Journal of Consumer Studies and Applied Marketing
Volume 2 Number 1: 57-74
DOI: 10.58229/jcsam.v2i1.175
https://jurnal.integrasisainsmedia.co.id/index.php/JCSAM

The Influence of Visual Attributes in Packaging Design on Generation Z's Dessert Snack Purchasing Decision

Azka Belliza[1*], Nurrani Kusumawati[2]
Institut Teknologi Bandung, Bandung, Indonesia[1,2]

Email: azka_belliza@sbm-itb.ac.id

Abstract

This research explores the influence of packaging design on the purchasing decisions of Generation Z consumers, focusing on dessert snack products. The primary objective of this study is to evaluate the extent to which each visual element of a product's packaging influences the purchasing decisions of Generation Z consumers. A further aim is to identify specific preferences for each visual element in food packaging design that Generation Z. favors. In order to achieve these objectives, a mixed-methods approach was employed, combining quantitative surveys with 422 respondents and qualitative interviews with 12 participants, all from Generation Z. The results reveal that visual appeal significantly influences purchasing decisions, primarily through the mediating variable of perceived quality. Individual elements such as appealing color combinations and unique typography enhance perceived quality, driving purchasing decisions. Illustrations on the packaging also significantly impact purchase decisions. The choice of packaging material, especially eco-friendly options, positively affects perceived quality, while the shape and size of packaging influence perceptions of practicality and quality. While some visual elements, like product photography and shape, show small influences and do not directly influence purchase decisions, they contribute to the packaging's overall attractiveness and perceived quality. These findings suggest that effective packaging design tailored to the visual preferences of Generation Z can enhance the marketability of dessert snack products. However, the study has limitations, including its focus on a specific product category and demographic group, which may not generalize to other contexts. Future research could explore the influence of packaging design on different consumer groups and product categories. The study provides insights for marketers and designers aiming to capture the attention of Generation Z consumers through strategic packaging design.

Keywords: Dessert Snacks; Generation Z; Packaging Design; Purchase Decisions.

A. INTRODUCTION

In today's rapidly evolving market, businesses face the continuous challenge of staying relevant amid shifting consumer trends, technological advancements, and intense competition. Generation Z, those born between 1997 and 2012, emerges as a key demographic. Representing 27.94% of Indonesia's population (Utomo and Heriyanto, 2022), Generation Z holds significant influence over market dynamics due to its unique characteristics and substantial purchasing power (Fromm & Read, 2018). More than 70% of parents recognize the impact of their Generation Z children on decisions related to clothing and family meal purchases (Interactions, 2016). This influence is expected to shape future business strategies, particularly with the Fourth Industrial Revolution demanding adaptation to emerging consumer behaviors (Ayuni, 2019). Understanding and effectively responding to Generation Z's consumer behavior is essential for businesses aiming to succeed in this changing market landscape.

Maslow's Hierarchy of Needs highlights self-actualization and a desire for aesthetics as crucial for Generation Z, who value uniqueness and seek to express their viewpoints, style, and interests (occstrategy.com, 2019: 17). Their purchasing decisions for apparel, accessories, or groceries are driven by distinctive brands and products (occstrategy.com, 2019: 25). As digital natives with an average attention span of 8 seconds (Patel, 2017), their buying experiences are heavily influenced by social media, with frequent sharing of these experiences through posts, photos, and videos (Goldring & Azab, 2020). Influencers who specialize in specific themes play a significant role in shaping their purchasing decisions through visually appealing content (Geyser, 2023).

* Corresponding author

Product packaging serves as the initial point of contact between consumers and a brand. Effective packaging captures attention and communicates the company's messages and values (Ambrose & Harris, 2017:10). Visually appealing packaging can expedite decision-making and sway preferences toward products with attractive designs, even if these are priced higher than those from well-established brands (Reimann et al., 2010). Consumers often prioritize design over price when evaluating new products (Kuo et al., 2023). An appealing design can trigger the purchasing decision-making process and increase the desire to showcase and care for a product (Bloch, 1995 in Reimann et al., 2010). Given Generation Z's behavior of sharing shopping experiences on social media, businesses need to enhance packaging to foster brand identification among these consumers.

Food and beverages, being essential to all humans, are a prominent category where visual characteristics such as presentation and packaging play a critical role. These elements create a compelling design that engages consumers both emotionally and logically (Desmet & Hekkert, 2007: 3; Silayoi & Speece, 2004). Generation Z allocates 70.59% of their monthly spending to food and snack products (Utomo and Heriyanto, 2022: 52) and relies on design-based distinctions in their decision-making process (Wood, 2013). Therefore, companies in the food industry should tailor their marketing strategies to align with Generation Z's preferences. Packaging acts as both a product protection and an advertising tool (Kotler & Keller, 2006; Gershman, 1987). The growing global interest in packaging design, particularly in Indonesia, underscores the importance of adapting packaging to Generation Z's preferences.

Research by (Reimann et al., 2010) indicates that consumers are more inclined to choose products with aesthetically pleasing packaging over well-known brands with standard packaging, even at higher prices. This emphasizes the powerful impact of visual appeal on decision-making. Investing in high-quality, visually appealing packaging provides a strategic advantage to new brands, allowing them to compete effectively with established ones. The urgency for Indonesian companies to align their packaging designs with Generation Z's preferences is critical, as failing to adapt may result in losing market share to more innovative competitors (Ayuni, 2019). Rebranding efforts, including updates to packaging designs, are vital for maintaining market position and reflecting contemporary consumer preferences and cultural trends (Ji, 2014).

To lay the groundwork for this research, a preliminary survey of 133 Generation Z respondents was conducted. Most participants (59.4%) reside in Bandung, while 31.6% live in Jakarta, highlighting the distinct cultural characteristics of these cities (Radjawali, 2004). The survey revealed that 74.8% of respondents were female, which is consistent with higher online activity among females (King, 2019; Sheldon & Bryant, 2015). When asked about making purchases based solely on packaging, 93.2% affirmed this. Additionally, 90.2% reported avoiding products due to unattractive packaging, and 97% had chosen one brand over another because of superior packaging.

A significant majority, 78.9%, indicated that dessert snacks such as chocolate, candy, and ice cream were most influenced by packaging design. Furthermore, 94% acknowledged the importance of packaging design in food and beverage products. With over 71% of Generation Z's monthly income allocated to food products (Utomo and Heriyanto, 2022: 52), and food and beverages being their second-largest spending category after clothing (Simangunsong, 2018), this "self-healing" spending behavior makes them a key target for food and beverage companies.

This study focuses on understanding Generation Z's purchasing behavior in the food and beverage sector, specifically within the dessert snack category. The research will investigate how visual attributes such as colors, shapes, and graphics influence their choices. Understanding these factors is essential for effective marketing (Verhelst, 2008). The study aims to explore how visual attributes of packaging affect purchasing decisions, with perceived quality serving as a mediating variable, supported by studies from (Akhter and Nur-Al-Ahad, 2021; Wang et al., 2023; Lin, 2019). Limitations of the study include its focus on a specific

product category and demographic group, which may not be applicable to other industries or regions. Experiments will be employed to validate the proposed model.

