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Visual and Structural Packaging Cues and their Effects on Consumer Buying Decisions: A Quantitative Study in Selected Philippine Municipalities

Herzyl Jay B. Claudel, Virnard B. Villasan, Albert A. Alonzo*, Maria Leah E. Suazo, Oliver Daniel J. Vicente

Department of Accountancy and Business Management, Mindanao State University, Naawan, Philippines.
*Email: albert.alonzo@msunaawan.edu.ph

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ABSTRACT

This study investigates the influence of primary packaging elements, design, size, shape, and color, on consumer buying decisions, framed within Kano's Theory of Attractive Quality. Kano's framework differentiates product features into must-be, one-dimensional, and attractive qualities, providing insight into how packaging attributes differentially impact consumer satisfaction and purchase behavior. A quantitative, descriptive-correlational research design was employed to examine these relationships among 300 consumers aged 18 and above in Manticao, Lugait, and Naawan, Misamis Oriental, Philippines. Purposive sampling ensured respondents had relevant experience with packaged products. Data were collected via a structured online questionnaire adapted from validated instruments, using a five-point Likert scale, and underwent expert review and pilot testing to ensure validity and reliability. Descriptive statistics profiled respondents' perceptions, while multiple regression analysis assessed the direction and strength of relationships between packaging elements and buying decisions. Findings indicate that packaging design exerts a positive but non-significant effect, functioning as a must-be quality that prevents dissatisfaction without directly driving purchases. Packaging size and shape significantly influence buying decisions, aligning with one-dimensional qualities where functional performance directly enhances satisfaction. Packaging color emerged as the strongest predictor, representing an attractive quality that delights consumers and strongly motivates purchase behavior. These results highlight that strategic management of packaging attributes can enhance consumer satisfaction, brand appeal, and purchase likelihood. The study underscores the dual functional and sensory role of packaging in marketing, with practical implications for product development and brand strategy. By integrating Kano's theoretical perspective with empirical evidence from a Philippine context, this research contributes to the understanding of how primary packaging elements shape consumer behavior in low-involvement products.

Keywords: Primary Packaging, Consumer Buying Decisions, Kano's Theory, Design, Size, Shape, Color, Philippines
JEL Classifications: M31, M37, D12, L15

1. INTRODUCTION

Primary packaging plays a strategic role in shaping consumer buying decisions, particularly in increasingly competitive and self-service retail environments. As retail formats have shifted toward supermarkets and convenience stores where consumers independently evaluate products on shelves, packaging has evolved from a mere protective covering into a critical marketing communication tool. Beyond safeguarding the product, primary packaging conveys essential information about the brand and manufacturer, differentiates products from competitors, and functions as a silent salesperson at the point of purchase. Prior research underscores that packaging can enhance brand image, stimulate impulse buying, increase market share, and even reduce reliance on traditional promotional efforts (Rundh, 2005). In this context, packaging is no longer peripheral to marketing strategy; rather, it constitutes a core determinant of marketplace success.

A substantial body of literature has examined the relationship between packaging attributes and consumer behavior. Packaging frequently represents the first tangible point of contact between the consumer and the product, shaping initial impressions and influencing perceived quality and value. Structural and visual elements—such as color, material, typography, imagery, shape, and functionality—can either attract attention or discourage purchase consideration (Silayoi and Speece, 2007). As a communicative medium, packaging transmits symbolic and functional cues that help consumers evaluate products quickly, particularly under conditions of limited time and cognitive effort. Understanding which specific elements exert the strongest influence on buying decisions is therefore essential for both theoretical advancement and managerial application.

Among visual elements, color has received considerable scholarly attention due to its capacity to evoke both affective and cognitive responses. Consumers often rely on color cues to identify familiar brands, especially during routine purchases, scanning shelves for recognizable packaging before verifying the brand name (Van Hurley, 2007). Over time, consumers develop learned color associations within product categories, leading to preferences for certain hues that signal expected attributes such as freshness, sweetness, or durability (Grossman and Wisenblit, 1999). Moreover, color may simultaneously stimulate arousal and evaluative judgments, reflecting its dual psychological function in shaping perception and purchase behavior (Crowley, 1993). These findings highlight the persuasive potential of color as a strategic packaging element.

Structural characteristics, particularly package shape and size, also significantly affect consumer evaluation and post-purchase satisfaction. Package shape influences perceptions of usability, convenience, and product quantity, while also contributing to shelf visibility and brand distinctiveness. Functional considerations become especially salient after purchase, as consumers assess ease of handling, storage, and disposal. Furthermore, household composition has been shown to influence packaging size preferences, with smaller households tending to favor smaller package sizes to minimize waste (Rundh, 2005). These insights suggest that effective packaging design must integrate aesthetic appeal with practical utility, adapting to evolving demographic and lifestyle patterns.

