

## Modified Packaging Design and Customer Preference in a Volatile Business Environment in South-West Nigeria

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### ABSTRACT:

The study examined the effect of a modified packaging design on customer preference in a volatile business environment in South-West Nigeria. The specific objectives were to examine the effect of color, image, and shape on customer preference in a volatile business environment in South-West Nigeria. This study utilized a survey research design. Data was gathered from primary sources. The study population comprised customers of selected bread products across two states in the South-West of Nigeria: Osun State and Ekiti State. The convenience sampling technique was used to select 350 respondents from the area to facilitate data collection, since the selected respondents were not residing in the same place. The multiple linear regression statistical tool was used to test the hypothesis through the Statistical Package for Social Sciences (SPSS) version 20. The findings showed that color, image, and shape have a significant effect on customer preference in a volatile business environment in South-West Nigeria. The study therefore recommended that: Manufacturers of bread products should package their products with colors that attract customers' preferences; images on the bread packaging should be able to convince customers to prefer their product compared to other competitors' products; and the shape of the bread product must be unique to differentiate their product from others to attract customer preference.

**KEYWORDS:** *Packaging design, Customer preference, Volatile, Business environment*

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## INTRODUCTION

Manufacturers of consumer goods strive to attract customers who will have a positive perception of their products. A common marketing strategy is to design the package to convince both existing and potential customers to prefer their product over competitors'. In a competitive business environment, every manufacturer strives to succeed in their business operation to remain relevant. Bread manufacturers are not left out of this struggle. The importance of package design is crucial to a product's success, as it helps ensure it gains consumer notice, communicates information, provides sensory stimulation, and leaves a lasting impression (Gary et al., 2012). The consumer's preference is influenced by packaging quality, colour, wrapper, and other packaging characteristics. Packaging is a whole package that becomes the ultimate selling proposition, which stimulates impulse buying behaviour. Packaging increases sales and market share while reducing marketing and promotional costs. A unique package design is one way a new product can stand out from competitors' familiar packages, especially in a volatile business environment. Package form can also create an initial impression, which generates inferences regarding product attributes (Gary et al., 2012). Consumers make subjective judgments of products based on their appearance and packaging features. Package design encompasses several considerations, including protecting the contents and articulating the brand promise. Package design is a broad term encompassing engineered functional attributes (e.g., ergonomics, durability, recyclability) and visual attributes (Siyanbola et al., 2020). Gestalt psychologists (Siyanbola et al., 2020) defined "package design" as the selection and integration of elements into a holistic

design to achieve a specific sensory effect. Product package design is an indispensable influential factor that promotes patronage (Silayoi & Speece, 2004; Wells et al., 2007). According to Rundh (2005), packages attract consumers' attention to a particular brand, enhance its image, and influence consumers' perceptions about a product. Product's appearance elicits feelings and determines brand perception. Consumers favour aesthetics reflected in package design over product functionality because it is widely assumed that what is beautiful is valuable and worth buying. Product packaging includes many elements such as size, colour, image, and product information. These elements also play an important role in marketing. Hussain found that the constituent elements of packaging, such as colour, design, material composition, size, and labelling, are of critical importance both for the product itself (to maintain customer satisfaction) and for the manufacturer (to use the printed information on the package as a means of promoting the product) (Hussain, 2015).

Manufacturers are investing heavily in packaging design with the growing realization that it influences buying at the point of purchase (Soderlund et al., 2017). Packaging design can capture customer attention, persuade, and facilitate preference. In this regard, Shukla et al. (2022) posit that manufacturers should look beyond the effect of creativity and consider its role in the customer persuasion process. For example, packaging design may encourage curiosity and motivate shoppers to process stimuli (Shukla et al., 2022). In addition, packaging design may increase customer arousal. Such increased arousal persuades customers to become curious about the creative cue, and they, in turn, are motivated to process the information. Good packaging can create a feeling of better quality and a more luxurious product for the consumer, even if this is not the case. In addition, inadequate packaging can affect a product's image in the marketplace by shaping consumers' opinions, expectations, and ultimate choices. In marketing communications, packaging is crucial. The proper packaging colour can increase sales, while an incorrect colour can decrease them.