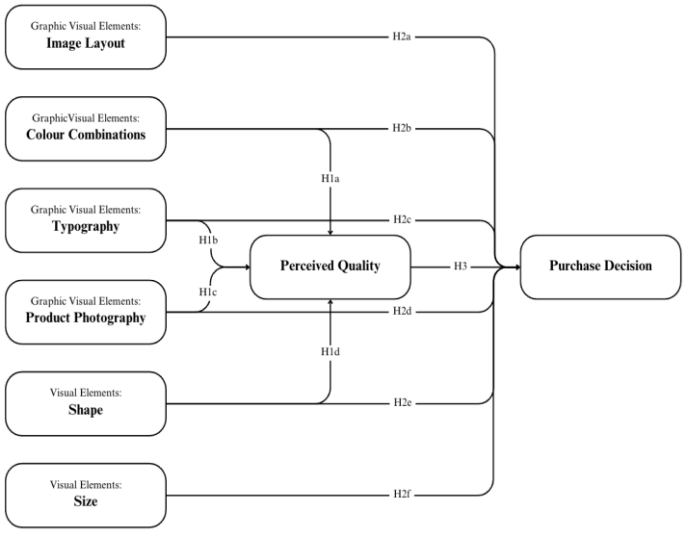

Figure 1. Conceptual Framework
Source: Research data, 2024

B. RESEARCH METHOD

The initial phase of our research focuses on addressing company oversight regarding the importance of packaging design from the perspective of Generation Z, the largest consumer demographic in Indonesia's future market. The study aims to examine how visual attributes of packaging design influence Generation Z's purchasing decisions, with a specific emphasis on dessert snack products based on preliminary survey findings indicating their interest in this category. Following this, hypotheses will be formulated, and variables will be defined and analyzed within relevant theories and frameworks. Data collection will employ mixed methods, starting with interviews to gather qualitative insights before distributing surveys to targeted respondents. This approach is designed to minimize potential bias and ensure that the interview results do not influence the survey development. The research will culminate in a comprehensive analysis of the findings, which will inform conclusions and provide recommendations for future research.

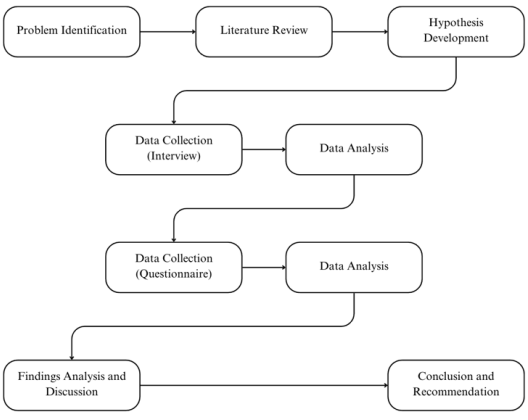

Figure 1. Research Flowchart
Source: Research data, 2024

This research will employ a mixed-methods approach, combining both quantitative and qualitative methodologies. Quantitative data will be collected via a survey, while qualitative insights will be gathered through in-depth interviews focusing on preferred visual attributes of snack packaging. For the qualitative component, semi-structured interviews will be utilized. This method allows participants to articulate their views in their own words, providing a richer understanding of their experiences through open-ended questions and a flexible framework. The interview subjects will be Generation Z individuals who regularly consume snack products. Prior research (Rijnsoever, 2017) indicates that theoretical saturation—where no new information or themes emerge—guides the adequacy of sample size in qualitative research. Accordingly, a minimum of 12 respondents is expected to achieve data saturation. The interviews will be conducted in Bahasa Indonesia to ensure clarity and precision in capturing respondents' perspectives.

Table 1. Interview Questions

No	Questions
1	What are your thoughts regarding food packaging in general off the top of your mind?
2	How do you evaluate the quality of food before making a purchase, and what role does packaging play in this assessment?
3	How important is the perceived quality of packaging in your final decision to purchase a dessert snack?
4	Do you feel that visually attractive packaging design influences your decision to buy a product? Can you give an example?
5	When purchasing dessert snacks, what are your top considerations regarding the packaging?
6	Could you describe an example of snack packaging that you perceived as high-quality? What specific elements contributed to this perception?
7	Besides colour combination, Image Layout, Typography, Photography, Size, and Shape, are there any other attributes that contribute to your perception of high-quality packaging (For example: material)
8	*(Interactive analysis. A board of packaging designs will be presented)* Let's now examine a variety of packaging designs for a dessert snack product. Which shapes and sizes of the packaging do you find most appealing or likely to influence your decision to purchase? What are your preferences for colours and font styles? How would you arrange the images and photography on the packaging?

Source: Adapted from (Wang et al., 2023)

The interviews will be analyzed using automated coding through the NVivo application to minimize misinterpretation. Findings will be validated through data triangulation, incorporating netnography, interviews, and literature reviews. In addition, a questionnaire will be deployed via Google Forms, chosen for its efficiency in reaching a diverse respondent pool. The questionnaire will include multiple-choice questions on sociodemographic and behavioral information, as well as structured questions rated on a Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). The exclusion of a neutral midpoint is intended to elicit definitive responses, enhancing data clarity (Chyung et al., 2017). Questions have been translated into Bahasa Indonesia to ensure respondents understand, with prior studies informing them of the questionnaire design.

For the quantitative analysis, the survey will focus on Generation Z individuals in major metropolitan areas of Indonesia, specifically Jakarta and Bandung. The sample size will be determined using the (Yamane, 1967) formula, targeting approximately 400 respondents. Sampling will employ non-probability purposive sampling, selecting consumers of dessert snack products residing in these cities. Data analysis will utilize Descriptive Analysis and Partial Least Squares Structural Equation Modelling (PLS-SEM) with Smart PLS 4.

C. RESULTS AND ANALYSIS

Qualitative methods were employed to commence the research through semi-structured interviews conducted via Google Meet. This online platform facilitated interactions with participants across various geographical locations, allowing for efficient recording and analysis of the sessions. The interviews featured open-ended questions, enabling a deeper exploration of respondents' experiences and perspectives. Participants were Generation Z individuals who regularly consume snack products. The interviews took

place from May 3 to May 9, 2024, with 12 individuals meeting the specified criteria and providing valuable data. This approach ensured a comprehensive understanding of the research topic.

The interview data revealed that all 12 respondents were aged between 15 and 23 years, aligning with the broader target age range of 12-27 years within Generation Z. This slight expansion from the initial 18-22 age focus enhances the study's comprehensiveness. The participants' extensive experience with dessert snacks supports the validity of the findings. A hierarchy chart was used to illustrate factors influencing dessert snack purchase decisions. The most significant factor identified was "Attractive Packaging," with sub-factors such as "Fun" and "Uniqueness" being particularly influential. As one respondent noted, "Cute packaging is very attractive to buy," highlighting the role of engaging packaging designs in capturing Generation Z's interest. Other important factors included "Product Information," "Brand Familiarity," "Review," "Taste," and "Price."

1) Product Information: Essential details about the product, often visualized through images on the packaging, help consumers make informed decisions.
2) Brand Familiarity: Recognition and trust in the brand, with established brands perceived to offer better quality packaging.
3) Review: Social proof and recommendations from other consumers, with platforms like TikTok influencing perceptions of product quality.
4) Taste: The expected flavor and quality of the snack are a primary consideration for purchase decisions.
5) Price: Affordability, which consumers weigh alongside other factors.

