regression analysis of survey data from 66 spice vendors, the study tests the relationship between packaging dimensions and sales performance.

The paper contributes to the packaging and marketing literature in three ways. First, it extends the application of behavioral and branding theories to small-scale enterprises in emerging markets, providing localized evidence from Tanzania's spice sector. Second, it empirically quantifies the influence of specific packaging dimensions materials, labeling and design on sales performance, an area with limited quantitative research in the East African context. Third, it provides actionable insights for entrepreneurs and policymakers to enhance competitiveness through packaging innovations that align with market expectations and consumer trust.

2. Literature Review

2.1 Theoretical Background

The study draws upon two interrelated theories the Stimulus Organism–Response (S O R) Model and Brand Equity Theory to explain how packaging influences consumer behavior and sales performance. The (S O R) model, proposed by Mehrabian and Russell (1974), posits that external stimuli (S) such as product attributes trigger internal cognitive and emotional reactions (O), leading to behavioral responses (R). In the marketing context, visual and informational packaging elements such as color, labeling clarity and material quality serve as stimuli that evoke consumer perceptions of value, trust and satisfaction, which in turn affect purchase decisions (Donovan and Rossiter, 1982; Silayoi and Speece, 2007).

In this framework, packaging elements such as design, labeling, and material constitute the stimuli, while consumers' perceptions and emotions represent the organism stage, and their purchasing or repurchasing actions embody the response (Kuvykaite et al., 2009). For instance, clear labeling enhances confidence in product quality, while eco-friendly or durable materials evoke positive feelings toward sustainability and hygiene (Rundh, 2009; Pires et al., 2018).

However, the S–O–R model focuses primarily on immediate reactions and does not fully account for brand-based perceptions formed through experience. To complement this limitation, Brand Equity Theory (Aaker, 1991; Keller, 1993) is incorporated. This theory highlights how brand awareness, loyalty and perceived quality mediate consumer evaluations of product cues. High brand equity can strengthen the impact of packaging on purchase intent, as familiar brands may rely less on visual appeal, while new or unknown brands depend heavily on packaging to communicate reliability (Keller, 2003). The integration of these theories allows for both short-term sensory and long-term cognitive explanations of how packaging drives sales performance.

This combined framework is particularly relevant in informal and semi-formal market settings such as Tanzania's spice trade, where branding is weak, and consumer trust depends heavily on visible product presentation. Thus, it provides a holistic lens for analyzing how packaging functions as both a marketing tool and a credibility signal.

2.2 Empirical Studies

2.2.1Packaging Design Features and Sales Performance

Packaging design features including color, shape, typography and layout serve as the first point of interaction between consumers and products. Studies across various contexts highlight that aesthetically appealing packaging enhances product visibility and stimulates purchase intent (Shankar, Garretson and Spence, 2020). In East Africa, Kilonzo et al. (2021) observed that colorful and professionally printed spice packages were strongly associated with perceptions of freshness and hygiene. Similarly, Muzambi and Chibwe (2022) found that replacing handwritten labels with printed designs improved buyer confidence and repeat purchases in Zimbabwe's spice markets.

Psychological research underscores the emotional and cognitive dimensions of design: Garg et al. (2022) demonstrated that visual harmony and ergonomic design increased recall and repeat purchase rates by over 25%. In Tanzanian contexts, Mussa and Mhando (2021) noted that poor design often generic or inconsistent reduces consumer attention, undermining sales potential. Collectively, these findings confirm that design attributes are not merely aesthetic but functional determinants of product success.

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2.2.2Labeling Elements and Sales Performance

Labels communicate critical information such as ingredients, expiry dates, and origin. Clarity and credibility of labeling significantly affect consumer trust and purchase decisions (Kim and Kang, 2020). In East African markets, Ochieng (2021) found that products with detailed labels, including usage instructions and manufacturer details, achieved up to 15% higher sales compared with unlabeled alternatives. Louw and Mbuyane (2019) reported similar effects in South Africa, where certification marks (e.g., "ISO certified") served as trust enhancers.

Within Tanzanian spice markets, Moshi (2021) and Tsegay et al. (2020) observed that compliance with national labeling standards remains low less than 20% among informal vendors mainly due to cost and limited access to printing facilities. Yet, consumers increasingly rely on visible information to evaluate authenticity and hygiene. Thus, labeling acts as both a marketing and assurance mechanism, especially where direct sensory evaluation is impractical.