Thus, to maximise the value of packaging in purchases, it has become important to examine packaging, its components, and how they affect customers' preferences. However, what qualities of product packaging are more effective in promoting product sales and accelerating brand communication? Scholars have explored packaging evaluation from various perspectives, including visibility, informativeness, emotional appeals, workability, and other factors. However, the general goal of product packaging design, its components, and their influence on customers' preferences have become an important research topic (Angelis, 2015). Although it has some guiding significance for the overall direction of product packaging design, it is difficult to adapt to the current social media era's development and change. It is necessary to examine how product packaging features affect customers' preferences, the extent of their effect, and the best way to redesign the package. To offer constructive ideas and proposals for improving product packaging, the study examines the modified packaging design and customer preferences in a volatile business environment in Southwest Nigeria. Besides, there is a dearth of literature in this area in Nigeria, especially in Ado-Ekiti, Ekiti State. Therefore, the study seeks to examine the effect of colour, image, and shape on customer preference in a volatile business environment in South-West Nigeria.

## LITERATURE REVIEW

### *Concept of packaging design*

Siyanbola et al. (2020) posited that packages attract consumers' attention to a particular brand, enhance their image, and influence consumers' perceptions about product. The retail shelf has always been a platform for products to effectively compete for buyers' eyes and preferences. Visual designers strive to create eye-catching, compelling designs for a product brand to carve a niche in the buyer's mind and make it edgier than rivals. Rabinowitz (2003) noted that, by skillfully combining colourful graphics with a unique shape, or any other eye-catching method, the package designer is a key player in any company's marketing efforts. Packaging serves as an instrument for differentiation, helps consumers choose a product from a wide range of parallel products, and stimulates customers' buying behaviour (Wells et al., 2007). Product packaging is the visual carrier and embodiment of the brand's value. It represents the most frequent and close point of contact with consumers and a brand contact point that affects the perception and status of the brand in the consumers' minds. It not only protects the product or serves as an instrument for its transfer but also serves as an important tool to promote sales and a crucial platform for brand dissemination. In this regard, it is referred to as the 4Ps parallel to the triangle (Te Vaarwerk, 2015). Good packaging can create a feeling of better quality and a more luxurious product for the consumer, even if this is not the case. In addition, poor packaging can affect a product's performance in the marketplace by influencing consumers' opinions, expectations, and ultimate choices. In marketing communications, packaging is crucial. The proper packaging colour can increase sales, while an incorrect colour can decrease them (Yung, 2023).

### *Colour*

Colour is one of the essential merchandising factors in snack food packaging design and can attract consumers' attention. Colour can create the illusion of time. For instance, red creates the impression of a longer psychological time than blue. Therefore, most food packaging chooses orange, yellow and red. These

colours are not only to make people excited, but also to make people feel that time is long. That is to say, colour can prolong the time that it interacts with the consumer (Wang & Gani, 2022). The elements that make up the packaging design include structural design, graphic design, and colour. Colour is a visual language we perceive through our eyes and can create perception in our minds (Baptista, 2021). Colour is a basic design element that results from light interacting with objects and surfaces. Colours make everything around us visible because of light. Light, surface, eye and brain provide a process of appearance. It is physiological for light to reach our brain by hitting various parts of the eye and being refracted, but the perceptions in the brain are a psychological event. Colours with proven effects on people are used to evoke a range of emotions (Ozcan & Kandirmaz, 2021). According to research, children prefer sweet foods. Lighter colours represent smooth, soft foods, while darker colours represent rich, complex foods. These findings suggest that colour has a stimulating and suggestive effect on children's psychology and physiology (Mead & Richerson, 2018). Therefore, we propose the hypothesis:

H1: Colour has no significant effect on customer preference in a volatile business environment in South-West Nigeria.