The survey also assessed preferences for image layout on dessert snack packaging. Respondents were given three options: "Image Left - Text Right," "Centered," and "Text Left - Image Right." The most preferred layout, chosen by 45% of respondents, was "Text Left - Image Right." The second most popular choice, selected by 38.4%, was the centered layout. The least favored option, "Image Left - Text Right," received 16.6% of the votes, as depicted in Figure 3. These preferences align with (Silayoi and Speece's, 2023) findings that left-right image arrangements are psychologically preferred.

Figure 2. Image Layout Preferences
Source: Research data, 2024

Figure 4 depicts Generation Z's preferences for color combinations on dessert snack packaging, presenting five options: Pastel, Muted, Bright, Warm, and Cool. The most preferred choice is the Warm Color Combination, favored by 29.6% of respondents. The Muted Color Combination ranks second, selected by 26.1%. The Pastel Color Combination follows with 23.2% of the votes. The Bright Color Combination is the fourth preference, chosen by 17.5%, while the Cool Color Combination is the least

preferred, with only 3.6% of the votes. These results suggest a strong preference for warm and Mud colors, indicating that most Generation Z respondents view these schemes as more attractive or suitable for dessert snack packaging.

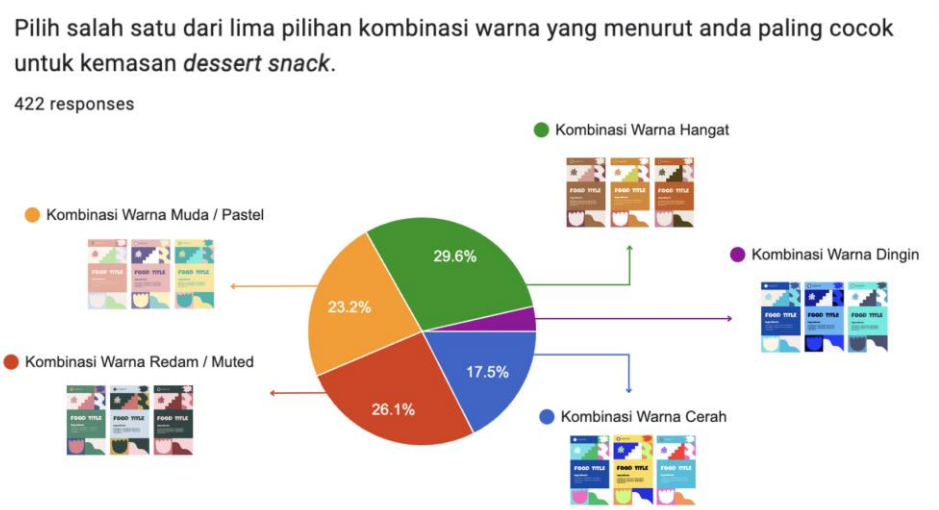

Figure 3. Color Combination Preferences
Source: Research data, 2024

Figure 5 illustrates the preferences of 422 respondents regarding font styles for dessert snack packaging, offering three options: "Display Font," "Handwriting Font," and "Type Font." The Handwriting Font is the most favoured, selected by 42.4% of respondents. The Display Font is the second choice, with 37.2% of votes, while the Type Font is the least preferred, chosen by 20.4%. These results indicate a clear preference for handwriting fonts, suggesting that most respondents view this style as more suitable and appealing for dessert snack packaging. The Display Font also holds notable appeal, whereas the Type Font is less popular, reflecting a general inclination towards more playful and engaging typography rather than traditional, plain fonts.

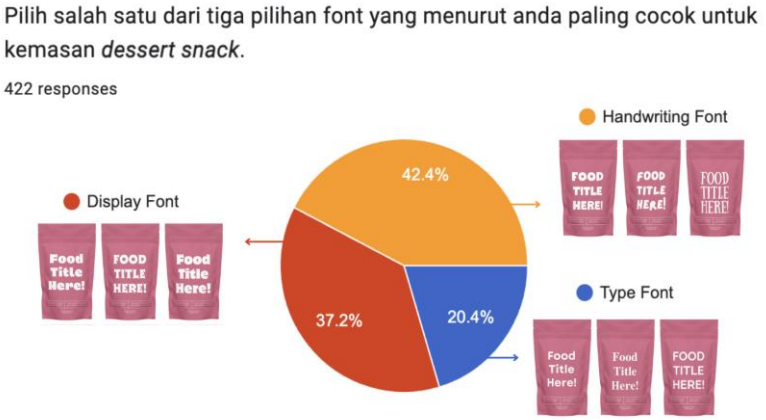

Figure 4. Typography Preferences
Source: Research data, 2024

Figure 6 illustrates respondents' preferences for product photography on dessert snack packaging, with four options: Illustration Image, Photographs Image, Image of People, and No Image. The majority of respondents (59.2%) preferred Photographs Image. The second most favoured option, chosen by 37.7%,

was Illustration Image. Only 2.6% of respondents preferred No Image, and just 0.5% opted for Images of People. These results indicate that photographs of the product are significantly more appealing and deemed more suitable for dessert snack packaging by most respondents. Illustrations also have considerable appeal, while images of people and packaging without images are much less favoured. This underscores the importance of showcasing the product directly in the packaging design, preferably through photographs or illustrations.

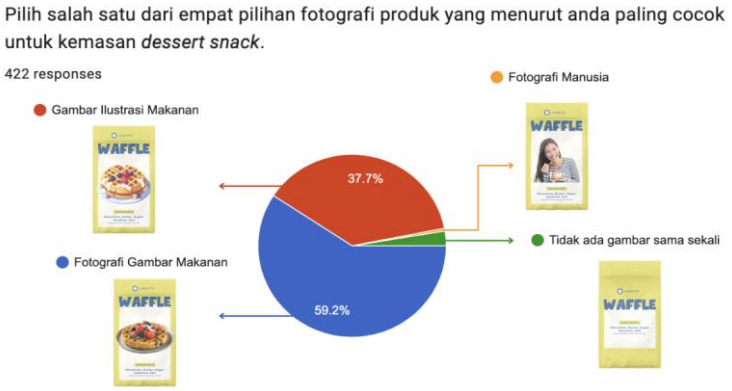

Figure 5. Product Photography Preferences
Source: Research data, 2024

Figure 7 shows the preferences of 422 respondents regarding the most suitable illustration style for dessert snack packaging, with two options: "Rendering Graphic" and "Graphic Simplification." The majority of respondents (58.8%) preferred the Rendering Graphic style, while 41.2% favoured Graphic Simplification. These results highlight a clear preference for detailed and realistic illustrations, indicating that most respondents view the Rendering Graphic style as more attractive for dessert snack packaging. Although a significant portion of respondents also favours graphic simplification, it is less popular than the rendering graphic style. This suggests that while modern, simplified graphic designs are gaining traction, traditional rendering styles continue to hold considerable appeal among Generation Z in Indonesia.

