

The Intervening Role of Knowledge and Perceived Value in Relationship of Product Packaging and Purchase Intention

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Abstract

Purpose: This study examines the mediating roles of knowledge and perceived value in the relationship between product packaging and purchase intention within Indonesia's creative economy and business sustainability.

Research Methodology: A quantitative cross-sectional survey using SEM-PLS (WarpPLS 8.0) involved 150 consumers in Palembang, Indonesia, who purchased packaged products between February and April 2025. The measurement model demonstrated adequate reliability and validity.

Results: Product packaging significantly influenced knowledge ($\beta = 0.553$, $p < 0.001$), perceived value ($\beta = 0.576$, $p < 0.001$), and purchase intention ($\beta = 0.279$, $p = 0.008$). Perceived value significantly increased purchase intention ($\beta = 0.519$, $p < 0.001$), whereas knowledge showed no significant direct effect ($\beta = 0.057$, $p = 0.318$). The combined indirect effect was significant ($\beta = 0.330$, $p = 0.002$), and the model explained 57.5% of the variance in purchase intention ($R^2 = 0.575$).

Conclusions: Perceived value is a stronger mediator than knowledge, suggesting that value-oriented packaging strategies are more effective than information-based approaches in encouraging purchase intention.

Limitations: The study is limited to consumers in Palembang and uses a cross-sectional design, limiting causal inference and broader generalization.

Contributions: This study extends the Stimulus Organism Response (SOR) framework by clarifying the distinct mediating roles of knowledge and perceived value while providing practical implications for packaging strategies in Indonesia's creative economy.

Keywords: *Creative Economy, Knowledge, Perceived Value, Product Packaging, Purchase Intention*

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1. Introduction

In contemporary competitive markets, product packaging has transcended its traditional function as a product protector to become a strategic marketing tool that significantly influences consumer behavior ([Nanos et al., 2025](#)). Packaging serves as the first physical point of contact between consumers and a product, and often determines whether a product attracts attention on busy retail store shelves or in online marketplaces ([Nadi & Wasesa, 2024](#)). The visual elements and information on packaging, including color, materials, design, and printed information, collectively shape consumer perceptions and ultimately influence purchasing decisions ([Nanos et al., 2025](#)).

Indonesia's e-commerce sector has experienced exponential growth, making packaging a critical differentiator in digital markets where physical product inspection is impossible ([Nadi & Wasesa, 2024](#)). Sustainable packaging materials and recycling systems have emerged as consumer priorities, while the relationship between packaging attributes and purchase intentions remains complex and multifaceted. The creative economy framework, in which packaging design is a central component, has been recognized as a driver of business sustainability strategy in the Indonesian context ([Rezeki & Nugroho, 2026](#)). Understanding how packaging influences consumer decision-making is therefore strategically significant for businesses operating in this environment.

Although the importance of packaging has been recognized in the marketing literature, several gaps persist in understanding its influence on consumer behavior. First, although previous research has established a direct relationship between packaging and purchase intentions, the mediating mechanisms through which packaging exerts its influence require further investigation. Second, the parallel mediating roles of knowledge and perceived value remain underexplored, particularly in the Indonesian context, where consumer behavior patterns may differ from those in Western markets. Third, empirical evidence regarding whether consumer knowledge about a product translates into purchase intentions remains inconclusive. Some studies indicate that information printed on packaging influences purchase decisions ([Nanos et al., 2025](#)), while others indicate that consumers primarily attend to basic product information, with limited attention to detailed specifications ([Tang et al., 2025](#)). These inconsistencies warrant further examination of knowledge as a potential mediator.

The objectives of this study are to analyze the direct effect of product packaging on knowledge, perceived value, and purchase intention; to examine the direct effect of knowledge and perceived value on purchase intention; and to evaluate the mediating role of knowledge and perceived value in the relationship between product packaging and purchase intention.

This study is grounded in the Stimulus-Organism-Response (SOR) theory, which posits that environmental Stimuli (S) influence an Organism's internal state (O), which in turn shapes behavioral Responses (R). Within this framework, product packaging serves as the external stimulus, knowledge and perceived value represent the organism's internal psychological states, and purchase intention represents the behavioral response. This theoretical foundation aligns with prior applications of SOR theory in consumer behavior research examining how external cues influence internal psychological processes and subsequent behavioral outcomes ([Wang & Guo, 2025](#); [Thuannadee & Praneetpholkrang, 2026](#)).

This study addresses the following research questions:

- RQ₁*: Does product packaging significantly influence knowledge, perceived value, and purchase intention?
- RQ₂*: Do knowledge and perceived value significantly influence purchase intention?
- RQ₃*: Do knowledge and perceived value mediate the relationship between product packaging and purchase intention?