2.2.3Packaging Materials and Sales Performance

Material selection conveys quality, freshness and environmental responsibility. Studies in developed economies show that glass and metal packaging are often perceived as premium due to durability and protection (Luo et al., 2020; Byrne, 2016). In developing contexts, cost constraints often lead to reliance on plastic sachets, despite their negative implications for hygiene and sustainability (Tushar et al., 2021; Moyo et al., 2021).

In Tanzania, most small-scale spice sellers use thin plastic bags, which reduce shelf life and diminish perceived product value (Mussa and Mhando, 2021). Conversely, adopting resealable or transparent materials has been shown to enhance freshness perception and boost repeat sales (Sharma and Venkatesh, 2019). These findings underline material choice as a key determinant of both practical and psychological dimensions of consumer satisfaction.

2.3 Research Gap

Despite growing evidence of packaging's influence on consumer behavior, empirical research focusing on small-scale enterprises in Tanzania remains limited. Existing studies have largely examined packaging in large FMCG firms or export-oriented sectors (Rundh, 2016; Kariuki, 2020). Few have analyzed how packaging design, labeling and materials collectively affect sales performance a crucial indicator of market competitiveness for microenterprises (Komba and Ngailo, 2021). Moreover, the behavioral mechanisms underlying these effects, as articulated through the S–O–R model, remain underexplored in low-resource environments.

3. Methodology

3.1 Research Design and Philosophy

This study adopted a descriptive cross-sectional research design, appropriate for assessing relationships among variables at a single point in time. The approach enabled quantitative measurement of how packaging materials, labeling elements, and design features influence sales performance among small-scale spice sellers in Mwanza City. The research was grounded in a positivist philosophy, emphasizing objectivity, measurement, and statistical inference to establish empirical relationships (Saunders et al., 2019).

3.2 Study Area and Population

The study was conducted in Nyamagana District, Mwanza City, Tanzania a key commercial hub with a vibrant spice trade. The target population comprised all registered and active small-scale spice sellers operating in formal and semi-formal markets within the district. The area was selected due to its growing spice industry and competitive environment, where packaging practices vary widely among vendors.

3.3 Sampling Technique and Sample Size

A stratified random sampling technique was employed to ensure fair representation of spice sellers from different market clusters within Nyamagana District. From an estimated population of 80 registered spice traders, 66 respondents were selected as the study sample. The sample size was determined based on Yamane's (1967) formula for small populations and was deemed sufficient to yield statistically valid results for regression analysis.

3.4 Data Collection Methods

Primary data were gathered through structured questionnaires administered face-to-face. The instrument contained both closed-ended and Likert-scale questions designed to measure perceptions of packaging attributes and sales performance indicators. The questionnaire covered four sections: demographic information, packaging materials, labeling elements, design features, and sales performance metrics (e.g., revenue growth, sales volume, repeat purchases).

Data collection was conducted over a two-week period in August 2025 by trained research assistants under the supervision of the researcher. Ethical clearance was obtained from the St. Augustine University of Tanzania, and informed consent was secured from all participants.

3.5 Validity and Reliability

To ensure content validity, the questionnaire was reviewed by academic experts and supervisors specializing in marketing and consumer behavior. Construct validity was assessed through pre-testing with a small group of spice vendors not included in the main study. Internal consistency was verified using Cronbach's alpha, which yielded an overall reliability coefficient of 0.916, exceeding the minimum acceptable threshold of 0.70 (Nunnally, 1978).

3.6 Data Analysis Techniques

Collected data were coded and analyzed using the Statistical Package for Social Sciences (SPSS). Descriptive statistics (means, standard deviations, frequencies) were used to summarize responses, while inferential analysis was applied to test hypotheses derived from the study objectives.

Pearson's correlation analysis examined bivariate relationships among variables, followed by multiple linear regression to estimate the combined and individual effects of

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packaging dimensions on sales performance. Three regression models were estimated as follows:

Model 1: $Y = \beta_0 + \beta_1 X_1 + \varepsilon$ (Packaging Materials)
Model 2: $Y = \beta_0 + \beta_2 X_2 + \varepsilon$ (Labeling Elements)
Model 3: $Y = \beta_0 + \beta_3 X_3 + \varepsilon$ (Packaging Design Features)
where Y represents sales performance, and X_1, X_2, and X_3 represent packaging materials, labeling elements, and design features, respectively.

Regression diagnostics confirmed that assumptions of linearity, normality, and multicollinearity were satisfied, as evidenced by tolerance values above 0.1 and VIF scores below 10 (Table 4.13 in the dissertation).