Figure 6. Illustration Preferences
Source: Research data, 2024

Figure 8 illustrates respondents' preferences for dessert snack packaging shapes, offering four options: Elongated Shape, Fancy Shape, Unique Shape, and Straight Shape. The Elongated Shape is the most preferred, chosen by 33.2% of respondents. The Straight Shape follows closely with 31.3% of the votes. The Fancy Shape is the third most favoured option, selected by 22.5% of respondents, while the Unique Shape is the least popular, with only 13% of the votes. These results indicate a strong preference for conventional shapes, with the Elongated and Straight Shapes being viewed as more suitable for dessert snack packaging.

The Fancy Shape also has significant appeal, suggesting that Generation Z appreciates more sophisticated designs. Conversely, the Unique Shape is less favoured, possibly due to perceptions of practicality or suitability for dessert snacks.

Figure 7. Shape Preferences
Source: Research data, 2024

Figure 9 illustrates respondents' preferences for dessert snack packaging sizes, offering three options: "Hand-sized," "Multi-pack," and "Visually Larger." The Multi-pack is the most preferred size, chosen by 46.2% of respondents. The Hand-sized option is a close second, favoured by 44.8%. The Visually Larger packaging is the least popular, selected by only 9% of respondents. These results suggest a strong preference for more convenient and portable packaging sizes, with Multi-packs slightly more favoured than Hand-sized options. The minimal preference for larger packaging indicates that consumers value practicality and portion control, finding smaller or multiple smaller packages more appealing and suitable for dessert snacks.

Figure 8. Size Preferences
Source: Research data, 2024

Measurement Model

Indicator reliability in PLS-SEM is evaluated by examining the outer loadings of indicators on their respective constructs. Outer loadings represent the correlation between an indicator and its associated latent variable, reflecting how well the indicator measures the construct. Ideally, an indicator's outer loading should be above 0.70. However, loadings as low as 0.40 may be acceptable if they meet the criteria for average variance extracted (AVE) and composite reliability (CR) (Hulland, 1999). The threshold for AVE

is 0.50 or higher, indicating that the construct explains at least 50% of the variance of its indicators (Fornell & Larcker, 1981).

Additionally, CR should be 0.70 or higher to ensure the internal consistency of the constructs. In this study, PLS-SEM analysis will assess the reliability of each indicator by confirming that outer loadings meet the minimum threshold of 0.40 while also ensuring that AVE and CR values meet their respective acceptable thresholds. This approach will validate the measurement model's effectiveness in accurately capturing the intended constructs. According to Table 2, all indicators are generally reliable as their outer loadings are above 0.40.

Table 2. Indicator Reliability Test

No	Variable	Label	AVE	CR	Outer Loading	Reliability
1	Image Layout	IL1	0.788	0.881	0.880	Reliable
		IL2			0.896	Reliable
2	Colour Combination	CC1	0.728	0.842	0.809	Reliable
		CC2			0.896	Reliable
3	Typography	TY1	0.757	0.862	0.888	Reliable
		TY2			0.853	Reliable
4	Product Photography	PP1	0.781	0.877	0.869	Reliable
		PP2			0.899	Reliable
5	Illustration	IR1	0.839	0.913	0.906	Reliable
		IR2			0.926	Reliable
6	Shape	SH1	0.721	0.838	0.866	Reliable
		SH2			0.831	Reliable
7	Size	SZ1	0.836	0.911	0.909	Reliable
		SZ2			0.920	Reliable
8	Material	MT1	0.641	0.840	0.852	Reliable
		MT2			0.895	Reliable
9	Perceived Quality	PQ1	0.535	0.912	0.629	Reliable
		PQ2			0.696	Reliable
		PQ3			0.737	Reliable
		PQ4			0.667	Reliable
		PQ5			0.753	Reliable
		PQ6			0.763	Reliable
		PQ7			0.759	Reliable
		PQ8			0.748	Reliable
		PQ9			0.752	Reliable
10	Purchase Decision	PD1	0.577	0.909	0.652	Reliable
		PD2			0.682	Reliable
		PD3			0.754	Reliable
		PD4			0.711	Reliable
		PD5			0.754	Reliable
		PD6			0.723	Reliable
		PD7			0.615	Reliable
		PD8			0.655	Reliable
		PD9			0.746	Reliable
		PD10			0.605	Reliable
		PD11			0.683	Reliable

Source: Research data, 2024

Internal consistency in PLS-SEM assesses how well the indicators of a construct correlate with each other. Key metrics for evaluating internal consistency are Composite Reliability (CR) and Cronbach's Alpha. For a construct to be considered internally consistent, the CR value should be 0.70 or higher, indicating that the indicators collectively represent the underlying construct effectively (Hair et al., 2017).

Similarly, Cronbach's Alpha values above 0.70 are also considered acceptable. These metrics ensure that the construct is measured reliably by its indicators.

Table 3. Internal Consistency Result

No	Variable	Composite Reliability	Cronbach's Alpha	Reliability
1	Image Layout	0.881	0.731	Reliable
2	Colour Combination	0.867	0.732	Reliable
3	Typography	0.842	0.781	Reliable
4	Product Photography	0.911	0.721	Reliable
5	Illustration	0.862	0.809	Reliable
6	Shape	0.896	0.713	Reliable
7	Size	0.877	0.713	Reliable
8	Material	0.886	0.835	Reliable
9	Perceived Quality	0.913	0.891	Reliable
10	Purchase Decision	0.856	0.890	Reliable

Source: Research data, 2024

The analysis of the table shows that all variables are both acceptable and reliable. Each construct's Composite Reliability (CR) and Cronbach's Alpha exceed the 0.70 threshold, confirming strong internal consistency across the constructs.

Convergent validity is essential for confirming construct validity in PLS-SEM. It evaluates whether the indicators for a specific construct converge or share a substantial amount of variance. To establish convergent validity, the Average Variance Extracted (AVE) must be at least 0.50 (Hair et al., 2017). This threshold indicates that the construct accounts for more than 50% of the variance in its indicators, as portrayed in Table 4.

Table 4. Convergent Validity Result

No	Variable	AVE	Validity
1	Image Layout	0.788	Valid
2	Colour Combination	0.621	Valid
3	Typography	0.728	Valid
4	Product Photography	0.718	Valid
5	Illustration	0.757	Valid
6	Shape	0.683	Valid
7	Size	0.781	Valid
8	Material	0.615	Valid
9	Perceived Quality	0.839	Valid
10	Purchase Decision	0.666	Valid

Source: Research data, 2024

The analysis confirms that every variable in the model is valid, as each construct's Average Variance Extracted (AVE) exceeds the threshold of 0.50, indicating that more than half of the variance is explained by the indicators. Understanding the significance of structural paths in Partial Least Squares Structural Equation Modeling (PLS-SEM) is essential for grasping the relationships between constructs. Path coefficients, ranging from -1 to 1, signify the strength and direction of relationships between independent and dependent constructs, with higher absolute values indicating stronger relationships. Assessing the significance of these path coefficients involves using the t-statistic, typically obtained through bootstrapping. A t-value greater than 1.96 indicates significance at the 5% level, suggesting that the path coefficient is statistically significant (Hair et al., 2017).

Structural Model

The path coefficients analysis reveals distinct influences of packaging design elements on consumer responses. Notably, the material has a significant positive impact on Perceived Quality with a path

coefficient of 0.273 and a t-value of 9.062, indicating a strong relationship. Similarly, Typography positively affects Perceived Quality, as evidenced by a path coefficient of 0.194 and a t-value of 3.422. Conversely, Product Photography demonstrates a negligible effect on Perceived Quality (Path Coefficient = -0.017), and size shows minimal influence on Purchase Decision (Path Coefficient = -0.033). These findings underscore that material and typography are critical factors in shaping perceived quality, whereas product photography and size have a less substantial impact on purchasing decisions.

