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The Effect of Environmentally Friendly Packaging and Product Labeling on Purchasing Decisions and Business Sustainability of MSMEs in Bogor

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ABSTRACT

This study investigates the impact of Environmentally Friendly Packaging (EFP) and Product Labeling (PLA) on Purchasing Decisions (PDE) and Business Sustainability (BSU) in Micro, Small, and Medium Enterprises (MSMEs) in Bogor, Indonesia. Using a quantitative approach, data were collected from 170 MSME owners and analyzed using Structural Equation Modeling - Partial Least Squares (SEM-PLS). The results show that EFP and PLA have significant positive effects on PDE and BSU. Specifically, EFP influences Purchasing Decisions ($\beta = 0.358$, $p < 0.001$) and Business Sustainability ($\beta = 0.240$, $p = 0.003$), while PLA strongly affects both Purchasing Decisions ($\beta = 0.530$, $p < 0.001$) and Business Sustainability ($\beta = 0.487$, $p < 0.001$). These findings suggest that MSMEs can improve their competitiveness and long-term viability by adopting eco-friendly packaging and emphasizing sustainable labeling practices. The study contributes to the understanding of sustainable business practices in the context of MSMEs and provides valuable insights for entrepreneurs aiming to enhance their market position and ensure sustainability.

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1. INTRODUCTION

In recent years, the growing awareness of environmental issues has prompted significant changes in consumer behavior and business practices. The increasing awareness of environmental issues has led to significant shifts in consumer behavior and business practices, with eco-friendly packaging and sustainable product labeling emerging as key strategies. These approaches not only support environmental conservation but also offer businesses, particularly MSMEs, opportunities to enhance competitiveness and appeal to eco-conscious consumers. The integration of sustainable marketing strategies can significantly influence consumer preferences and purchasing decisions, as evidenced by studies showing a strong correlation between green business practices and consumer behavior [1], [2]. A study in Indonesia found

that 83% of consumers prefer brands committed to environmentally friendly practices, although actual purchasing behavior may not always align with these preferences [2]. Green marketing strategies, such as eco-labeling and corporate social responsibility initiatives, have been shown to positively influence consumer purchase intentions and brand loyalty [1]. Leading organizations like Nike and Starbucks have successfully incorporated green strategies in supply chain management and corporate responsibility, enhancing brand value and customer loyalty [3]. The fashion industry, through initiatives like Namira Ecoprint, demonstrates how eco-friendly practices can raise consumer awareness and differentiate products in the market [4]. While green marketing can foster sustainable consumption and innovation, challenges such as greenwashing and consumer skepticism about green claims persist [5]. Authenticity and transparency in green marketing are crucial for building consumer trust and loyalty, which are essential for long-term sustainability [3], [5].

Eco-friendly packaging and transparent product labeling are pivotal strategies for Micro, Small, and Medium Enterprises (MSMEs) aiming to differentiate themselves in competitive markets while promoting sustainability. These practices not only reduce environmental impact but also enhance consumer trust and loyalty. By adopting biodegradable, recyclable, or reusable packaging, MSMEs can align with consumer preferences for sustainable products and leverage this alignment to build a strong brand identity. Transparent labeling further supports this by informing consumers about the environmental impact and ethical considerations of products, thus guiding them towards more sustainable purchasing decisions. Biodegradable polymers, such as Polylactic Acid (PLA) and Polyhydroxyalkanoates (PHA), are increasingly used in packaging due to their ability to decompose into harmless components, reducing environmental damage [6], [7]. Additionally, bio-based materials derived from natural resources like proteins and carbohydrates offer a sustainable alternative to traditional plastics, particularly in pharmaceutical and food packaging [8]. Sustainable packaging also plays a crucial role in reducing food waste, which is a significant source of greenhouse gas emissions, as it enhances food quality and safety while minimizing waste [9]. Informative labeling can significantly influence consumer perceptions and purchase intentions by providing clear information about a product's environmental impact and ethical sourcing [10]. Furthermore, the use of digital platforms and social media can amplify the visibility of eco-friendly packaging initiatives, fostering deeper connections with environmentally conscious consumers [10].

The adoption of eco-friendly packaging and product labeling by MSMEs in Bogor can enhance business sustainability and influence consumer purchasing decisions. As environmental awareness grows, MSMEs implementing green marketing strategies, including eco-friendly packaging and labeling, are more likely to attract eco-conscious consumers [11]. These practices strengthen brand trust and loyalty, especially when combined with digital marketing [10]. Eco-friendly packaging also reduces waste and supports environmental goals [12]. However, challenges such as high costs and selecting optimal packaging remain. Innovative models like IT2TFS-BWM-CoCoSo help MSMEs navigate these complexities [13], while aligning green marketing with sustainable supply chains can further boost competitiveness despite cost and regulatory hurdles [14]. Research on how eco-friendly packaging and labeling influence purchasing behavior, especially in developing markets like Bogor, is still relatively limited. This study aims to fill this gap by exploring the effect of these practices on consumer behavior and business sustainability within the local MSME sector. The primary objective of this research is to investigate how eco-friendly packaging and product labeling influence the purchasing decisions of consumers and

contribute to the business sustainability of MSMEs in Bogor.