3.7 Ethical Considerations

The study adhered to university research ethics and confidentiality standards. Respondents were informed about the study's purpose, their right to withdraw, and assurance that data would be used solely for academic and publication purposes. No identifying personal information was disclosed, ensuring full anonymity and voluntary participation.

4. Results and Discussion

4.1 Descriptive Analysis

Table I. Descriptive Statistics of Study Variables (n = 66)

Variable	Mean	Std. Deviation	Minimum	Maximum
Packaging Materials	3.84	0.58	2.40	4.80
Labeling Elements	4.09	0.63	2.60	4.90
Packaging Design Features	4.23	0.51	3.00	4.90
Sales Performance	4.18	0.55	3.00	4.90

Source: Field Data (2025)

Descriptive statistics provided an overview of respondents' demographic characteristics and perceptions regarding packaging attributes. The sample consisted of 66 spice sellers, of whom 59% were female and 41% male, reflecting the gender distribution common among micro-retailers in Mwanza City. Most respondents were between 31–45 years old, with secondary-level education being predominant. Approximately 64% of sellers reported using plastic packaging, 21% used paper-based alternatives, and 15% adopted eco-friendly materials on a limited scale.

Mean scores indicated that respondents rated packaging design features (mean = 4.23, SD = 0.51) as the most influential factor in attracting customers, followed by labeling elements (mean = 4.09, SD = 0.63) and packaging materials (mean = 3.84, SD = 0.58). This suggests that aesthetic appeal and clear information on packaging play a stronger role in purchasing decisions than the physical material alone.

4.2 Correlation Analysis

Correlation results showed significant positive associations among the independent variables and sales performance (r-values between 0.68 and 0.83, $p < 0.01$), implying that packaging attributes move in tandem with improved sales outcomes. The strong intercorrelations justified further multivariate analysis through regression modeling.

Table II. Correlation Matrix of Packaging Variables and Sales Performance

Variables	1	2	3	4
1. Packaging Materials	1			
2. Labeling Elements	0.74**	1		
3. Packaging Design Features	0.68**	0.81**	1	
4. Sales Performance	0.72**	0.83**	0.86**	1

Notes:Correlation is significant at the 0.01 level (2-tailed).

Source: Field Data (2025)

4.3 Regression Analysis

Three regression models were estimated to determine the individual and combined influence of packaging materials, labeling elements, and design features on sales performance.

Table III. Regression Results of Packaging Variables on Sales Performance

Model	Independent Variable	β	R^2	Adjusted R^2	F-Statistic	Sig.
Model 1	Packaging Materials	0.362	0.632	0.625	28.62	0.000*
Model 2	Labeling Elements	0.424	0.712	0.705	45.73	0.000**
Model 3	Packaging Design Features	0.628	0.903	0.899	132.49	0.000***

Notes:*p*< 0.05 (), *p < 0.01* **(), p < 0.001** ().

Source: Field Data (2025)

Model 1: Packaging Materials
$R^2 = 0.632$, $\beta = 0.362$, $p < 0.05$

Packaging materials significantly affected sales performance, accounting for 63.2% of variance. Vendors who used durable or eco-friendly materials reported higher repeat purchase rates and positive consumer feedback compared to those using low-quality plastics.

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Model 2: Labeling Elements
$R^2 = 0.712$, $\beta = 0.424$, $p < 0.01$

Labeling showed a stronger effect on sales performance than materials. Informative and attractive labels—particularly those including brand names, expiry dates, and origin details—enhanced consumer trust and confidence in product quality, consistent with Kim and Kang (2020) and Ochieng (2021).

Model 3: Packaging Design Features
$R^2 = 0.903$, $\beta = 0.628$, $p < 0.001$

Design features had the highest explanatory power, collectively explaining over 90% of the variation in sales performance. Among all design attributes, color emerged as the dominant predictor of customer attraction, followed by shape and size. This aligns with prior evidence that visual appeal stimulates emotional engagement and impulse buying (Garg et al., 2022; Shankar et al., 2020).

4.4 Comparative Discussion

The regression results demonstrate that all packaging dimensions positively influence sales performance, but to varying degrees. The magnitude of the coefficients supports the conclusion that visual design exerts the greatest behavioral influence; while labeling and materials provide functional and credibility reinforcement. These findings are consistent with the S–O–R framework, where design operates as a strong external stimulus eliciting favorable cognitive and emotional reactions, thereby triggering a purchase response (Mehrabian and Russell, 1974; Silayoi and Speece, 2007).