#### ***Image***

Images play a crucial role in snack food packaging design and are used by both designers and marketers. It takes centre stage in the composition of most snack food packaging (Simmonds & Spence, 2017). The image on snack food packaging is a visually exciting and significant element (Rebollar et al., 2015). Consumers' opinions of the brand are impacted by the image portrayed on snack food packaging (Schifferstein et al., 2021) and consumers' attention (Zhou et al., 2021). Previous research has shown that consumers exhibit different emotional responses to different kinds of images (Liao et al., 2015). For marketers, these findings underscore the importance of strategically placing images on packaging. The placement of the product image is not merely an aesthetic choice but a key factor that can influence consumer perceptions of its attributes, such as heaviness, quality, and suitability for health-conscious consumers. By understanding the relationships between product image location, consumer goals, and the retail context, brands can design packaging that resonates with target shoppers and enhances product appeal. Images are used extensively by designers and marketing teams, depending on food styles and standards. As a result, a packaging might include a picture of the food inside, images of things only indirectly related to the food (such as humans, plants, or animals), or a combination of the two. It is imperative to display the food in the packaging because it allows consumers to see its appearance. The exterior design of food is a visual cue that consumers use to infer its quality attributes (Simmonds & Spence, 2017). Therefore, the following hypothesis is proposed:

H2: Image has no significant effect on customer preference in a volatile business environment in South-West Nigeria.

#### ***Shape***

Packaging shape is a significant factor in the current fiercely competitive food industry. Extant literature confirms that packaging shape is related to the practical approach to identifying and distinguishing snacks. This approach suggests a perception-based classification and provides inferences about other snack characteristics (Schifferstein et al., 2022). Shape is considered an essential factor in consumer decision-making, and it can help manufacturers gain an edge over competitors in the same field. Emotions, attitudes, and purchase behaviours can be influenced by packaging shape (Wang et al., 2023). The packaging shape is one of the two attributes that influence a purchase decision. The shape of packaging varies depending on the purpose and product type. Sometimes, a deviation in packaging design within a product category may draw more consumer attention (Kovačević & Brozović, 2012). Packaging shape can make the product more attractive and help consumers predict its volume and monetary value. According to Sung (2021), packaging with a shape that is significantly different from the standard is more accessible and thereby attracts greater consumer attention. Modern packaging design comprises various design styles and intrinsic concepts. However, the design elements are inseparable. Based on the practicality of the packaging design, they are combined with the overall design style and design concept of the packaging, while on the basis of the laws of the formal beauty of the line, it seeks the most suitable form of expression and uses the different forms of the line effectively in the design (Zhang, 2021). Therefore, we propose the hypothesis:

H3: Shape has no significant effect on customer preference in a volatile business environment in South-West Nigeria.

#### ***Customer preference***

Consumers' preferences for products or brands arise from the combination of many different factors. Some factors come from features of the product itself (e.g., price, durability), while others are attributes of consumers themselves (e.g., goals, attitudes, discretionary income) (Kuncoro & Kusumawati, 2021). Consumers differ greatly in their preferences and may prefer different attributes from the same product, service or market offering (Denizci et al., 2016). It is important to understand customer preferences so businesses can design their offerings to meet customers' preferences and expectations. According to Calingasan et al. (2025), customer preferences significantly influence decision-making processes by acting

as criteria for evaluating products and services. These preferences, shaped by cultural, social, and psychological factors, determine which features or attributes customers prioritize in their purchasing decisions. Schivinski and Dabrowski (2016) found a strong link between customer preferences and purchase intention. Positive attitudes toward a product that aligns with preferences increase the likelihood of purchase. Personalized marketing enhances trust and brand credibility, further driving purchase intention. Consequently, the conceptual model of modified packaging design and customer preference is indicated in Figure 1. It shows how a modified packaging design relates to customer preferences. Manufacturers design product packaging to attract customers and meet their preferences. Packaging design elements influencing consumer behaviour are becoming increasingly important for companies seeking competitive advantage. Product packaging includes many elements, such as size, colour, images, product information, and labelling. They are critical of both the product itself (to maintain customer satisfaction) and the manufacturer (to use the printed information on the package to promote the product). In this model, modified packaging design relates to colour, image and shape.