Table 5. Structural Path Significance Result

No	Variable	Path Coefficient	T Statistic	R^2	Q^2
1	Image Layout → Purchase Decision	0.177	6.916	0.863	0.819
2	Colour Combination → Perceived Quality	0.148	3.988	0.795	0.786
3	Colour Combination → Purchase Decision	0.083	2.782	0.863	0.819
4	Typography → Perceived Quality	0.217	6.102	0.795	0.786
5	Typography → Purchase Decision	0.124	4.122	0.863	0.819
6	Product Photography → Perceived Quality	0.120	3.531	0.795	0.786
7	Product Photography → Purchase Decision	0.019	**0.611**	0.863	0.819
8	Illustration → Perceived Quality	0.172	4.285	0.795	0.786
9	Illustration → Purchase Decision	0.097	3.279	0.863	0.819
10	Shape → Perceived Quality	0.179	5.275	0.795	0.786
11	Shape → Purchase Decision	0.063	**1.929**	0.863	0.819
12	Material → Perceived Quality	0.273	9.062	0.795	0.786
13	Material → Purchase Decision	0.061	**1.922**	0.863	0.819
14	Size → Purchase Decision	0.093	3.173	0.863	0.819
15	Perceived Quality → Purchase Decision	0.412	8.132	0.863	0.819

Source: Research data, 2024

The model's explanatory power is assessed through the R^2 and Q^2 values. The R^2 values of 0.644 for Purchase Decision and 0.631 for Perceived Quality indicate a substantial degree of explanatory power, demonstrating that the model effectively accounts for a significant portion of the variance in these constructs. Additionally, the Q^2 values of 0.545 for Purchase Decision and 0.612 for Perceived Quality further confirm the model's predictive relevance, indicating its strong ability to predict the outcomes related to these constructs.

The GoF (Goodness of Fit) index, calculated by multiplying the square roots of the average R^2 and Q^2 values, is 0.608. This value indicates a strong model fit, suggesting that the model effectively captures the relationships between the constructs and provides a robust explanation of the data.

Table 6. Goodness of Fit Result

No	Variable	R^2	Q^2
1	Perceived Quality	0.631	0.612
2	Purchase Decision	0.644	0.545
	Average	0.637	0.578
	Goodness of Fit	0.608	

Source: Research data, 2024

F^2 values assess the practical significance of the findings. In this study, most paths show small effect sizes, with the exception of the path from "Perceived Quality" to "Purchase Decision," which has an F^2 value of 0.206, indicating a medium effect size. This suggests that "Perceived Quality" has a meaningful impact on "Purchase Decision" compared to other paths in the model.

Table 7. F-Square Result

No	Structural Path	F^2	Effect Size
1	Colour Combination → Perceived Quality	0.044	Small
2	Typography → Perceived Quality	0.031	Small
3	Product Photography → Perceived Quality	0	None

No	Structural Path	F^2	Effect Size
4	Shape → Perceived Quality	0.042	Small
5	Illustration → Perceived Quality	0.022	Small
6	Material → Perceived Quality	0.08	Small
7	Image Layout → Purchase Decision	0.029	Small
8	Colour Combination → Purchase Decision	0	None
9	Typography → Purchase Decision	0.009	None
10	Product Photography → Purchase Decision	0	None
11	Shape → Purchase Decision	0.006	None
12	Size → Purchase Decision	0.002	None
13	Illustration → Purchase Decision	0.022	Small
14	Material → Purchase Decision	0.006	None
15	Perceived Quality → Purchase Decision	0.206	Medium

Source: Research data, 2024

Hypothesis testing evaluates the significance of relationships in the model. A p-value less than 0.05 and a T-statistic greater than 1.96 indicate the acceptance of the hypotheses. The results reveal that hypotheses concerning the positive impacts of "Colour Combination," "Typography," "Shape," "Illustration," and "Material" on "Perceived Quality" are supported. Additionally, the significant influence of "Perceived Quality" on "Purchase Decision" is confirmed, highlighting the importance of perceived quality in affecting consumer purchase choices.

Table 8. Hypothesis Testing Result

Hypothesis	Structural Path	Path Coefficient	T Statistics	P Values	Result
H1a	Colour Combination → Perceived Quality	0.148	3.988	0.000	Positive Impact, Accepted
H1b	Typography → Perceived Quality	0.217	6.102	0.000	Positive Impact, Accepted
H1c	Product Photography → Perceived Quality	0.120	3.531	0.000	Positive Impact, Accepted
H1d	Shape → Perceived Quality	0.179	5.275	0.000	Positive Impact, Accepted
H1e	Illustration → Perceived Quality	0.172	4.285	0.000	Positive Impact, Accepted
H1f	Material → Perceived Quality	0.273	9.062	0.000	Positive Impact, Accepted
H2a	Image Layout → Purchase Decision	0.177	6.916	0.000	Positive Impact, Accepted
H2b	Colour Combination → Purchase Decision	0.083	2.782	0.006	Positive Impact, Accepted
H2c	Typography → Purchase Decision	0.124	4.122	0.000	Positive Impact, Accepted
H2d	Product Photography → Purchase Decision	0.019	**0.611**	**0.541**	Positive Impact, Rejected
H2e	Shape → Purchase Decision	0.063	**1.929**	**0.054**	Positive Impact, Rejected
H2f	Size → Purchase Decision	0.093	3.173	0.002	Positive Impact, Accepted
H2g	Illustration → Purchase Decision	0.097	3.279	0.001	Positive Impact, Accepted
H2h	Material → Purchase Decision	0.061	**1.922**	**0.055**	Positive Impact, Rejected
H3	Perceived Quality → Purchase Decision	0.412	8.132	0.000	Positive Impact, Accepted

Source: Research data, 2024

The study finds that various elements of packaging design—such as colour combinations, typography, product photography, shape, illustration, and material—positively influence perceived quality. Among these, material has the strongest positive effect on perceived quality. In terms of influencing purchase decisions, factors like illustrations, image layout, colour combinations, typography, and size have a notable impact, while product photography, shape, and material do not show a direct positive effect. This discrepancy suggests that consumer preferences for these design elements do not always align with their actual purchasing behaviour, indicating that other factors might be more influential in driving purchase decisions.

Perceived quality plays a crucial role in purchase decisions, with a significant impact of 41.2%. Generation Z consumers prefer warm or muted colours, fun and handwritten typography, practical and unique packaging shapes, and simple cartoon graphics, though rendered graphics are also popular. They also favour eco-friendly materials, provided they maintain functionality. This complexity in consumer behaviour underscores that visual appeal and perceived quality do not always translate directly to purchase decisions. The findings both support and challenge existing literature. While literature emphasizes the importance of product photography, shape, and material in enhancing perceived quality and influencing purchase decisions, the study reveals that these factors do not significantly impact purchase decisions in this context. This suggests that while consumers may value these elements in assessing product quality, they are not decisive factors in their purchasing choices within this specific study's framework.