2. Literature Review and Hypotheses Development

2.1 Product Packaging

Product packaging, as a component of the creative economy, encompasses the design, material, and information elements that enclose a product. Previous research has identified several key dimensions of packaging that influence consumer behavior: color, material, design, innovation, and printed information ([Nanos, Papadopoulos, Oikonomou, Kotzaivazoglou, & Fragidis, 2025](#)). Packaging color serves as a brand recognition cue, while material quality influences perceived product quality. Design elements create aesthetic appeal and communicate brand positioning, while innovation, including reusability and eco-friendly features, responds to consumers' growing environmental awareness ([Geissdoerfer, Savaget, Bocken, & Hultink, 2017](#)).

Studies have shown that packaging color, material, design, and innovation positively influence consumer behavioral intentions ([Nanos et al., 2025](#)). Recent systematic reviews further confirm that packaging design dimensions consistently shape purchase intention across product categories and cultural contexts by [Liu, Samsudin, and Zou \(2025\)](#), while the Stimulus-Organism-Response framework has increasingly been used to explain how packaging-related stimuli translate into consumer responses ([Kıymalıoğlu, Dirlik, & Akar, 2024](#)). Similarly, packaging attributes such as design, material, and printed information have been shown to significantly affect purchase intention in emerging markets by [Rahimi, Hasnat, Rana, Mishad, Talukder, Arman, and Hasan \(2025\)](#), and ethically oriented packaging practices have been found to enhance consumer legitimacy perceptions through green perceived value ([Amani, 2024](#)). However, the effect of printed information appears less consistent: although consumers perceive information as important, it does not always significantly predict purchase intentions ([Tang, Liang, Liu, Shen, & Liu, 2025](#)). This inconsistency suggests that the relationship between packaging and consumer outcomes may be mediated by other psychological variables, such as knowledge and perceived value.

Packaging also plays a critical role in the context of sustainable business strategy. [Nadi and Wasesa \(2024\)](#) found that Indonesian consumers' preferences for sustainable packaging significantly influence their purchase decisions in e-commerce settings, highlighting the intersection of packaging design and environmental consciousness in contemporary markets. [Izati and Permadi \(2026\)](#) similarly demonstrated that product packaging directly influences repurchase intention, with consumer satisfaction serving as a key bridge between these variables. Within the Indonesian context specifically, packaging design has been shown to influence purchase intention through perceived quality, packaging aesthetics have been found to shape purchase intention among Indonesian millennial consumers, and packaging innovation has been linked to consumer behavior in the food industry, collectively reinforcing packaging's role as a strategic marketing instrument ([Srivastava, Ramakanth, Akhila, & Bhatt, 2022](#)).

2.2 Purchase Intention

Purchase intention represents a consumer's conscious plan to purchase a product and the effort expended toward that goal ([Munir & Watts, 2025](#)). It is a key predictor of actual purchase behavior and one of the most commonly studied dependent variables in consumer research. Purchase intention is influenced by various factors, including brand awareness, perceived value, and external stimuli such as packaging and social media endorsements ([Munir & Watts, 2025](#)). In the packaging research context, purchase intention serves as the primary behavioral outcome that marketers seek to influence through packaging design and strategy.

Research consistently shows that both functional and emotional packaging attributes shape purchase intention across various product categories and market contexts ([Rezeki & Nugroho, 2026](#)). Beyond visual packaging cues, the way product information is communicated also matters: interpretive food labels have been shown to influence purchase intention through their effect on consumer attitudes by [Zafar, Shi, Yang, Abbas, and Chen \(2022\)](#), and short-form video stimuli processed through the

SOR framework similarly drive purchase intention in furniture and livestreaming contexts ([Yu, Zhang, Zheng, Chu, Chen, & Chen, 2024](#)). The growing importance of digital commerce has further amplified the role of packaging as a visual signal, given that consumers cannot physically inspect products before purchase ([Nadi & Wasesa, 2024](#)).

2.3 Knowledge

Consumer knowledge refers to the information and understanding consumers possess about a product, brand, and the purchase context, including product attributes, usage methods, and quality indicators. Packaging serves as an important source of such knowledge, conveying product details through printed labels, QR codes, and visual elements ([Nanos, Papadopoulos, Oikonomou, Kotzaivazoglou, & Fragidis, 2025](#)). However, research shows that consumers do not process all available information equally; expiration dates, product names, and ingredients receive primary attention, while additional information such as manufacturer details and origin information often goes unnoticed ([Tang, Liang, Liu, Shen, & Liu, 2025](#)).

From a theoretical standpoint, the elaboration likelihood model suggests that consumer knowledge processing depends on both motivation and ability. Consistent with this, product knowledge has been found to operate as a stimulus that shapes consumers' perceived value and emotional responses prior to purchase decisions by [Wang, Wang, Han, and Cho \(2024\)](#), while brand knowledge has been shown to influence purchase intention through a serial mediation pathway involving perceived value and trust ([Ling, Zheng, & Cho, 2023](#)). When consumers have high involvement with a product category, they are more likely to process detailed packaging information centrally, leading to knowledge formation that influences decisions. In low-involvement contexts, however, peripheral cues such as design aesthetics and packaging quality may dominate the decision process, diminishing the role of knowledge ([Yeni & Wahap, 2024](#)).