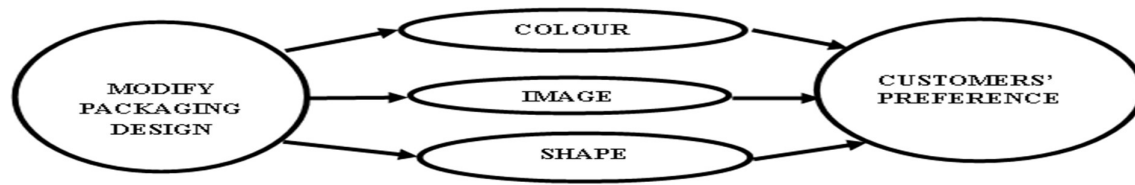


Figure 1: Conceptual model of modified packaging design and customer preference

Sources: Researcher

However, extant literature reveals that varying degrees of product packaging design affect consumer behaviour. For instance, Siyanbola et al. (2020) revealed a relationship between product packaging design and rational and irrational behaviours in consumption choices, while Raheem et al. (2014) confirmed the significant role of product packaging, including colour, packaging materials, wrapper design, and innovation, on consumers' buying behaviour. In snack food packaging, Wang et al. (2023) confirmed that colour, shape, image, line, and typography are the most essential design characteristics influencing consumer purchase behaviour, with image as the most significant factor, exerting the greatest effect on consumer purchase decisions. Notably, Packaging is an effective sales tool that directly affects product marketing and enables its transportation, storage, and use. Successful packaging, which ensures the product's physical properties are preserved until it reaches the consumer, acts as a silent seller, attracting attention in the retail environment in line with contemporary shopping habits. In addition, the form, material, use, graphic elements, and packaging are promotional items that reflect the product identity. Packaging shows structural and visual changes depending on the product type and marketing conditions. Therefore, Ozcan & Kandirmaz (2021) found that images and colours on packaging create logical and emotional associations with the product, encouraging consumers to buy. Further evidence of the effect of product packaging on purchase intention was demonstrated in studies such as Liu et al. (2025), which integrated the experience element as a mediator. With the mediating role of brand experience, colour, graphics, logo, and layout significantly influence purchase intention.

## METHODOLOGY

The study adopted a survey research design. The data used in this study were collected through primary sources. The study population comprised customers of selected bread products across two states in the South-West of Nigeria – Osun State and Ekiti State. Convenience sampling technique was used to select 350 respondents. The questionnaire was structured on a 5-point Likert scale, ranging from strongly agree (1) to strongly disagree (5). An individual's score is determined by the sum of all possible points (Tanujaya et al., 2022). Content validity was used to determine the scale's validity, and the reliability test, assessed using Cronbach's alpha, revealed internal consistency of items, with coefficients of 0.80–0.85 for each variable. Multiple linear regression statistical tool was used to test the hypothesis using the Statistical Package for the Social Sciences (SPSS) 20.

## RESULT AND DISCUSSIONS

The model was justified through  $R^2$ . It confirms the level of variance in the outcome variable. As indicated in Table 1, while the  $R$  (.846) confirms a strong positive multiple correlation among the variables, the  $R^2$  (.896) reveals that about 89.6% of the variability in customer preference is accounted for by the included colour, image, and shape variables. The variability is confirmed through the p-value as indicated in Table 2.

Further, Table 2 confirmed the statistical significance of the model given the value of the F-statistic (306.543) and the p-value (0.000), proving a statistical difference between the F-statistic and the F-calculated. Consequently, the model justification is statistically significant for colour, image, and shape in explaining 89.6% of the variance in customer preference. However, the remaining 10.4% can be attributed to the error term or to other variables not included in the multiple regression model.

**Table 1: Model justification**

R	R Square	Adjusted R Square	Std. Error of the Estimate
.846	.896	.893	3.70094

a. Predictors: (Constant), Colour, Image, Shape  
b. Dependent Variable: Customer preference

**Table 2: ANOVA analysis**

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	4838.729	2	1646.243	306.543	.000
Residual	2253.888	130	8.128		
Total	7092.617	350			

a. Dependent Variable: Customer preference  
b. Predictors: (Constant), Colour, Image, Shape