Despite extensive research on packaging attributes, an important empirical gap remains. Many studies examine individual packaging elements, such as color, shape, size, or graphic design, in isolation, often emphasizing their general influence on purchase intention. However, limited research systematically compares these elements within a unified analytical framework to determine which exerts the most substantial influence on consumer buying decisions. Consequently, marketers lack clear, evidence-based guidance regarding which primary packaging features should be prioritized when resources are constrained. This fragmented understanding restricts both theoretical clarity and managerial decision-making.

Addressing this gap, the present study investigates the relative influence of key primary packaging elements on consumer buying decisions within selected municipalities in Misamis Oriental, namely Manticao, Lugait, and Naawan. By examining multiple packaging attributes concurrently and identifying the element with the greatest predictive strength, this research advances existing literature from descriptive assessment toward comparative evaluation. In doing so, it contributes novel empirical evidence that informs strategic packaging design, strengthens branding initiatives, and enhances marketing effectiveness in competitive retail environments.

2. LITERATURE REVIEW

2.1. Kano's Theory of Attractive Quality

This study is anchored in the Theory of Attractive Quality developed by Noriaki Kano in 1984 (Löfgren and Witell 2005), which explains how different product attributes influence customer satisfaction. Kano classifies product features into five categories: must-be, one-dimensional, attractive, indifferent, and reverse qualities. This framework suggests that not all product features contribute equally to satisfaction; rather, their impact varies depending on how consumers perceive them.

In the context of primary packaging, must-be qualities include essential functions such as product protection, safety seals, and clear labeling. These features prevent dissatisfaction but do not necessarily increase satisfaction when present. One-dimensional qualities, such as ease of opening, ergonomic handling, and functional convenience, have a direct and proportional relationship with satisfaction—the better they perform, the more satisfied consumers become. Most strategically important are attractive qualities, which refer to unexpected or innovative packaging features, such as distinctive designs, sustainable materials, or personalized elements, that delight consumers and enhance brand loyalty. These features can significantly influence buying decisions by exceeding expectations and creating positive emotional responses.

Applying Kano's theory highlights that packaging elements such as design, size, shape, and color may function at different quality levels. While basic packaging prevents dissatisfaction, enhanced and innovative features can create satisfaction and competitive advantage. Thus, packaging becomes a strategic tool for influencing consumer buying decisions and improving market performance.

2.2. Primary Packaging and Consumer Buying Decisions

The Primary packaging refers to the layer of packaging that comes into direct contact with the product (Hellström and Saghir, 2007). Traditionally, its primary function has been protection, preserving product integrity, preventing contamination, and ensuring safety throughout the product life cycle (Wikström et al., 2014). However, contemporary scholarship recognizes that primary packaging extends beyond protection to perform communicative and persuasive roles. It conveys brand identity (Rundh, 2005), facilitates product evaluation (Becker et al., 2011), and can stimulate purchase behavior (Murray and Delahunty, 2000).

Across industries such as food, pharmaceuticals, and cosmetics, primary packaging has evolved into an interactive interface

between the product and the consumer. In food systems, technological advancements have transformed packaging into active systems that enhance shelf life and maintain quality (Yam et al., 2005). In pharmaceutical contexts, primary packaging ensures safety, prevents degradation, and preserves efficacy throughout distribution and consumption. Meanwhile, in cosmetics, visual and haptic elements, including color, texture, and shape, serve as critical differentiators that directly influence buying behavior (Nancarrow et al., 2020). These developments underscore that primary packaging operates not only as protection but also as a strategic marketing instrument that shapes consumer perception and choice.

Given its expanded strategic function, prior literature has identified several key elements of primary packaging—design, size, shape, and color—that may influence consumer buying decisions. Building on cue utilization theory and point-of-sale decision-making perspectives, these elements serve as extrinsic cues that reduce uncertainty and guide purchase judgments, particularly in low-involvement buying situations (Ampuero and Vila, 2006). The following hypotheses are therefore developed.

2.3. The Influence of Packaging Design to Consumer Buying Decisions

Packaging design encompasses both graphic components (e.g., imagery, typography, layout) and structural characteristics (e.g., materials and ergonomics) (Underwood, 2003; Kotler and Keller, 2011). Design integrates aesthetic appeal with functionality, thereby influencing both emotional responses and rational evaluations (Bloch, 1995). Empirical research suggests that design excellence is positively associated with firm performance and consumer preference (Hertenstein et al., 2005; Walsh et al., 1992).