2.4 Perceived Value

Perceived value represents consumers' overall assessment of a product's usefulness based on their perceptions of what they receive relative to what they give ([Munir, & Watts, 2025](#); [Zeithaml, 1988](#)). Perceived value is a multidimensional construct encompassing functional value (quality relative to price), emotional value (feelings associated with the product), and social value (impressions on others). Perceived value has been established as a strong predictor of purchase intention across various contexts, including online shopping, food delivery services, and traditional retail ([Wang, & Guo, 2025](#); [Thuannadee, & Praneetpholkrang, 2026](#)). Similarly, in the beverage food sector, perceived quality and perceived packaging have been shown to significantly shape consumers' repurchase intention, reinforcing perceived value as a central mechanism linking product attributes to behavioral outcomes ([Sharif, Rehman, Ahmad, Albadry, & Zeeshan, 2024](#)).

Research consistently shows that perceived value mediates the relationship between various antecedents and purchase intention. [Munir and Watts \(2025\)](#) demonstrated that social media influencer endorsements influence purchase intention through perceived value, while [Wang and Guo \(2025\)](#) found that word-of-mouth recommendations influence online purchase intention through perceived value as a chain mediator. In the context of sustainable and responsible packaging, perceived value has likewise been identified as a key driver of purchase intention by [Meena, Poondla, Nikhade, and Krishna \(2025\)](#), and consumer knowledge and trust have been found to moderate this value-driven pathway toward purchase intention within an S-O-R framework ([Arslan, 2025](#)). Emotional responses arising from environmental stimuli have also been shown to mediate the link between perceived value and purchase intention in digital consumption settings ([Gao, Chen, Gao, & Yu, 2022](#)). [Tang, Liang, Liu, Shen, and Liu \(2025\)](#) showed that packaging images in livestreaming contexts influence consumer repurchase intention through perceived value and trust, further substantiating the central role of value perception in packaging-related research.

2.5 Hypothesis Development

2.5.1 Product Packaging and Knowledge

Packaging serves as an information delivery mechanism, communicating product attributes, brand identity, and usage information to consumers. Information printed on packaging labels, including ingredients, nutritional content, and product origin, contributes to the formation of consumer knowledge ([Nanos et al., 2025](#)). Well-designed packaging that presents information clearly should enhance consumer knowledge about the product. Therefore the hypothesis is:

H₁: Product packaging has a positive and significant influence on knowledge

2.5.2 Product Packaging and Perceived Value

Packaging influences perceived value through multiple channels. High-quality packaging materials signal product quality, enhancing functional value. Attractive design and innovative features generate positive emotional responses, contributing to emotional value ([Nadi & Wasesa, 2024](#)). Additionally, packaging that communicates exclusivity or premium positioning can enhance social value. [Tang et al. \(2025\)](#) demonstrated that packaging images enhance consumers' perceived value and repurchase intentions. Even reduced design complexity can shape value perceptions, as simplified packaging has been found to signal product purity and increase consumers' willingness to pay ([Ton et al., 2024](#)). Therefore the hypothesis is:

H₂: Product packaging has a positive and significant influence on perceived value

2.5.3 Product Packaging and Purchase Intention

The direct influence of packaging on purchase intention has been documented across various studies ([Nanos et al., 2025](#); [Nadi & Wasesa, 2024](#)). This direct relationship is further supported by recent evidence showing that visual, textual, and material packaging cues significantly predict purchase intention through structural equation modeling ([Rahimi et al., 2025](#); [Khan et al., 2025](#)). Visual appeal and informational content of packaging can trigger an immediate purchase response, regardless of intermediary variables. [Izati and Permadi \(2026\)](#) confirmed that product packaging directly influences repurchase intention in the Indonesian market. Therefore the hypothesis is:

H₃: Product packaging has a positive and significant influence on purchase intention

2.5.4 Knowledge and Purchase Intention

Knowledge and Purchase Intention (*H₄*). The relationship between knowledge and purchase intention is grounded in the information processing model of consumer behavior. Consumers with greater product knowledge should be better equipped to evaluate product attributes and make informed purchase decisions. However, empirical evidence on this relationship is mixed, as some studies find that although consumers consider packaging information important, it does not consistently predict purchase intention ([Tang et al., 2025](#)). Therefore the hypothesis is:

H₄: Knowledge has a positive and significant influence on purchase intention

2.5.5 Perceived Value and Purchase Intention

Perceived value has been consistently identified as one of the strongest predictors of purchase intention across the consumer behavior literature ([Munir & Watts, 2025](#); [Wang & Guo, 2025](#); [Thuannadee & Praneetpholkrang, 2026](#)). This is consistent with broader evidence that information-processing routes, whether central or peripheral, ultimately shape purchase intention through their effect on perceived value ([Yang et al., 2022](#)). When consumers perceive high value in a product, whether through a favorable quality price relationship, emotional benefits, or social signals, they are significantly more likely to intend to purchase it. Therefore the hypothesis is:

H₅: Perceived value has a positive and significant influence on purchase intention

2.5.6 The Mediating Role of Knowledge and Perceived Value

Based on the SOR theoretical framework, packaging (the stimulus) should influence purchase intention (the response) through internal psychological states (the organism), specifically knowledge and perceived value. Previous research has established perceived value as a significant mediator between packaging or external stimuli and behavioral outcomes ([Tang et al., 2025](#); [Munir & Watts, 2025](#)). However, the mediating roles of knowledge and perceived value may differ substantially: perceived value, as an evaluative-affective state, is expected to constitute a stronger mediating pathway than knowledge, which operates through cognitive-informational processing. Therefore the hypothesis is:

H_{6a}: Knowledge mediates the relationship between product packaging and purchase intention

H_{6b}: Perceived value mediates the relationship between product packaging and purchase intention

3. Research Methodology

3.1 Research Design

This study employed a quantitative, cross-sectional design with survey methodology. Causal relationships between variables were examined using Structural Equation Modeling with Partial Least Squares (PLS-SEM) analyzed through WarpPLS 8.0 software ([Kock, 2020](#)). The choice of PLS-SEM was appropriate given the predictive orientation of the study and the complex mediation pathways specified in the theoretical model ([Hair et al., 2021](#); [Sarstedt et al., 2021](#); [Hair et al., 2019](#)). This approach is well established in consumer behavior research, having been successfully applied across diverse consumer behavior contexts including online purchase intention, sustainable consumption, and packaging-related decision-making ([Rahimi et al., 2025](#); [Liu et al., 2025](#)). WarpPLS is particularly suited for this study as it provides a comprehensive set of model fit indices alongside path coefficient estimation, enabling both explanatory and predictive assessments of the structural model ([Cheah & Hair, 2025](#)).

3.2 Population, Sample, and Data Collection

The target population consisted of consumers residing in Palembang, Indonesia, who had purchased packaged consumer goods within the previous three months. Data were collected between February and April 2025 using purposive sampling. The inclusion criteria required respondents to be at least 18 years of age and to have made at least one packaged product purchase within the specified period. A total of 150 valid responses were obtained, exceeding the minimum sample size requirement for PLS-SEM analysis by [Hair, Hult, Ringle, and Sarstedt \(2021\)](#), consistent with recommended sampling adequacy guidelines for survey-based business research ([Sekaran & Bougie, 2019](#)). Data were collected through a structured online questionnaire distributed via Google Forms and shared through social media channels and direct messaging platforms.

3.3 Variables and Measurement

Four latent variables were operationalized in this study, each measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The indicators for each construct were adapted from validated instruments in prior literature, as described below.

Product Packaging (X_1) was measured using five indicators adapted from [Nanos et al. \(2025\)](#) and [Nadi and Wasesa \(2024\)](#): Packaging color is visually attractive, packaging material conveys good product quality, packaging design is aesthetically pleasing, packaging innovation reflects environmental responsibility, and information printed on packaging is clear and complete.

Knowledge (M1) was measured using five indicators adapted from [Tang et al. \(2025\)](#): I understand the product's key ingredients from the packaging, I know the product's usage method from the packaging, I can identify the product's quality level based on its packaging, packaging information helps me compare this product with alternatives, and I am familiar with this brand based on its packaging.

Perceived Value (M_2) was measured using five indicators adapted from [Munir and Watts \(2025\)](#) and [Zeithaml \(1988\)](#): This product offers good value for its price, purchasing this product makes me feel good, this product's packaging reflects quality worth paying for, this product is associated with a positive social image, and overall, this product provides excellent value.

Purchase Intention (Y_I) was measured using five indicators adapted from [Munir and Watts \(2025\)](#): (1) I intend to purchase this product in the near future; (2) I would recommend this product to others; (3) I would choose this product over competing brands; (4) I am likely to make a repeat purchase of this product; and (5) I plan to purchase this product the next time I need a similar product.

3.4 Data Analysis Procedure

Data analysis followed a two-step PLS-SEM approach: evaluation of the measurement model (outer model) followed by evaluation of the structural model (inner model), consistent with [Hair et al. \(2021\)](#), [Sarstedt et al. \(2021\)](#), and [Ramayah et al. \(2018\)](#). The measurement model was assessed using the following criteria:

1. Internal consistency: Cronbach's Alpha (threshold > 0.60) and CR (threshold > 0.70).
2. Convergent validity: Outer loadings (threshold > 0.50) and (AVE > 0.50).
3. Discriminant validity: Cross-loading analysis, the Fornell-Larcker criterion (square root of AVE $>$ inter-construct correlation), and the Heterotrait-Monotrait (HTMT) ratio (threshold < 0.85).

The structural model was evaluated using path coefficients (β), p-values, and the coefficient of determination (R^2). Mediation was assessed through indirect effects with bootstrapping (5,000 resamples). Model fit was assessed using WarpPLS goodness-of-fit indices including APC, ARS, AARS, AFVIF, Tenenhaus GoF, and SRMR.