**Table 3: Coefficient of the variables**

Variables	Unstd. Coeff.	Unstd. Coeff.	Std. Coeff.	t	Sig	Collinearity statistics	Collinearity statistics
Variables	B	Std error	Beta	t	Sig	Tolerance	Variance
Constant	1.590	.657		2.320			
Colour	.274	.070	.298	3.814	.000	.198	4.049
Image	.170	.038	.174	4.413	.000	.773	1.123
Shape	.454	.076	.459	5.897	.000	.195	4.119

a. Dependent Variable: Customer preference

The results confirm that colour, image, and shape significantly predict customer preference, with shape being the strongest predictor. At  $p < 0.001$ , colour is confirmed to significantly predict customer preference, with a unit increase in colour increasing customer preference by .274 units, holding other variables constant. This is consistent with the extant literature, such as Mohammed et al. (2018), which posits colour as the strongest factor predicting customer preference. Also, in the case of image, at  $p < 0.001$ , it is confirmed as a significant predictor of customer preference, although it has the weakest comparative effect among the predictors. The implication of the result is that a unit increase in image significantly increases customer preference by .170 units, holding other variables constant. The result corroborates the findings in the literature (Simmonds & Spence, 2017). For shape, the p-value indicates that the variable is a significant predictor of customer preference ( $p < 0.001$ ). By implication, a unit increase in shape significantly increases customer preference by .454 units, holding other variables constant. While the result is consistent with extant literature (Wang et al., 2023), shape is the strongest predictor of customer preference.

## Discussions

Colour, image, and shape are significant variables confirmed in the study to predict customer preference, although they had different predictive capacities for customer preference. However, the indication is that they cause a positive reaction in customer preference when tweaked a bit. For instance, colour is revealed to have a strong attractive effect on customers (Mohammed et al., 2018). The essence of colour places its importance in design and packaging. The consideration is important for customers who take colour into account when making purchases. For instance, pink is often a connotative colour for women, while in some culture, red is indicative of danger. Therefore, the essence of colour calls for careful consideration to avoid offending the culture of a place while also providing information on the significance of using colour on packages to woo customers' attention. A perfectly designed package with an attractive matching colour is informative and can draw customers' attention, as confirmed in the study. The attractiveness of a package is important, but the colour is essential in communication and boosting attraction. Colour is a visual language we perceive through our eyes and can create perception in our minds (Baptista, 2021).

Image is sometimes considered to be everything because it can influence the perception of customers and future businesses. In this study, the statistically significant result of the image buttresses the image's important role in customer preference. While the findings corroborate those of Simmonds and Spence (2017), who posit that image plays a crucial role in snack food packaging design, the underlying factor is that it is used by both designers and marketers. It takes center stage in the composition of most snack food packaging. The image on snack food packaging is a visually exciting and significant element (Rebollar et al., 2015). Consumers' opinions of the brand are also impacted by the image portrayed on snack food packaging (Schifferstein et al., 2021).

The strongest predictor among the variables is shape. Shape is important in customer preference. Ergonomic, well-fitting packages attract more attention and traction than shabbily designed ones. The result reveals the importance of engineering and attractive design. Wang et al. (2023) posit that shape is an essential factor in consumer decision-making. The understanding is that it can help manufacturers gain an edge over competitors in the same field. There is potential for attitudes and purchase behaviours to be influenced by packaging shape, especially when the product's ergonomic nature shapes customer preference, as confirmed in the study.

## CONCLUSION

In conclusion, the findings revealed that colour, image and shape have significant effect on customer preference in a volatile business environment in South-West, Nigeria. While colour, image and shape are important in determining customer preference, shape has the strongest predictive power in a volatile business environment. When customers walk into a store, products with distinctive, expressive packaging and shapes are easily noticed and eventually edge others out when consumers make their choice. Packaging attracts consumers' attention to a particular brand, enhances its image, and influences consumers' perceptions about product. Therefore, manufacturers of bread products are recommended to package their products with colours that align with customers' preferences, while also considering the image on the bread packaging that convinces customers to prefer their product over competitors'. Because shape is the strongest predictor, it is recommended that the bread product be unique and distinct to differentiate its product from others. In essence, investing in packaging design is essential to enhance customer preference. However, the study is delimited to the South-West and is also limited by sample size, as the number does not necessarily constitute the total population. Therefore, future studies should increase the sample size and adopt a probability sampling approach, given that the study uses a non-probability sampling method, which does not guarantee equal representation in the sample. Additionally, future studies can tweak the statistical approach by adopting more robust techniques, such as factor analysis and structural equation modelling.