At the point of purchase, where a substantial proportion of buying decisions occur, packaging design represents the final communicative opportunity for brands to influence consumers. Its visual and structural elements attract attention, convey brand personality, and signal product quality (Frias et al., 2025). When effectively aligned with consumer expectations, packaging design reduces cognitive effort and enhances purchase likelihood.

H_1: Packaging design significantly influences consumer buying decisions.

2.4. The Influence of Packaging size to Consumer Buying Decisions

Packaging size serves as a salient visual cue that consumers use to assess quantity, value, and convenience. It must align with consumer needs and usage patterns to ensure satisfaction (Makanjuola and Enujiugha, 2015). Research indicates that consumers rely on size as a heuristic when estimating product volume and evaluating usability (Silayoi and Speece, 2007). Additionally, packaging size can influence perceived quality, with some studies suggesting that smaller packages may be associated with premium positioning (Yan et al., 2014).

Size preferences may also vary according to market segment characteristics and household composition, requiring firms to offer flexible packaging options (Rundh, 2005). Because size affects perceived value, portability, storage convenience, and consumption expectations, it plays a meaningful role in shaping purchase decisions.

H_2: Packaging size significantly influences consumer buying decisions.

2.5. The Influence of Packaging shape to Consumer Buying Decisions

Packaging shape is a prominent structural attribute that contributes to brand differentiation and consumer perception (Kapferer, 2012). Research demonstrates that shape can influence perceptions of product attributes such as volume, magnitude, taste, and healthfulness (Folkes and Matta, 2004; Ares and Deliza, 2010; van Ooijen et al., 2017). Consumers may infer greater quantity from taller packages due to cognitive associations between height and volume (Kotler and Keller, 2011).

Beyond functional considerations, shape communicates symbolic meaning and brand personality (Orth and Malkewitz, 2008; Peterson, 2014). Distinctive shapes can enhance shelf visibility, evoke emotional responses, and differentiate products in competitive retail environments. Since consumers often make rapid judgments based on visual impressions, packaging shape can significantly influence purchase intention and final choice.

H_3: Packaging shape significantly influences consumer buying decisions.

2.6. The Influence of Packaging Color to Consumer Buying Decisions

Color is a powerful visual stimulus that evokes emotional, cognitive, and cultural associations. In packaging contexts, color communicates product attributes, quality cues, and brand positioning (Akbari, 2014). Consumers develop learned color preferences within product categories, often associating specific hues with particular meanings or expectations (Grossman and Wisenblit, 1999).

Marketing literature consistently demonstrates that packaging colors can evoke feelings and behavioral responses, shaping brand impressions and purchase decisions (Munyaradzi Mutsikiwa, 2013). Color enhances shelf visibility, attracts attention, and facilitates product identification in time-constrained retail settings. Furthermore, colors may signal intangible brand attributes and influence perceptions of sophistication and quality (Asadollahi and Giveen, 2015). Given its capacity to generate immediate affective responses and guide product recognition, color constitutes a critical determinant of buying behavior.

H_4: Packaging color significantly influences consumer buying decisions.

3. RESEARCH METHODOLOGY

3.1. Data Collection

This study adopted a quantitative, descriptive-correlational research design to examine the influence of primary packaging elements—design, size, shape, and color—on consumer buying decisions. Descriptive statistics were used to assess respondent profiles and perceptions, while multiple regression analysis tested

the direction and magnitude of relationships between packaging elements and purchase decisions. This non-experimental approach enabled objective hypothesis testing and generalizable findings.

The research was conducted in Manticao, Lugait, and Naawan, Misamis Oriental, Philippines, targeting consumers aged 18 years and above with regular exposure to packaged products. Using purposive sampling, 300 respondents were selected to ensure relevant purchasing experience. Data was collected through a structured questionnaire administered online via Google Forms. The instrument, adapted from established studies (Alhamdi, 2020 and Ebrahim, 2010), measured variables using a five-point Likert scale and underwent expert validation and pilot testing to ensure content validity and reliability.

Data analysis included frequencies, percentages, means, standard deviations, and multiple regression techniques to determine the relative influence of each packaging element on buying decisions. Ethical standards were strictly observed, with voluntary participation, informed consent, confidentiality safeguards, and compliance with the Data Privacy Act of 2012 (Republic Act 10173).