D. CONCLUSION

This research on Indonesian Generation Z's snack purchasing behaviour reveals that visual packaging elements significantly influence perceived quality, which in turn strongly impacts purchase decisions. Colour combinations, typography, shape, illustrations, and materials positively affect perceived quality, with material having the strongest influence. Image layout and illustrations directly impact purchase decisions, while other elements like colour and typography don't show significant direct effects. Generation Z prefers warm or muted colours, fun handwritten typography, practical shapes, simple cartoon graphics (though rendered graphics remain popular), and eco-friendly materials balanced with functionality. The study highlights the complexity of consumer behaviour, where visual appeal and perceived quality don't always directly translate to purchases.

These findings both support and contrast existing literature, suggesting the need for further research into Generation Z consumer preferences in Indonesia, particularly across different food categories and considering gender as a moderating factor. The insights provide valuable guidance for food industry professionals targeting this demographic, emphasizing the importance of aligning packaging design with Generation Z's trends and preferences to enhance perceived quality and influence purchase decisions. The research fills a gap in the existing literature by focusing on the relatively unexplored area of Indonesian Generation Z's perception of packaging in their consumer behaviour. It extends theories of consumer psychology and marketing, offering valuable perspectives on the unique preferences of this demographic in Indonesia. For professionals in the food industry, understanding how packaging design influences purchasing decisions through perceived quality is crucial for winning the future competitive market, and this research provides a foundation for creating attractive packaging that resonates with Generation Z consumers.

REFERENCES

Abdullah, M., Kalam, A., & M, A. S. (2013, October 14). Packaging Factors Determining Consumer Buying Decision. Ssrn.com.

Aguinis, H., Beaty, J. C., Boik, R. J., & Pierce, C. A. (2005). Effect Size and Power in Assessing

Moderating Effects of Categorical Variables Using Multiple Regression: A 30-Year Review. Journal of Applied Psychology, 90(1), 94–107.
Ahmad, N., Billoo, M., & Lakhan, A. A. (2012, December 16). Effect of Product Packaging in Consumer Buying Decision. Ssrn.com.
Akbar, T. (2023). Building Perceived Quality in the Influence of Personal Selling on Purchase Decision. Interdisciplinary Social Studies.
Akhter, T., & Nur-Al-Ahad, M. (2021). Influence of Packaging Elements on the Purchase Decision-Making: a Study on the Bar Soap Users of Dhaka City, Bangladesh. Management & Marketing, 19(2), 161–180.
Aliet, M. (2024). LinkedIn. Linkedin.com. https://www.linkedin.com/pulse/effective-brand-architecture-5-dos-donts-help-relaunch-mathijs-aliet/
Ampuero, O., & Vila, N. (2006). Consumer Perceptions of Product Packaging. Journal of Consumer Marketing, 23(2), 100–112.
Ansari, M. U. A., & Siddiqui, D. A. (2019). Packaging Features and Consumer Buying Behavior Towards Packaged Food Items. SSRN Electronic Journal.
Anwar, M., & Andrean, D. (2021). The Effect of Perceived Quality, Brand Image, and Price Perception on Purchase Decision. Advances in Economics, Business and Management Research.
Bhattacharyya, P. R. (2020, November 6). How Packaging Influences Consumers' Purchase Decision: an Introspection. ResearchGate.
Bloch, P. H. (1995). Seeking the Ideal Form: Product Design and Consumer Response - Peter H. Bloch, 1995. Journal of Marketing.
Borishade, T. T., Dirisu, J., & Ogunnaike, O. O. (2015, March). Empirical study of packaging and its effect on consumer purchase decision in a food and beverage firm. ResearchGate; unknown.
Bou-Mitri, C., Abdessater, M., Zgheib, H., & Akiki, Z. (2020). Food packaging design and consumer perception of the product quality, safety, healthiness and preference | Emerald Insight. Nutrition & Food Science, 51(1), 71–86.
Brodersen, M., & Manolova, P. (2008). Packaging Design as a Brand-building Tool.
Burhan Kılıç, Aydan Bekar, & Nisan Yozukmaz. (2021). The New Foodie Generation: Gen Z. Springer EBooks, 223–247.
Busetto, L., Wick, W., & Christoph Gumbinger. (2020). How to use and assess qualitative research methods. Neurological Research and Practice, 2(1).
Chein, T. S., Hui, O. T., & Lee, C. J. (2020). Factors Affecting Impulsive Buying Behaviour - Evidence from Malaysia. An International Journal, 12(2).
Chitturi, R., Londoño, J. C., & Henriquez, M. C. (2021). Visual design elements of product packaging: Implications for consumers' emotions, perceptions of quality, and price. Color Research and Application, 47(3), 729–744.
Cimory. (2021). Cimory.com. https://cimory.com/our-product.php
Clarity The Packaging Effectiveness Playbook | Packaging Testing. (2023). Cubery.com.
Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences (2nd ed.). Lawrence Erlbaum Associates.
Colman, A. M., Norris, C. E., & Preston, C. C. (1997). Comparing Rating Scales of Different Lengths: Equivalence of Scores From 5-Point and 7-Point Scales. ResearchGate; SAGE.
Cosmic Bliss | Creamy Organic Ice Cream - Plant-Based and Grass-Fed Dairy Sustainably Made Ice Cream. (2024). Cosmicbliss.com.
Cosper, A. (2022). How Symmetry on packaging influences aesthetic evaluation and purchase decisions. Desjardin.fr.
Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16(3), 297–334.
d'Astous, A., & Labrecque, J. (2021). The Impact of Responsible Food Packaging Perceptions on Naturalness and Healthiness Inferences, and Consumer Buying Intentions. Foods, 10(10), 2366–2366.
Dawadi, S., Shrestha, S., & Giri, R. A. (2021). Mixed-Methods Research: a Discussion on Its Types,