### *Practical Implications*

The implication of colour as a significant factor suggests that customers are emotionally and psychologically influenced by the colours used in product packaging, branding, and advertising. Firms that adopt colours often reflect quality, trust, attractiveness, and cultural relevance to their target audience. Similarly, the significance of image implies that customers are strongly affected by visual representations associated with products and brands. Therefore, firms that invest in high-quality brand images, logos, and promotional materials that convey professionalism, reliability, and value are more likely to positively influence how customers perceive their brands. The finding on shape also implies that the physical appearance and design structure of products play a significant role in attracting customers to a firm's brand. Attractive and convenient product shapes can improve customer preference and increase the likelihood of purchase.

## REFERENCES

Ahmed, R. R., Parmar, V., & Amin, M. A. (2014). Impact of product packaging on consumer buying behavior. *European Journal of Scientific Research*, 122(2), 125–134.

- Angelis, V. A. (2015). Customers' perceived value for private and state-controlled Hellenic banks. *Journal of Financial Services Marketing*, 9(1), 360–375.
- Baptista, I., Valentin, D., Saldaña, E., Behrens, J. H., & Deliza, R. (2021). Effects of packaging color on expected flavor, texture, and liking of chocolate in Brazil and France. *International Journal of Gastronomy and Food Science*, 24, Article 100340. <https://doi.org/10.1016/j.ijgfs.2021.100340>
- Calingasan, F. J. A., Bacay, A. J. S. J., Mendoza, K. M. C., Sunga, Y. S. M., Lujanob, M. Y. R., & Melo, M. C. F. (2025). Customer preference and purchase intention in the footwear section at the Calapan City Public Market. *Fritzel Joy World Journal of Advanced Research and Reviews*, 25(1), 519–530.
- Denizci Guillet, B., & Kucukusta, D. (2016). Spa market segmentation according to customer preference. *International Journal of Contemporary Hospitality Management*, 28(2), 418–434. <https://doi.org/10.1108/IJCHM-07-2014-0374>
- Holmes, G. R., & Panigrahi, A. P. (2012). Consumer reaction to new package design. *Journal of Product & Brand Management*, 21(2), 109–116.
- Hussain, S. (2015). Impact of product packaging on consumer perception and purchase intention. *Journal of Marketing and Consumer Research*, 2(1), 1–10.
- Kotler, P., & Keller, K. L. (2016). *Marketing management* (15th ed.). Pearson Education.
- Kuncoro, H. A. D. P., & Kusumawati, N. (2021). A study of customer preference, customer perceived value, sales promotion, and social media marketing towards purchase decision of sleeping products in Generation Z. *Advanced International Journal of Business, Entrepreneurship and SMEs*, 3(9), 265–276.
- Kovačević, S. P., & Brozović, M. (2012). Impact of packaging shape and material on consumer expectations. *Journal of Graphic Engineering and Design*, 3(2), 39–44.
- Liao, L. X., Corsi, A. M., Chrysochou, P., & Lockshin, L. (2015). Emotional responses towards food packaging: A joint application of self-report and physiological measures of emotion. *Food Quality and Preference*, 42, 48–55. <https://doi.org/10.1016/j.foodqual.2015.01.009>
- Liu, C., Samsudin, M. R., & Zou, Y. (2025). The impact of visual elements of packaging design on purchase intention: Brand experience as a mediator in the tea bag product category. *Behavioral Sciences*, 15(2), Article 181. <https://doi.org/10.3390/bs15020181>
- Mead, J. A., & Richerson, R. (2018). Package colour saturation and food healthfulness perceptions. *Journal of Business Research*, 82, 10–18.
- Orth, U. R. (2008). Packaging design as resource for consumer goods. In *Proceedings of the International Wine Business Research Conference* (pp. 1–18). Montpellier, France.
- Ozcan, A., & Kandirmaz, E. A. (2021, November 18–19). The effect of packaging colour on product sales. Paper presented at the *8th International Joint Conference on Environmental and Light Industry Technologies*, Budapest, Hungary.
- Rundh, B. (2005). The multi-faceted dimension of packaging. *British Food Journal*, 107(9), 670–684.
- Raheem, A. R., Vishnu, P., & Ahmed, A. M. (2014). Impact of product packaging on consumer buying behavior. *European Journal of Scientific Research*, 122(2), 125–134.
- Rebollar, R., Lidón, I., Martín, J., & Puebla, M. (2015). The identification of viewing patterns of chocolate snack packages using eye-tracking techniques. *Food Quality and Preference*, 39, 251–258. <https://doi.org/10.1016/j.foodqual.2014.08.002>
- Schifferstein, H. N. J., Lemke, M., & de Boer, A. (2022). An exploratory study using graphic design to communicate consumer benefits on food packaging. *Food Quality and Preference*, 97, 104–115.
- Schifferstein, H. N. J., de Boer, A., & Lemke, M. (2021). Conveying information through food packaging: A literature review comparing legislation with consumer perception. *Journal of Functional Foods*, 86(1), 104–114.
- Schivinski, B., & Dabrowski, D. (2016). The impact of brand communication on brand equity through Facebook. *Journal of Research in Interactive Marketing*, 10(1), 31–53. <https://doi.org/10.1108/JRIM-02-2015-0013>
- Shukla, P., Singh, J., & Wang, W. (2022). The influence of creative packaging design on customer motivation to process and purchase decisions. *Journal of Business Research*, 147, 338–347.
- Simmonds, G., & Spence, C. (2017). Thinking inside the box: How seeing products on, or through, the packaging influences consumer perceptions and purchase behaviour. *Food Quality and Preference*, 62, 340–351. <https://doi.org/10.1016/j.foodqual.2016.11.010>
- Silayoi, P., & Speece, M. (2007). The importance of packaging attributes: A conjoint analysis approach. *European Journal of Marketing*, 41(11/12), 1495–1517.
- Siyanbola, A. B., Oyinloye, M. A., Oladesu, J. O., & Adeyemi, A. O. (2020). The influence of product packaging design on consumer behaviours: A case study of students of Ahmadu Bello University, Zaria, Nigeria. *Ethiopian Journal of Environmental Studies and Management*, 13(2), 232–241.