4. DATA ANALYSIS

4.1. Demographic Profile

Table 1 summarizes the demographic profile of the 300 respondents in terms of age, gender, and place of residence. The age distribution indicates that the majority of participants (54.67%) were between 18 and 22 years old, suggesting that the sample was largely composed of young adults. This concentration implies that many respondents may be students or individuals in the early stages of their careers, segments that are typically active consumers of fast-moving and packaged goods. Respondents aged 23-27 years comprised 22.33% of the sample, while those aged 28-32 years and 33-37 years accounted for 14.33% and 8.67%, respectively. The progressive decline in representation across older age groups reflects a youth-dominated sample, which may influence purchasing perspectives, particularly in relation to packaging aesthetics and contemporary design trends.

Table 1: Respondent's demographic profile

Demographic profile	Number of respondents	Percentage
Age		
18-22	164	54.67
23-27	67	22.33
28-32	43	14.33
33-37	26	8.67
Total	300	100
Gender		
Male	112	37.33
Female	188	62.67
Total	300	100
Place of residence		
Manticao	100	33.33
Lugait	100	33.33
Naawan	100	33.33
Total	300	100

In terms of gender, females constituted a greater proportion of the respondents (62.67%) compared to males (37.33%). This distribution suggests a higher participation rate among women, which may reflect either the demographic characteristics of the study areas or greater female engagement in retail purchasing activities. Given prior evidence that gender can influence product evaluation and packaging sensitivity, this composition provides meaningful context for interpreting the study's findings.

Regarding geographic distribution, respondents were evenly allocated across the three municipalities—Manticao, Lugait, and Naawan—with each contributing 33.33% of the total sample. This balanced representation minimizes potential location bias and strengthens the comparability of responses across areas. Consequently, the demographic structure of the sample supports the reliability of cross-municipal analysis and enhances the contextual generalizability of the results within the selected localities.

4.2. Measurements

Table 2 presents the Cronbach's alpha results for each construct. The analysis revealed an overall Cronbach's alpha of 0.789, indicating a high level of internal consistency among the survey items. This value exceeds the commonly accepted threshold for reliability ($\alpha \geq 0.70$), confirming that the instrument is both consistent and dependable for measuring the intended constructs. These results suggest that the questionnaire items are well-aligned and effectively capture the underlying dimensions of consumer perceptions and behaviors related to primary packaging elements, ensuring the credibility of the data collected for subsequent analyses.

5. RESULTS

The results in Table 3 indicate that consumers demonstrated a generally high level of agreement regarding packaging design, with an overall mean score of 3.83 (SD = 0.62). This score falls within the "Agree" range, suggesting that respondents agree of how packaging design functions in marketing and consumer decision-making. These findings highlight that consumers recognize packaging design as a critical tool for communicating product details, reinforcing product identity, and enhancing aesthetic appeal.

Notably, the item phrased negatively, "the design of the packaging is not important in attracting attention", received a lower

Table 2: Reliability

Constructs	Cronbach's alpha	No. of items	Remarks
Design	0.744	8	Acceptable
Color	0.733	5	Acceptable
Size	0.827	7	Good
Shape	0.791	5	Acceptable
Consumer buying decisions	0.859	8	Good
Overall	0.789	20	Acceptable

Below 0.50=Unacceptable, 0.50-0.59=Poor, 0.60-069=Questionable, 0.70-0.79=Acceptable, 0.80-0.89=Good, 0.90 and above=Excellent

Table 3: Descriptive analysis on the level of consumers' agreement on packaging design

Items	Mean	SD	Interpretation
DES1. The packaging design gives you enough information to identify the components of the product.	3.97	0.89	Agree
DES2. The technical aspects of the packaging design attract your attention to the product.	3.82	0.96	Agree
DES3. The design of the packaging is not important in attracting your attention to the product.	3.15	1.29	Agree to some extent
DES4. The packaging design attracts your attention to varying degrees depending on the nature of the product.	3.92	0.87	Agree
DES5. The graphic on the cover draws your attention to the item.	3.92	0.92	Agree
DES6. The design of the package or packaging is compatible with the nature of the item you are buying.	3.90	0.93	Agree
DES7. Excellence in the design of the case of packaging attracting your attention to the product.	4.03	0.88	Agree
DES8. The packaging design takes into account the customs and traditions of society.	3.90	0.86	Agree
Total measure	3.83	0.62	Agree

Table 4: Descriptive analysis on the level of consumers' agreement on packaging size

Items	Mean	SD	Interpretation
SZ1. It attracts your attention to the size of the package that has saved you volume savings when consumed.	4.02	0.82	Agree
SZ2. The item is purchased based on the quantity of its contents listed in the package.	3.93	0.77	Agree
SZ3. Attracts your attention to the size of the package for the item that suits your purchasing power.	4.04	0.74	Agree
SZ4. Determines the nature of the product in the size of the package that attracted your attention to the commodity.	3.89	0.83	Agree
SZ5. Offering the item in different sizes and packages attracts your attention towards it.	4.02	0.82	Agree
SZ6. The free increase in the size of the packaging attracts your attention to the item.	3.96	0.86	Agree
SZ7. The size of the package or the packaging of the item draws you more towards the item.	3.93	0.90	Agree
Total measure	3.97	0.61	Agree

mean score (M = 3.15, SD = 1.29), corresponding to "Slightly Knowledgeable." This suggests that while consumers understand the general importance of packaging design, their recognition of its role in capturing attention may be less pronounced when assessed through a negative statement. Overall, these results imply that consumers perceive packaging as more than just a protective layer; they view it as a communicative and persuasive element that influences purchase decisions.