4. Results and Discussions

4.1 Measurement Model Evaluation

4.1.1 Internal Consistency

Table 1 presents the reliability and validity metrics for all constructs. All values meet or exceed the recommended thresholds, confirming satisfactory internal consistency.

Table 1. Measurement Model: Reliability and Validity

Construct	Cronbach Alpha	Composite Reliability	AVE	Square Root of AVE
Product Packaging (X_I)	0.808	0.867	0.569	0.754
Knowledge (M_I)	0.752	0.838	0.534	0.731
Perceived Value (M_2)	0.779	0.851	0.588	0.767
Purchase Intention (Y_I)	0.720	0.827	0.614	0.784

Table 1 show the Cronbach's Alpha values ranged from 0.720 to 0.808, exceeding the 0.60 threshold. Composite Reliability values ranged from 0.827 to 0.867, exceeding the 0.70 threshold. AVE values ranged from 0.534 to 0.614, all exceeding 0.50, confirming that each construct explains more than half of the variance in its indicators.

4.1.2 Convergent Validity

The convergent validity assessment demonstrates that all measurement indicators satisfied the recommended criteria for construct validity. Specifically, all outer loading values exceeded the minimum acceptable threshold of 0.50, ranging from 0.556 to 0.861, indicating that each indicator contributed adequately to representing its respective latent construct. Although several indicators exhibited moderate loading values, they remained within the acceptable range for exploratory and social science research, thereby supporting their retention in the measurement model. Furthermore, the Average Variance Extracted (AVE) values for all constructs ranged from 0.534 to 0.614, consistently exceeding the recommended threshold of 0.50. These findings indicate that each

construct explains more than 50% of the variance of its indicators, confirming satisfactory convergent validity and demonstrating that the latent variables possess sufficient explanatory power to capture the intended theoretical concepts. Collectively, the outer loading and AVE results provide robust empirical evidence that the measurement model exhibits adequate convergent validity and is suitable for subsequent structural model evaluation.

4.1.3 Discriminant Validity

Table 2 presents the Fornell-Larcker criterion matrix. The diagonal elements (square root of AVE) exceed all corresponding off-diagonal inter-construct correlations, confirming discriminant validity.

Table 2. Fornell-Larcker Criterion Matrix

	X_I	M_I	M_2	Y_I
Product Packaging (X_I)	0.754			
Knowledge (M_I)	0.553	0.731		
Perceived Value (M_2)	0.576	0.421	0.767	
Purchase Intention (Y_I)	0.472	0.318	0.589	0.784

Table 2 presents the results of the Fornell-Larcker criterion for discriminant validity. The diagonal values (0.731–0.784), representing the square roots of the AVE, are higher than the corresponding inter-construct correlations, indicating that each construct demonstrates adequate discriminant validity. These findings confirm that Product Packaging, Knowledge, Perceived Value, and Purchase Intention are empirically distinct constructs and are appropriate for further structural model analysis.

Table 3 presents the HTMT ratio matrix. All HTMT values fall below the 0.85 threshold, providing additional confirmation of discriminant validity in accordance with current PLS-SEM best practices (Hair et al., 2021). The HTMT values ranged from 0.371 to 0.672, all below the recommended threshold of 0.85. These findings confirm that the constructs are empirically distinct and satisfy the discriminant validity requirement, indicating that the measurement model is appropriate for further structural model analysis.

Table 3. Heterotrait-Monotrait (HTMT) Ratio Matrix

	X_I	M_I	M_2	Y_I
Product Packaging (X_I)	—			
Knowledge (M_I)	0.621	—		
Perceived Value (M_2)	0.643	0.489	—	
Purchase Intention (Y_I)	0.538	0.371	0.672	—

4.2 Structural Model Evaluation

4.2.1 Path Coefficients and Hypothesis Testing

Table 4 presents the direct effect hypothesis testing results. Path coefficients, standard errors, and p-values are reported. Four of the five proposed hypotheses were supported, while one hypothesis was not supported. Product Packaging significantly influenced Knowledge, Perceived Value, and Purchase Intention, whereas Perceived Value had a significant positive effect on Purchase Intention. In contrast, Knowledge did not have a significant direct effect on Purchase Intention.

Table 4. Direct Effects Hypothesis Testing Results

Hypotheses	Path	Beta Estimate	p-value	Result
H_1	$X_I \rightarrow M_I$	0.553	< 0.001	Significant
H_2	$X_I \rightarrow M_2$	0.576	< 0.001	Significant
H_3	$X_I \rightarrow Y_I$	0.279	0.008	Significant
H_4	$M_I \rightarrow Y_I$	0.057	0.318	Not Significant

Hypotheses	Path	Beta Estimate	p-value	Result
H_5	$M_2 \rightarrow Y_1$	0.519	< 0.001	Significant

4.2.2 Structural Equations

The estimated structural equations are Formula 1 Formula 2 Formula 3 :

$$M1 = 0.553X1 + e1, R^2 = 0.284 \quad (1)$$

$$M2 = 0.576X1 + e2, R^2 = 0.332 \quad (2)$$

$$Y1 = 0.279X1 + 0.057M1 + 0.519M2 + e3, R^2 = 0.575 \quad (3)$$

The R^2 value of 0.575 indicates that product packaging, knowledge, and perceived value together explain 57.5% of the variance in purchase intention, reflecting substantial explanatory power (Hair, Hult, Ringle, & Sarstedt, 2021).