The dominance of packaging design reflects consumers' growing sensitivity to visual presentation in low-involvement products such as spices, where direct product sampling is uncommon. This finding echoes previous work by Kilonzo et al. (2021) and Muzambi and Chibwe (2022), who emphasized that design cues substitute for brand familiarity in informal markets.

The positive role of labeling corroborates Brand Equity Theory (Aaker, 1991), illustrating how information transparency strengthens perceived quality and trust key components of brand equity even among unbranded small-scale products. Labels not only convey authenticity but also position local vendors competitively against imported alternatives.

Finally, packaging materials, though relatively less influential, remain vital for ensuring product preservation, hygiene, and environmental appeal. The significance of this factor suggests increasing consumer awareness of sustainability, mirroring global trends (Moyo et al., 2021; Luo et al., 2020).

Overall, the results confirm that strategic improvements in packaging particularly in design and labeling can substantially enhance sales performance among small-scale enterprises. This supports prior assertions that packaging functions as a "silent salesman" in micro-retailing environments (Ampuero and Vila, 2006).

5. Conclusion and Implications

5.1 Summary of Findings

This study examined the effects of product packaging on sales performance among small-scale spice sellers in Mwanza City, Tanzania. Guided by the Stimulus–Organism–Response (S O R) Model and Brand Equity Theory, it analyzed how three packaging dimensions materials, labeling, and design features influence the sales performance of small enterprises operating in an increasingly competitive market environment.

The regression analysis revealed that all three packaging dimensions have a significant positive influence on sales performance, though with differing magnitudes. Packaging design features emerged as the most powerful predictor ($\beta = 0.628$, $p < 0.001$), followed by labeling elements ($\beta = 0.424$, $p < 0.01$) and packaging materials ($\beta = 0.362$, $p < 0.05$). Collectively, these variables explained 90.3% of the variance in sales performance ($R^2 = 0.903$). The findings confirm that consumers rely heavily on visual and informational cues when evaluating products, particularly in unbranded or informal market contexts such as local spice trading.

5.2 Theoretical Contributions

The study extends the S–O–R model by demonstrating its applicability in informal retail environments, where packaging serves as the primary stimulus influencing consumer cognition and emotion. It also reinforces Brand Equity Theory, showing that even without established brand names, credible labeling and professional packaging can build perceived quality and trust, which in turn drive sales performance.

By empirically quantifying these relationships in a developing-country context, the research enriches the literature on consumer behavior and microenterprise marketing, addressing a gap identified in prior studies (Rundh, 2016; Kariuki, 2020). It contributes localized evidence to the global debate on packaging as a strategic marketing instrument rather than merely a protective function.

5.3 Practical Implications

For entrepreneurs, the findings suggest that investment in packaging design and labeling can yield substantial returns in terms of sales growth and customer loyalty. Small-scale spice sellers should prioritize the use of eye-catching designs, legible labels, and quality materials that align with consumer expectations for hygiene and authenticity. Even modest improvements such as adding expiry dates, brand names, and attractive colors can create a competitive edge in retail markets.

For policymakers and support organizations, the results highlight the need to develop programs that enhance packaging literacy and access to affordable design and printing services for micro and small enterprises. Technical and financial assistance aimed at improving packaging quality could directly contribute to income growth and market formalization among local vendors.

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5.4 Social and Environmental Implications

Enhanced packaging practices can positively impact consumer health, safety, and confidence. Clear labeling reduces risks associated with misused or contaminated products, while better materials ensure product hygiene. Additionally, encouraging the use of eco-friendly packaging materials supports environmental sustainability an emerging concern among Tanzanian consumers. This dual economic and social impact aligns with the national agenda for inclusive and sustainable SME growth.

5.5 Limitations and Future Research Directions

While the study achieved its objectives, it was limited to a single district (Nyamagana) and a small sample size of 66 respondents. Future studies could expand the geographic scope and include longitudinal data to examine how packaging improvements influence sales over time. Further research could also explore consumer perception data directly, integrating psychometric measures of attention, trust, and satisfaction to deepen understanding of packaging's behavioral impact.

5.6 Conclusion

Overall, the study concludes that product packaging is a critical determinant of sales performance among small-scale spice sellers in Tanzania. Visual design, informative labeling, and appropriate materials collectively shape consumer perception and trust, driving purchasing behavior. Strategic packaging innovation, therefore, represents not only a marketing necessity but also a pathway for micro-entrepreneurs to enhance competitiveness, brand recognition, and sustainability in dynamic local markets.

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