The findings align with contemporary research emphasizing the role of packaging design in shaping consumer behavior. For example, Alam et al. (2023) demonstrated that visual elements, such as color, typography, and layout, significantly enhance brand experience and influence purchase intentions. Ahmed et al. (2014) similarly highlighted that packaging components, including color, material, and wrapper design, are critical determinants of consumer choice. Shukla (2022) further underscored that creative and aesthetically relevant packaging impacts consumer perception and behavior, supporting the high mean scores observed for technical and aesthetic design aspects in this study. Moreover, Sutrisno et al. (2023) argued that consumers often interpret packaging as an expression of product identity and professionalism, consistent with the recognition of design compatibility with the product's nature. Additional studies across various contexts (Akbar et al., 2023; Barnuevo and Roma, 2023; Liu et al., 2025) corroborate these findings, emphasizing that effective packaging communicates product information, strengthens brand awareness, and positively affects purchase decisions.

The findings in Table 4 indicate a high level of consumer agreement regarding packaging size, as reflected by an overall mean score of 3.97 (SD = 0.61), which falls within the "Agree" range. This suggests that respondents generally recognize the importance of packaging size in capturing attention and influencing purchasing decisions. The highest mean was recorded for the item stating that "the size of the package attracts your attention when it suits your purchasing power" (M = 4.04, SD = 0.74), indicating that consumers are particularly sensitive to the relationship between package size and perceived affordability. Similarly, items related to volume savings (M = 4.02, SD = 0.82) and the appeal of multiple size options (M = 4.02, SD = 0.82) further highlight consumers' awareness of the practical and economic benefits associated with packaging dimensions.

These results are consistent with prior research on the influence of packaging size in consumer decision-making. For instance, Hieke et al. (2015) found that larger packages enhance perceptions of portion size and consumption quantity, increasing perceived value. Yan et al. (2014) similarly demonstrated that packaging size affects perceived quality through unit-price evaluation, linking size to affordability and value. Studies in processed-food and FMCG markets further highlight that consumers actively use packaging size and volume information to manage budgets, storage, and consumption (Habermehl et al., 2024). Systematic reviews on serving-size perception reinforce that consumers rely on packaging dimensions to interpret product quantity and value. Additionally, marketing strategies that offer multiple package sizes influence choice and demand, while visual cues guide attention and value judgments (Yan et al., 2014).

Table 5 presents consumers' level of agreement regarding the shape of product packaging. The overall mean score of 3.92 (SD = 0.63) indicates that respondents generally agree that packaging shape influences their perceptions and purchasing decisions. This finding suggests that consumers recognize the importance of packaging shape in attracting attention, conveying product information, and shaping buying behavior.

Among the indicators, the highest mean score was for the item "Draws your attention to the product; the cover is made of biodegradable materials" (M = 4.05, SD = 0.79), highlighting that consumers place strong emphasis on environmentally friendly packaging. This finding aligns with Orzan et al. (2018), who reported that consumers increasingly prefer recyclable or biodegradable packaging as it signals environmental awareness and social responsibility. Similarly, McKinsey and Company (2025) emphasized that sustainability cues, such as eco-labels or biodegradable designs, positively influence purchase intentions.

Meanwhile, "Distinctive packaging shapes attract attention more than competitors' products" (M = 3.82, SD = 0.88) also fall under the "Knowledgeable" category. These slightly lower scores suggest that while visual distinctiveness remains relevant, modern consumers increasingly prioritize sustainability and functionality over purely aesthetic considerations. These slightly lower scores suggest that while visual distinctiveness remains relevant, modern consumers increasingly prioritize sustainability and functionality over purely aesthetic considerations. This is supported by Folkes and Matta (2004), who noted that distinctive shapes influence attention and perceived quantity but often play a secondary role to practical or ethical factors.