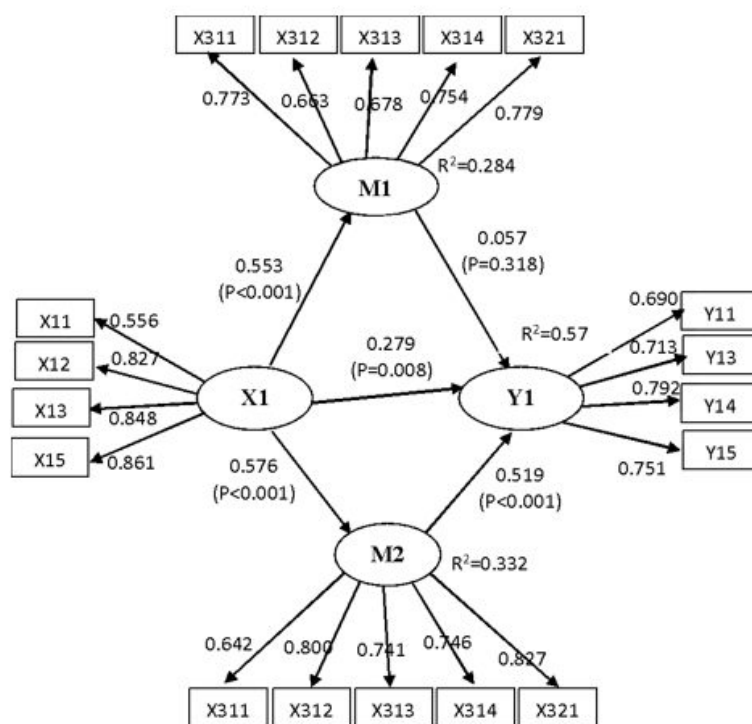


Figure 1. The Relationship Path among the Constructs with Mediation Variables.

Figure 1 presents the path diagram of the structural model, illustrating the relationships between constructs and their corresponding standardized path coefficients. Figure 1 illustrates the final structural model estimated using SEM-PLS. The model shows that Product Packaging positively and significantly influences Knowledge ($\beta = 0.553$, $p < 0.001$), Perceived Value ($\beta = 0.576$, $p < 0.001$), and Purchase Intention ($\beta = 0.279$, $p = 0.008$). Perceived Value also has a significant positive effect on Purchase Intention ($\beta = 0.519$, $p < 0.001$), whereas the direct effect of Knowledge on Purchase Intention is not significant ($\beta = 0.057$, $p = 0.318$). The model explains 28.4% of the variance in Knowledge ($R^2 = 0.284$), 33.2% of the variance in Perceived Value ($R^2 = 0.332$), and

57.0% of the variance in Purchase Intention ($R^2 = 0.570$), indicating a moderate level of explanatory power.

4.2.3 Mediation Analysis

Table 5 presents the indirect effect of product packaging on purchase intention through knowledge and perceived value.

Table 5. Results of the Indirect Effect (Mediation) Hypothesis Testing

Hypotheses	Path	Beta Estimate	p-value	Result
H_{6a}	$X_1 \rightarrow M_1 \rightarrow Y_1$	0.032	0.318	Not Significant
H_{6b}	$X_1 \rightarrow M_2 \rightarrow Y_1$	0.299	< 0.001	Significant
H_6 (Total)	$X_1 \rightarrow M_1 \& M_2 \rightarrow Y_1$	0.330	0.002	Significant

Table 5 presents the decomposed indirect effects of product packaging on purchase intention through each mediating pathway. The indirect effect through perceived value (H_{6b} : $\beta = 0.576 \times 0.519 = 0.299$, $p < 0.001$) is significant and constitutes the dominant mediating pathway, confirming that packaging stimuli translate into purchase behavioral responses primarily through value evaluation. In contrast, the indirect effect through knowledge (H_{6a} : $\beta = 0.553 \times 0.057 = 0.032$, $p = 0.318$) is non-significant, as its constituent direct path from knowledge to purchase intention failed to reach significance. The significant total indirect effect ($\beta = 0.330$, $p = 0.002$) confirms overall mediation, supporting H_6 .