Challenges, and Criticisms. Journal of Practical Studies in Education, 2(2), 25–36.
Dillon, M. (2024a, February 26). How Does Product Packaging Impact Consumer Buying Behavior? Meyers.
Dillon, M. (2024b, February 26). How Does Product Packaging Impact Consumer Buying Behavior? Meyers.
Efron, B., & Tibshirani, R. J. (1995). An Introduction to the Bootstrap. Technometrics, 37(3), 341.
Ellington, R. (2023, April 26). How Gen Z shoppers are forging the future landscape of packaging. Packaging Gateway; Packaging Gateway.
Flannigan, S. (2022, March 27). The big guide to sustainable packaging. Sendle.com; Sendle.
Fornell, C., & Larcker, D. F. (1981a). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error - Claes Fornell, David F. Larcker, 1981. Journal of Marketing Research.
Fornell, C., & Larcker, D. F. (1981b). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error on JSTOR. Jstor.org.
FType. (2023, April 10). The Impact of Typography in Packaging Design. FactoryType.
Geisser, S. (1974). A predictive approach to the random effect model. Biometrika, 61(1), 101–107.
Goldring, D., & Azab, C. (2020). New rules of social media shopping: Personality differences of U.S. Gen Z versus Gen X market mavens. Journal of Consumer Behaviour, 20(4), 884–897.
Gordon, C. (2022, January 20). Little Habits Plant Based Organic Ice Cream Will Make Your Sweet Tooth Start Dreaming. DIELINE.
Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017, June 6). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). SAGE Publications Ltd.
Hair, J. F., Hult, T. M., Ringle, C. M., & Sarstedt, M. (2014). A Primer on Partial Least Squares Structural Equation Modeling. ResearchGate; Sage.
Hair, J. F., Ringle, C. M., & Sarstedt, M. (2014). PLS-SEM: Indeed a Silver Bullet. Journal of Marketing Theory and Practice.
Hassan, S. H. (2011). The Influence of Food Product Packaging Attributes in Purchase Decision: A Study Among Consumers in Penang, Malaysia. ResearchGate.
Henseler, J., Ringle, C. M., & Sarstedt, M. (2014). A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the Academy of Marketing Science, 43(1), 115–135.
Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The Use of Partial Least Squares Path Modeling in International Marketing. ResearchGate.
Honea, H., & Horsky, S. (2011). The power of plain: Intensifying product experience with neutral aesthetic context. Marketing Letters, 23(1), 223–235.
Huang, L., & Lu, J. (2015). (PDF) Eat with Your Eyes: Package Color Influences the Perceptions of Food Taste and Healthiness Moderated by External Eating. ResearchGate.
Joshi, A., Kale, S., Satish Chandel, & Dinesh Kumar Pal. (2015, January 10). Likert Scale: Explored and Explained. ResearchGate; Sciencedomain International.
Kotler, P., & Armstrong, G. (2017). Principles of Marketing. Pearson/Prentice-Hall.
Kotler, P., & Keller, K. L. (2016). A Framework for Marketing Management (6th ed.). Pearson.
Kovač, A. (2018). View of Consumers' preferences for visual elements on chocolate packaging | Journal of Graphic Engineering and Design. UNS.
Kovač, A., Kovačević, D., Bota, J., & Brozović, M. (2019). Consumers' preferences for visual elements on chocolate packaging. Journal of Graphic Engineering and Design, 10(1), 13–18.
Kovačević, D., Mešić, E., Užarević, J., & Brozović, M. (2022). The Influence of Packaging Visual Design on Consumer Food Product Choices. ResearchGate.
Liang, S., Qin, L., Zhang, M., Chu, Y., Teng, L., & He, L. (2022). Win Big with Small: The Influence of Organic Food Packaging Size on Purchase Intention. Foods, 11(16), 2494–2494.
Lin, W.-L. (2019). Study of Visual Packing Design, Perceived Quality, and Perceived Value of Organic Foods on Brand Preference of Young Chinese Consumers.
Lok, J. J., & Bosch, R. J. (2021). Causal Organic Indirect and Direct Effects: Closer to the Original Approach to Mediation Analysis, with a Product Method for Binary Mediators. Epidemiology, 32(3), 412–420.

Magnier, L., & Schoormans, J. (2015). Consumer reactions to sustainable packaging: The interplay of visual appearance, verbal claim and environmental concern. Journal of Environmental Psychology, 44, 53–62.
Mahavir Sehrawet, & Kundu, S. C. (2007). Buying behaviour of rural and urban consumers in India: The impact of packaging. ResearchGate; Wiley.
Make Way for Generation Z: Marketing to Today's Tweens and Teens Euromonitor International : Strategy Briefing. (2011).
Malhotra, N. K., & Dash, S. (2011). Marketing Research an Applied Orientation. London Pearson Publishing. - References - Scientific Research Publishing. Scirp.org.
Maltby, L. (2022, July 10). Lisa Maltby Illustration. Lisa Maltby Illustration.
Malterud, K., Siersma, D., & Guassora, A. D. (2016). Sample Size in Qualitative Interview Studies: Guided by Information Power - Kirsti Malterud, Volkert Dirk Siersma, Ann Dorrit Guassora, 2016. Qualitative Health Research.
Matell, M. S., & Jacoby, J. (1971). Is There an Optimal Number of Alternatives for Likert-Scale Items? Study I. ResearchGate; SAGE.
McCrindle, M., & Fell, A. (2020). Understanding the Impact of COVID-19 on the Emerging Generations. ResearchGate; McCrindle Research.
Merrell, A. (2003). Issue 2 Article 6 5-2003 Part of the Psychology Commons Recommended Citation Recommended Citation Merrell. Undergraduate Psychology Research Methods Journal Undergraduate Psychology Research Methods Journal, 1(2).
Michelle Santiago Cortés. (2020). Emma Chamberlain Talks Chamberlain Coffee's New Look & Products. Refinery29.com; Refinery29.
Monumento (2019). "OATSIDE". a Project by Monumento | Domestika. Domestika.
Mustafa, A. (2021, July 9). Product Packaging Photography: 5 Best Ways To Nail It. PixelPhant.
Mweshi, G. K., & Sakyi, K. (2020). Application of Sampling Methods for the Research Design. Archives of Business Research, 8(11), 180–193.
Nancarrow, C., Tiu Wright, L., & Brace, I. (1998). Gaining Competitive Advantage from Packaging and Labelling in Marketing Communications. British Food Journal, 100(2), 110–118.
NESTLE® Nesquik Minis – Mini Bites for Tastier Mornings! (2022). Nestle-Cereals.com.
News - How to Catch Gen Z's Attention with Colour Charms. (2024). Zhejiang Ukpack Packaging Co,.Ltd.
O'brien, R. M. (2007). A Caution Regarding Rules of Thumb for Variance Inflation Factors. Quality and Quantity, 41(5), 673–690.
Orth, U. R., & Malkewitz, K. (2016). Holistic Package Design and Consumer Brand Impressions - Ulrich R. Orth, Keven Malkewitz, 2008. Journal of Marketing.
Packshot Photography – A Complete Guide. (2022). Clipping Path Studio.
Patreau, V., Bernard, S., Leroux, J., Bellemare, M., & Morissette, J. (2023). Consumer interest and willingness to pay for in-bulk products with reusable packaging options. Frontiers in Sustainability, 4.
Perera, W., & Dissanayake, D. (2013). The Impact of Brand awareness, Brand Association and Brand Perceived Quality on Female consumers' Purchase Decision of Foreign Makeup Products.
Petter, S., Straub, D., & Rai, A. (2007). Specifying Formative Constructs in Information Systems Research on JSTOR. Jstor.org.
Phung, E. (2023). Layout Design: Getting to Know Its Principles & Why Is It So Important to Visual Designs. Socialectric.com.
PillsburyTM Ready to Bake! Bunny Shape Sugar Cookie Dough 20 Count. (2020). Pillsbury.com.
Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. Behavior Research Methods, Instruments & Computers/Behavior Research Methods, Instruments, & Computers, 36(4), 717–731.
Prendergast, G., & Pitt, L. (1996). Packaging, marketing, Logistics and the environment: Are There trade-offs? International Journal of Physical Distribution & Logistics Management, 26(6), 60–72.
Punjani, N. (2022). The Role and Impact of the Packaging Effect on Consumer Buying Behaviour.