Table 6 presents consumers' level of agreement regarding product packaging color. The overall mean score of 3.95 (SD = 0.64) indicates that respondents generally agree that packaging color influences their purchasing decisions. This finding suggests that consumers perceive color as a critical element in attracting attention, conveying product meaning, and shaping perceptions of quality and value. Among the indicators, the highest mean score was observed for the item "The fixed colors on the packaging that suit the nature of the commodity attract attention" (M = 4.07, SD = 0.74). This finding suggests that consumers appreciate packaging colors that are congruent with product characteristics—for example, green for organic products, blue for freshness, or red for excitement—as such colors facilitate quick recognition and product association. This aligns with Spence (2018), who emphasized that color is one of the most influential visual elements affecting consumers' expectations regarding taste, quality, and functionality. Similarly, Nagy (2024) reported that colors consistent with product attributes enhance consumer trust and willingness to purchase, particularly for organic or health-related products.

Lower but still "knowledgeable" mean scores were found for item "Changing colors of packages motivates purchase" (M = 3.91, SD = 0.89). These findings suggest that consumers understand how color affects perceived value and pricing, yet visual appeal alone does not guarantee purchase; product quality and relevance remain critical. These findings suggest that consumers understand how color affects perceived value and pricing, yet visual appeal alone does not guarantee purchase; product quality and relevance remain critical. This observation aligns with Steiner (2023), who noted that while color strongly attracts attention, its influence on purchasing decisions is moderated by consumers' evaluation of overall product appeal and trustworthiness.

Table 7 presents respondents' buying behavior in relation to packaging attributes, with an overall mean of 4.04 (SD = 0.61), indicating a "High Preference." This suggests that packaging functions as a key driver of purchase decisions and serves as a persuasive communication tool beyond its protective role. The highest-rated item, product identification (M = 4.30, SD = 0.77), underscores the importance of packaging in brand recognition and differentiation, consistent with Underwood (2003).

Other highly rated items—preference for better packaging (M = 4.17, SD = 0.89), strong packaging (M = 4.14, SD = 0.89), and ease of storage (M = 4.15, SD = 0.84)—indicate that perceived quality and functional convenience significantly influence buying behavior, supporting prior findings (Silayoi & Speece, 2004;

Table 5: Descriptive analysis on the level of consumers' agreement on packaging shape

Items	Mean	SD	Interpretation
SHAPE1. The outer shape of the casing or packaging draws you more towards the product.	3.83	0.89	Agree
SHAPE2. Distinguish the shape of the packaging or packaging of the commodity more than competing goods attracts your attention towards them.	3.82	0.88	Agree
SHAPE3. The shape or package that fits the nature of the commodity draws your attention.	3.91	0.81	Agree
SHAPE4. Draws your attention to the product the cover made of biodegradable materials in the environment quickly.	4.05	0.79	Agree
SHAPE5. The shape of the packaging, taking into account the possibility that you can benefit from the packaging in other uses.	4.02	0.79	Agree
Total measure	3.92	0.63	Agree

Table 6: Descriptive analysis on the level of consumers' agreement on packaging color

Items	Mean	SD	Interpretation
CLR1. Attracts your attention to the commodity the fixed colors on the packaging that suit the nature of the commodity that you purchase.	4.07	0.74	Agree
CLR2. The color of the package or the cover of the commodity attracts your attention towards it.	4.02	0.79	Agree
CLR3. You have full readiness to buy commodities with the attractive colors even if they cost little higher than the traditional color goods.	3.81	0.94	Agree
CLR4. You think that the focus is done while offering the commodity on the color of the package to attract your attention.	3.91	0.89	Agree
CLR5. Changing colors of the packages is something essential and motivates you to buy.	3.94	0.90	Agree
Total Measure	3.95	0.64	Agree

Table 7: Level of consumer buying behavior

Items	Mean	SD	Interpretation
CBD1. I buy products with better Packaging	4.17	0.89	High preference
CBD2. Strong packaging makes me want to buy it.	4.14	0.89	High preference
CBD3. Simple Packaging makes me want to buy it.	3.86	0.95	High preference
CBD4. Light weight packaging makes me want to buy it.	3.90	0.94	High preference
CBD5. I buy products that are always packaged the same way.	3.95	0.91	High preference
CBD6. Products with transparent packaging are better.	3.82	1.05	High preference
CBD7. I buy products with packages that are easy to store.	4.15	0.84	High preference
CBD8. Package helps me to identify the product from others.	4.30	0.77	Very high preference
Total measure	4.04	.61	High preference

Table 8: Multiple regression analysis of packaging design, size, shape, color and purchase intention and consumers' buying decisions

Predictor	B	SE β	T	P-value
Constant	1.0554	0.2015	5.24	<0.001
Packaging design	0.0702	0.0581	1.21	0.227
Packaging size	0.2272	0.0621	3.66	<0.001
Packaging shape	0.1760	0.0594	2.96	0.003
Packaging color	0.2831	0.0582	4.86	<0.001

R=0.661, R^2=0.437 (P<0.05), P=0.000

Shukla, 2022). Meanwhile, packaging consistency (M = 3.95, SD = 0.91), simplicity (M = 3.86, SD = 0.95), and lightweight design (M = 3.90, SD = 0.94) show moderate importance, reflecting the balance between familiarity and usability. Transparent packaging (M = 3.82, SD = 1.05), although lowest, remains positively rated, suggesting conditional consumer preference depending on product visibility and appeal.