4.2.4 Model Fit Evaluation

Model fit was assessed using WarpPLS 8.0 goodness-of-fit indices. The Average Path Coefficient (APC = 0.397, $p < 0.001$), Average R-squared (ARS = 0.397, $p < 0.001$), and Average Adjusted R-squared (AARS = 0.388, $p < 0.001$) all achieved statistical significance, indicating adequate model fit. The Average Full Collinearity VIF (AFVIF = 4.425) was acceptable, falling below the 5.0 threshold. The Tenenhaus GoF index of 0.688 exceeded the large effect size threshold of 0.36, indicating strong overall model fit. The SRMR of 0.080 and SMAR of 0.063 both met the respective acceptance criteria, providing convergent support for model adequacy.

4.3 Discussion

4.3.1 Direct Effect of Product Packaging on Knowledge (H_1)

The significant positive effect of product packaging on knowledge ($\beta = 0.553$, $p < 0.001$) confirms that well-designed packaging effectively communicates information to consumers, supporting H_1 . This effect size is substantial, indicating that packaging is among the most influential factors shaping consumer knowledge. This finding aligns with [Nanos et al. \(2025\)](#), who established that packaging elements, particularly color, design, and printed information, collectively serve as knowledge-building signals for consumers. The strength of this relationship in the Indonesian context suggests that local consumers are attentive to the informational content of packaging, even in digitally mediated purchase environments ([Nadi & Wasesa, 2024](#)). From an SOR perspective, packaging as a stimulus activates a cognitive internal state, demonstrating the effectiveness of the information transfer mechanism proposed in the theoretical framework.

4.3.2 Direct Effect of Product Packaging on Perceived Value (H_2)

The significant positive effect of product packaging on perceived value ($\beta = 0.576$, $p < 0.001$) represents the strongest direct relationship in the model, supporting H_2 . Consumers interpret packaging quality, design aesthetics, and material choice as indicators of underlying product value, consistent with the value-signaling function of packaging documented by [Tang et al. \(2025\)](#) and [Munir and Watts \(2025\)](#). The magnitude of this effect, which exceeds the packaging-knowledge pathway, indicates that consumers' affective and evaluative responses to packaging are stronger than their cognitive-informational responses. This finding has important implications for packaging investment decisions, favoring aesthetic and material quality over informational complexity.

4.3.3 Direct Effect of Product Packaging on Purchase Intention (H_3)

The significant direct effect of product packaging on purchase intention ($\beta = 0.279$, $p = 0.008$) confirms that packaging influences behavioral intentions beyond its mediation pathways, supporting H_3 . Although this direct effect is smaller than the effects on knowledge and perceived value, it represents packaging's capacity to trigger immediate purchase responses without requiring intermediate value evaluation ([Izati & Permadi, 2026](#)). This finding is consistent with research showing that packaging visual elements serve as peripheral cues that activate purchase impulse in low-involvement conditions ([Rezeki & Nugroho, 2026](#)).

4.3.4 Non-Significant Effect of Knowledge on Purchase Intention (H_4)

The insignificant effect of knowledge on purchase intention ($\beta = 0.057$, $p = 0.318$) is the most theoretically important finding in this study, leading to the rejection of H_4 . This result is consistent with research showing that packaging information awareness does not reliably predict behavioral intention in low-involvement product categories ([Tang et al., 2025](#)). Three explanations deserve consideration. First, the operationalization of knowledge in this study may have captured surface-level awareness rather than elaborated product understanding; a more nuanced multi-dimensional knowledge scale might yield different results. Second, in the Indonesian retail contexts studied here, consumers may predominantly rely on peripheral cues, including packaging aesthetics, brand reputation, and design quality, rather than engaging in central-route information processing, particularly for fast-moving consumer goods. Third, the sample may include predominantly low-involvement consumers for whom knowledge elaboration does not translate into purchase motivation. Future research should test these alternative explanations by incorporating product involvement as a moderating variable ([Yeni & Wahap, 2024](#)).

4.3.5 Direct Effect of Perceived Value on Purchase Intention (H_5)

The significant effect of perceived value on purchase intention ($\beta = 0.519$, $p < 0.001$) is the strongest predictor of purchase intention in this model, supporting H_5 . This finding is highly consistent with a substantial body of literature establishing perceived value as the dominant driver of behavioral intention across diverse consumer contexts ([Wang & Guo, 2025](#); [Thuannadee & Praneetpholklang, 2026](#); [Munir & Watts, 2025](#)). The effect size ($\beta = 0.519$) is nearly twice that of the direct packaging-purchase intention path ($\beta = 0.279$), demonstrating that perceived value serves as the critical psychological mechanism converting packaging stimuli into behavioral responses. This result reinforces the validity of the SOR framework and highlights the primacy of value perception over information processing in purchase decisions.