Rathod, K. (2023). Purchasing Decisions in Terms of Perceived Quality and Product Knowledge towards Electrical Products. 11(06), 1732–1736.
Rebollar, R., Iván Lidón, Javier Montero Martín, & Puebla, M. P. (2015). The identification of viewing patterns of chocolate snack packages using eye-tracking techniques. Food Quality and Preference, 39, 251–258.
Rettie, R., & Brewer, C. (2000, February). The verbal and visual components of package design. ResearchGate; Emerald.
Rundh, B. (2009). Packaging design: Creating Competitive Advantage with Product Packaging. British Food Journal, 111(9), 988–1002.
S.T. Wang, E. (2013). The influence of visual packaging design on perceived food product quality, value, and brand preference. International Journal of Retail & Distribution Management, 41(10), 805–816.
Salvioli, A. (2021, March). Illustration in packaging design - Alice S. Alice S.
Santos, K. da S., Ribeiro, M. C., Queiroga, D. E. U. de, Silva, I. A. P. da, & Ferreira, S. M. S. (2020). The use of multiple triangulations as a validation strategy in a qualitative study. Ciência & Saúde Coletiva, 25(2), 655–664.
Seemiller, C., & Grace, M. (2018). Generation Z : A Century in the Making. Taylor & Francis Group.
Selya, A. S., Rose, J. S., Dierker, L. C., Hedeker, D., & Mermelstein, R. J. (2012). A Practical Guide to Calculating Cohen's f2, a Measure of Local Effect Size, from PROC MIXED. Frontiers in Psychology, 3.
Seung, Roberts, K., Swanson, I., & Hankinson, A. (2017). Evidence-Based Survey Design: The Use of a Midpoint on the Likert Scale. Performance Improvement, 56(10), 15–23.
Shape Matters: How Packaging Can Influence Purchase Choices - MSI - Marketing Science Institute. (2021, April 11). MSI - Marketing Science Institute.
Silayoi, P., & Speece, M. (2007). The Importance of Packaging attributes: a Conjoint Analysis Approach. European Journal of Marketing, 41(11/12), 1495–1517.
Silayoi, P., & Speece, M. (2023). Packaging and purchase decisions: An exploratory study on the impact of involvement level and time pressure | Emerald Insight. British Food Journal, 106(8), 607–628.
Stone, M. (1974). Cross-validation and multinomial prediction. Biometrika, 61(3), 509–515.
Su, J., & Wang, S. (2024). Influence of food packaging color and foods type on consumer purchase intention: the mediating role of perceived fluency. Frontiers in Nutrition, 10.
Sudirjo, F., Luckhy, N., Lotte, Nyoman, I., Sutaguna, T., Risdwiyanto, A., & Yusuf, M. (2023). Profit: Jurnal Manajemen. Bisnis Dan Akuntansi, 2(2), 110–126.
Suliyanto, D. M. H. (2024). View of the Effect of Consumer Ethnocentrism, Brand Image, and Perceived Quality,on Purchase Decisions with Purchase Intention as Intervening Variable. Unsoed.ac.id.
Sung, I. (2021). Interdisciplinary Literaure Analysis between Cosmetic Container Design and Customer Purchasing Intention. 12(3), 21–29.
Swasty, N. W., & Mustafa, N. M. (2023). Using Multiple Case Studies to Examine the Role of Colours in SME Food Packaging. Wacana Seni Journal of Arts Discourse, 22.
Taber, K. S. (2017). The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education. Research in Science Education, 48(6), 1273–1296.
Tavakol, M., & Dennick, R. (2011). Making Sense of Cronbach's Alpha. ResearchGate; International Journal of Medical Education.
Tenenhaus, M., Esposito, V., Yves-Marie CHATELIN, & Lauro, C. (2008). PLS path modelling'. ResearchGate; Elsevier BV.
The Environmental Impact of Food Packaging. (2024). FoodPrint; FoodPrint.
Tiara, L., Nurfadilah, D., Agustina, L., & Nelloh, M. (2022). Does Graphic Design Elements on Product Packaging Affect Gen Z's Buying Decisions? Evidence from Wellness Products. REVISTA DEL CICLO ECONOMICO. THE JOURNAL OF BUSINESS CYCLES.
Trochim, W. M. (2007). The Research Methods Knowledge Base. ResearchGate; unknown.
Underwood, R. L. (2003). The Communicative Power of Product Packaging: Creating Brand

Identity via Lived and Mediated Experience. Journal of Marketing Theory and Practice, 11(1), 62–76.
Underwood, R. L., & Klein, N. M. (2015). Packaging as Brand Communication: Effects of Product Pictures on Consumer Responses to the Package and Brand. Journal of Marketing Theory and Practice.
Underwood, R. L., Klein, N. M., & Burke, R. R. (2019). Packaging communication: attentional effects of product imagery | Emerald Insight. Journal of Product & Brand Management, 10(7), 403–422.
Underwood, R. L., & Ozanne, J. L. (2010). Is your package an effective communicator? A normative framework for increasing the communicative competence of packaging. Journal of Marketing Communications.
Valajoozi, M. R., & Zangi, N. O. (2016). A Review on Visual Criteria of Pure Milk Packaging for Parents and Their Children (case study: Tehran, Iran). British Food Journal, 118(1), 83–99.
van Rijnsoever, F. J. (2017). (I Can't Get No) Saturation: a Simulation and Guidelines for Sample Sizes in Qualitative Research. PloS One, 12(7), e0181689–e0181689.
van Teijlingen, E., & Hundley, V. (2002). The importance of pilot studies. Nursing Standard, 16(40), 33–36.
VanderWeele, T. J. (2016). Mediation Analysis: A Practitioner's Guide. Annual Review of Public Health, 37(1), 17–32.
Vyas, H., & V, B. (2015). Packaging Design Elements & Users Perception 95 Packaging Design Elements and Users Perception: A Context in Fashion Branding and Communication.
Wang, H., Aziz, A., & Liu, C. (2023). Impact of Snack Food Packaging Design Characteristics on Consumer Purchase Decisions. SAGE Open, 13(2).
Wang, R., & Chen, W.-C. (2007). The Study on Packaging Illustration Affect on Buying Emotion.
Weinberg, P., & Gottwald, W. (1982). Impulsive consumer buying as a result of emotions. Journal of Business Research, 10(1), 43–57.
Wells, L. E., Farley, H., & Armstrong, G. A. (2007). The importance of packaging design for own-label food brands. ResearchGate; Emerald.
Wetzels, M., Odekerken-Schröder, G., & Oppen, C. van. (2009). Using PLS Path Modeling for Assessing Hierarchical Construct Models: Guidelines and Empirical Illustration on JSTOR. Jstor.org.
Williams, K. C., & Page, R. A. (2011). Marketing to the Generations. ResearchGate.
Wood, S. (2013). Generation Z as Consumers: Trends and Innovation.
Yamane, T. (1967). Statistics: An introductory analysis (2nd ed.). Harper & Row.
Yogesh, F. (2014). Effect of Social Media on Purchase Decision. Pacific Business Review International, 6(11), 45–51.
Zana Azeez Kakarash. (2023, January 7). Why is data validation important in research? ResearchGate.
Zoltán Szakály, Viktória Szente, György Kövér, & Szigeti, O. (2011, November 15). The influence of lifestyle on health behavior and preference for functional foods. ResearchGate; Elsevier BV.
Zuo, Y., Zhang, K., Xu, S., Law, R., Qiu, Q., & Zhang, M. (2022). What kind of food can win Gen Z's favor? A mixed methods study from China. Food Quality and Preference, 98, 104522–104522.