Table 8 presents the results of the multiple regression analysis examining the influence of primary packaging elements—design, size, shape, and color—on consumers' buying behavior. The overall model was statistically significant, with an R^2 of 0.437, indicating that approximately 43.7% of the variance in consumer buying behavior can be explained by the combined effects of the four packaging elements. The model's F-test was significant ($P < 0.001$), confirming the overall predictive capability of the selected independent variables.

Among the predictors, packaging color emerged as the strongest determinant of consumer buying behavior (B = 0.2831, β = 0.283, t = 4.86, $P < 0.001$), highlighting that consumers are highly responsive to the visual cues provided by color in packaging. Packaging size also demonstrated a significant positive effect on buying behavior (B = 0.2272, β = 0.227, t = 3.66, $P < 0.001$), suggesting that consumers consider the practicality, affordability, and perceived value associated with package dimensions when making purchase decisions. Packaging shape was similarly a significant predictor (B = 0.1760, β = 0.176, t = 2.96, P = 0.003), indicating that the form and functionality of packaging affect consumer perceptions and behavioral intentions Interestingly, packaging design, while positively related to buying behavior (B = 0.0702, β = 0.070), did not reach statistical significance (t = 1.21, P = 0.227). This suggests that while respondents are knowledgeable about design aspects, such as aesthetics or technical features, design alone may not directly translate into immediate purchase behavior when considered alongside other packaging elements.

The regression equation:

Consumer buying decisions = 1.0554 + 0.2272 (PS) + 0.1760 (PSh) + 0.2831 (PC)

Illustrates that increases in packaging color, size, and shape scores lead to corresponding increases in consumer buying decisions, holding other variables constant. In essence, the model may reflect a consumer preference for more tangible or functional cues, such as size, shape, and color, over purely aesthetic considerations at the point of sale.

6. DISCUSSION

H_1: Packaging design is positively related but does not significantly influence consumer buying decisions in this context.

The results indicate that packaging design has a positive but non-significant effect on consumer buying behavior (B = 0.0702, β = 0.070, t = 1.21, P = 0.227). This suggests that although consumers recognize the aesthetic and functional aspects of packaging design, such as visual appeal, ergonomic features, or brand communication, these elements alone may not strongly drive purchase decisions when compared to other factors like size, shape, and color.

Previous studies indicate that packaging design communicates product information, enhances brand identity, and contributes to perceived quality (Bloch, 1995; Chowdhury et al., 2023; Ahmed et al., 2014). While these factors influence consumer awareness and knowledge, our findings suggest that design may function more as an informational or supportive cue rather than a primary determinant of immediate buying behavior, aligning with the observation that modern consumers often prioritize functional and visual cues that directly relate to perceived value and usability (Shukla, 2022; Sutrisno et al., 2023).

H_2: Packaging size significantly affects consumer buying decisions, confirming its role as a practical and economic cue in influencing purchase behavior.

Packaging size was found to have a significant positive effect on consumer buying behavior (B = 0.2272, β = 0.227, t = 3.66, $P < 0.001$), confirming H_2. Consumers are particularly sensitive to the practicality, affordability, and perceived value associated with different package sizes. The highest mean scores in the descriptive analysis supported that consumers associate packaging size with volume savings, multiple purchase options, and suitability for consumption needs.

This finding is consistent with prior research demonstrating that packaging size serves as a cue for portion, value, and convenience, influencing both perception of quality and purchase intentions (Yan et al., 2014; Hieke et al., 2015; Yan et al., 2014). Moreover, offering multiple package sizes can cater to diverse consumer needs, including budget constraints and consumption frequency, which aligns with FMCG marketing practices that leverage size as a key determinant of purchase behavior (Habermehl et al., 2024).

H_3: Packaging shape significantly influences consumer buying behavior, especially when it aligns with usability and sustainability considerations.