- Sukmaaji, N., & Fitria, S. E. (2018). Analysis of consumer preferences for marketing communication strategy on Sass and Co. *Jurnal Ilmu Sosial Politik dan Humaniora (JISORA)*, 1(1), 1–8. <https://doi.org/10.36624/jisora.v1i1.6>
- Sung, I. (2021). Interdisciplinary literature analysis between cosmetic container design and customer purchasing intention. *Journal of Industrial Distribution & Business*, 12(3), 21–29.
- Te Vaarwerk, M. (2015). Under cover and close at hand: Embodied metaphor in packaging design. *International Journal of Design*, 9(1), 15–30.
- Tanujaya, B., Prahmana, R. C. I., & Mumu, J. (2022). Likert scale in social sciences research: Problems and difficulties. *FWU Journal of Social Sciences*, 16(4), 89–101. <https://doi.org/10.51709/19951272/Winter2022/7>
- Venkatraman, V., Clithero, J. A., Fitzsimons, G. J., & Huettel, S. A. (2012). New scanner data for brand marketers: How neuroscience can help better understand differences in brand preferences. *Journal of Consumer Psychology*, 22(1), 143–153. <https://doi.org/10.1016/j.jcps.2011.11.008>
- Wang, H., & Gani, M. A. A. A. (2022). Research on emotional design for children food packaging. *Ideology Journal*, 7(2), 8–24.
- Wang, H., Muhamad, A., Ab Gani, A., & Liu, C. (2023). Impact of snack food packaging design characteristics on consumer purchase decisions. *SAGE Open*, 13(2), 1–15.
- Wells, L. E., Farley, H., & Armstrong, G. A. (2007). The importance of packaging design for own-label food brands. *International Journal of Retail & Distribution Management*, 35(9), 677–690.
- Xu, N. (2022). Aesthetic construction of product packaging design based on visual communication principles. *Journal of Pu'er College*, 38(5), 88–90.
- Yung, X. Y. (2023). The positive role of packaging in consumer behaviour. In *Proceedings of the 2nd International Conference on Financial Technology and Business Analysis*. <https://doi.org/10.54254/2754-1169/63/20231445>
- Zhou, Z., Zheng, L., & Li, X. (2021). Abstract or concrete? The influence of image type on consumer attitudes. *International Journal of Consumer Studies*, 45(5), 1132–1146.