4.3.6 Mediating Role of Knowledge and Perceived Value (H_{6a} and H_{6b})

The significant total indirect effect ($\beta = 0.330$, $p = 0.002$) confirms the overall mediating role of knowledge and perceived value combined. Decomposition of this effect, however, reveals a pronounced asymmetry between the two mediating pathways. Perceived value serves as a significant mediator (H_{6b} supported: indirect effect = $0.576 \times 0.519 = 0.299$, $p < 0.001$), constituting the dominant bridge through which packaging stimuli translate into purchase behavioral responses. In contrast, knowledge does not function as a significant mediator (H_{6a} not supported: indirect effect = $0.553 \times 0.057 = 0.032$, $p = 0.318$), as its constituent direct path to purchase intention was non-significant. This pattern of partial mediation through perceived value and near-zero mediation through knowledge extends prior research by demonstrating that in the packaging context, affective and evaluative processes dominate over cognitive-informational processes in mediating stimulus-response relationships. For SOR theory, this finding suggests that not all organism-level states are equally activated by packaging stimuli; the specific states that translate stimuli into behavioral responses depend on the nature of the stimulus and the consumer context ([Wang & Guo, 2025](#)).

5. Conclusions

5.1 Conclusion

This study examined the mediating role of knowledge and perceived value in the relationship between product packaging and purchase intention among 150 consumers in Palembang, Indonesia, using SEM-PLS with WarpPLS 8.0. With respect to the first research question, product packaging was found to significantly and positively influence all three outcome variables: knowledge ($\beta = 0.553$, $p < 0.001$), perceived value ($\beta = 0.576$, $p < 0.001$), and purchase intention ($\beta = 0.279$, $p = 0.008$). The effect on perceived value was the strongest, indicating that packaging functions most powerfully as a value-signaling mechanism. With respect to the second research question, perceived value significantly influenced purchase intention ($\beta = 0.519$, $p < 0.001$), establishing it as the dominant predictor of behavioral intention in this model. In contrast, knowledge showed no significant direct effect on purchase intention ($\beta = 0.057$, $p = 0.318$), indicating that information awareness alone is insufficient to drive purchase behavior in this context.

With respect to the third research question, the combined indirect effect of product packaging on purchase intention through knowledge and perceived value was significant ($\beta = 0.330$, $p = 0.002$). This mediation effect was driven predominantly by perceived value, while the mediating contribution of knowledge was negligible. Perceived value therefore serves as a significantly stronger mediator than knowledge in the packaging-purchase intention relationship. These findings demonstrate that packaging's primary influence on consumer purchase behavior operates through value creation rather than information transfer. Effective packaging design should prioritize aesthetic quality, material excellence, and value communication over informational complexity. The novel contribution of this study lies in its dual-mediator SOR framework analysis in the Indonesian creative economy context, revealing that perceived value, not knowledge, is the decisive psychological bridge between packaging stimuli and purchase behavioral response.

5.2 Research Limitations

This study has several limitations that future research should address. First, the sample was drawn exclusively from consumers in Palembang, Indonesia, limiting the generalizability of findings to other regions or cultural contexts. Second, the cross-sectional design prevents causal inference and cannot capture changes in consumer perceptions over time. Third, the knowledge construct may have captured only surface-level product awareness rather than elaborated understanding; a more nuanced, multi-dimensional operationalization may yield different results regarding the knowledge-purchase intention relationship. Fourth, this study did not control for product category involvement or consumer demographics as potential moderators. Fifth, the purposive sampling approach may introduce selection bias, as respondents who actively engage with packaged goods may not represent the broader consumer population.

Sixth, as all constructs were measured from the same respondents using a single self-report questionnaire, the study is susceptible to Common Method Variance (CMV), which may inflate correlations between variables. Although WarpPLS's full collinearity VIF assessment provides a partial diagnostic (AFVIF = 4.425, below the 5.0 threshold), future research should employ procedural remedies such as temporal separation between predictor and criterion measurements, or statistical approaches such as the marker variable technique, to more rigorously rule out CMV as a confound.

5.3 Suggestions and Directions for Future Research

For practitioners, packaging investment should be prioritized toward design elements that enhance consumer-perceived value, including material quality, aesthetic appeal, and premium visual characteristics, rather than focusing primarily on informational content. Businesses in the creative economy sector are encouraged to adopt value-oriented packaging strategies as part of their long-term sustainability and competitiveness planning. For policymakers, more comprehensive regulations and implementation guidelines should be developed to distinguish between packaging information

requirements and value communication standards, thereby supporting consumer protection while maintaining business competitiveness.

Future research should further examine the influence of packaging regulations on consumer behavior through broader analytical approaches, including socio-legal perspectives. Comparative studies across different regions, cultural backgrounds, and demographic segments are recommended to identify contextual factors that shape the relationship between packaging attributes and purchase intention. In addition, future studies should incorporate product involvement as a moderating variable, develop more comprehensive instruments for measuring consumer knowledge, and investigate the mediating role of environmental sustainability perceptions to provide deeper insights into evolving consumer responses toward packaging practices.

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Author Contributions

SLZR was responsible for conceptualization, methodology, supervision, as well as writing, review, and editing, while HHMS contributed to the literature review and writing the original draft. S handled data collection and formal analysis, AS was responsible for data collection and visualization, RP carried out investigation and data curation, HR contributed to software development and formal analysis, and TDP contributed to writing the original draft and validation. All authors have read and agreed to the published version of the manuscript.

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