Packaging shape was also a significant predictor of consumer buying behavior ($B = 0.1760$, $\beta = 0.176$, $t = 2.96$, $P = 0.003$). Consumers respond positively to packaging shapes that are visually distinct, functional, and congruent with the product's nature. The descriptive results further highlight that shapes offering practical usability or sustainable features (e.g., reusable or biodegradable packaging) are particularly valued by consumers.

These results align with prior studies showing that packaging shape affects product evaluation, attention, and perceived quality (Kapferer, 2012; Folkes and Matta, 2004; Orzan et al., 2018). Functional and environmentally conscious packaging shapes not only enhance purchase intention but also contribute to perceived brand responsibility and consumer satisfaction (Mastria et al., 2024; Timmerman, 2019). This suggests that shape is both an aesthetic and functional cue that significantly drives buying behavior.

H_4: Packaging color significantly influences consumer buying behavior, supporting its role as a critical sensory and marketing cue.

Packaging color was the strongest predictor among the four elements ($B = 0.2831$, $\beta = 0.283$, $t = 4.86$, $P < 0.001$). This indicates that consumers place high importance on color as a visual cue that communicates product attributes, attracts attention, and influences perceptions of quality, freshness, and value. Descriptive analysis further supported this, showing that colors aligned with product identity and characteristics (e.g., green for organic, blue for freshness) were highly appreciated by respondents.

This finding is consistent with extensive literature highlighting color as a primary driver of consumer perception and purchase intention (Spence, 2018; Su et al., 2024; Nagy, 2024; Mohebbi, 2014). Colors not only enhance product visibility and recognition but also influence emotional responses and willingness to pay, making them a powerful tool in packaging strategy and marketing communication.

When interpreted through the lens of Kano's Theory of Attractive Quality, these results suggest that the four primary packaging elements operate at different quality levels in influencing consumer behavior. Packaging design appears to act as a must-be quality, preventing dissatisfaction but not significantly increasing satisfaction on its own. Packaging size and shape function as one-dimensional qualities, where better performance—practicality, usability, or sustainability—directly enhances consumer satisfaction and purchase likelihood. Packaging color, on the other hand, operates as an attractive quality, providing unexpected visual appeal that delights consumers and strongly drives buying behavior. This alignment underscores that while some packaging features fulfill basic functional expectations, others create added value by exceeding consumer expectations, illustrating how strategic management of these attributes can optimize satisfaction and purchase decisions.

Overall, the findings underscore the strategic importance of packaging—particularly the visual elements of color and the physical aspects of size and shape—in shaping consumer perceptions, product appeal, and ultimately, the consumer buying decision. This result is supported by previous studies emphasizing the impact of primary packaging on consumer decision-making. Silayoi and Speece (2007) explained that visual packaging elements such as color, shape, and graphics act as key stimuli influencing consumer perceptions and choices, especially for low- involvement products. Similarly, Ampuero and Vila (2006) noted that packaging color and design serve as indicators of product quality and brand identity, guiding consumers' evaluations at the point of sale. Rundh (2005) described packaging as a "silent salesman" that communicates brand image and product value, while Amarga et al. (2026) highlighted that primary packaging not only protects the product but also attracts attention and encourages impulse purchases. Collectively, these findings affirm that packaging design is not merely functional but a crucial marketing instrument that shapes consumer preferences, enhances perceived value, and drives buying decisions.

7. CONCLUSION AND PRACTICAL IMPLICATIONS

The findings of this study have several practical implications for marketers, product developers, and brand managers. Packaging color, size, and shape were identified as significant drivers of consumer buying behavior, while design, although positively related, did not exert a significant direct effect. Color emerged as the strongest predictor, highlighting its role as a sensory cue that communicates product attributes, attracts attention, and evokes emotional responses, suggesting that brands should strategically select color schemes consistent with product identity and consumer expectations. Packaging size significantly influenced purchases, indicating that offering multiple size options can address varying consumption needs, budget constraints, and occasions, thereby enhancing perceived value and convenience. Similarly, packaging shape was found to affect buying behavior by combining visual distinctiveness with functional usability and incorporating sustainable or ergonomic features can further increase consumer appeal and reinforce perceptions of brand responsibility. Although packaging design did not significantly drive immediate purchase decisions, it remains important for conveying brand identity and product information and should be leveraged as a supportive element that complements functional and sensory packaging attributes.

Overall, marketers and product developers are encouraged to prioritize tangible and perceptible features such as color, size,

and shape while maintaining cohesive design elements, and to integrate usability and sustainability considerations to strengthen consumer engagement, satisfaction, and purchase intention. For future research, studies could explore the interaction effects between design and sensory packaging elements, examine packaging preferences across different product categories or cultural contexts, and investigate emerging trends such as eco-friendly or smart packaging to further understand their influence on consumer behavior.

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