2. LITERATURE REVIEW

2.1 Eco-Friendly Packaging

The adoption of eco-friendly packaging by Micro, Small, and Medium Enterprises (MSMEs) offers benefits such as enhanced brand image, increased consumer trust, and market share growth. Using biodegradable, recyclable, and renewable materials aligns with consumer demand for sustainability and government regulations. Eco-friendly packaging boosts product appeal and consumer trust, as many are willing to pay a premium for sustainable products, leading to higher sales and loyalty [10]. Biodegradable and bio-based polymers like Polylactic Acid (PLA) and Polyhydroxyalkanoates (PHA) reduce environmental impact and support sustainability [6], [7]. Additionally, sustainable packaging differentiates MSMEs, strengthening brand image and market position [10]. However, high production costs and limited access to sustainable materials remain challenges, particularly in developing markets [9]. A lack of awareness and understanding of eco-friendly packaging further hinders adoption among MSMEs [15].

2.2 Product Labeling

Sustainable product labeling is crucial in marketing communication, providing consumers with information on environmental impact, ethical production, and material sources. This transparency builds consumer trust and fosters informed purchasing decisions, as eco-labels positively influence perceptions and behavior, especially among eco-conscious buyers. For Micro, Small, and Medium Enterprises (MSMEs) in Bogor, clear and informative labeling enhances customer loyalty and brand equity, supporting long-term sustainability [16]. Sustainable labeling aligns with consumer values, prevents greenwashing, and strengthens credibility [16], [17]. Eco-labels guide consumer choices, especially graded labels, and when combined with green marketing, they promote sustainable purchasing [18], [19]. For MSMEs, sustainable labeling differentiates products, boosts competitiveness, and encourages eco-friendly business practices [18], [20]. Regulatory frameworks ensure transparency, prevent greenwashing, and help integrate sustainability into brand identity, enhancing reputation and growth [17], [20].

2.3 Consumer Purchasing Decisions

Eco-friendly packaging and product labeling significantly influence consumer purchasing decisions by enhancing the perceived value and quality of products. Consumers increasingly prefer products that align with their environmental values, and businesses adopting sustainable practices benefit from greater customer loyalty and market performance. This impact is shaped by factors such as environmental awareness, perceived quality, and brand image, which collectively drive

consumer preferences. Consumers with heightened environmental consciousness are more likely to purchase products with eco-friendly packaging, as it aligns with personal values and social influences [21], [22]. Additionally, eco-friendly packaging enhances perceived product quality, making products more attractive and increasing sales [10], [23]. Companies utilizing sustainable packaging and labeling can improve brand image and foster customer loyalty, especially when paired with digital marketing strategies that emphasize sustainability efforts [10], [24]. Younger generations, particularly those with higher education levels, are driving demand for eco-friendly products due to their stronger sustainability preferences [21]. Furthermore, gender differences may influence how environmental attitudes and brand image affect purchasing decisions, with some studies indicating that women respond more positively to eco-friendly marketing strategies [24].

2.4 Business Sustainability

Eco-friendly packaging and product labeling are crucial for enhancing business sustainability, particularly for Micro, Small, and Medium Enterprises (MSMEs), as they attract environmentally conscious consumers and improve operational efficiency, ensuring long-term viability. By adopting sustainable practices, MSMEs can build a positive brand image and foster customer loyalty, which is increasingly important as consumers demand corporate commitment to sustainability. In emerging economies like Indonesia, eco-friendly practices can also open doors to international markets where sustainability is prioritized [25]–[27]. Aligning with environmental regulations enhances market positioning and ensures compliance with evolving standards [25]. Additionally, resource optimization through waste reduction and energy efficiency leads to cost savings and operational improvements, while sustainable supply chain management minimizes environmental impact and strengthens business [25], [27]. However, MSMEs often face barriers such as limited access to sustainable technologies and financial constraints [25], [28]. To overcome these challenges, government policies, financial incentives, and collaborative networks play a critical role in supporting MSMEs in adopting sustainable practices [25].

2.5 The Role of MSMEs in Sustainable Development

Micro, Small, and Medium Enterprises (MSMEs) are key contributors to Indonesia's GDP and employment, playing a vital role in economic stability. Despite challenges like resource constraints and market competition, MSMEs can drive sustainability through eco-friendly practices, enhancing competitiveness while aligning with broader environmental and social goals. Their focus on sustainability strengthens resilience and reputation, ensuring long-term success. MSMEs also support local products and have shown resilience during economic

downturns like the COVID-19 pandemic [29]. However, they struggle with limited access to technology, skilled human resources, and effective marketing [30], as well as financial literacy and digital marketing deficiencies that hinder global market integration [31]. Sustainable practices, such as environmental orientation, technology adoption, and green marketing, drive innovation and competitiveness [32]. Training and mentoring programs have improved MSME performance through product differentiation and creative marketing strategies [30], [33]. To support sustainability, policymakers should provide incentives and training for technology and green marketing adoption, while mentoring and innovation communities can help sustain improvements [30], [32].

2.6 Research Gap and Hypotheses

While there is a growing body of literature on the impact of eco-friendly packaging and labeling on consumer behavior and business sustainability, research specific to MSMEs in Bogor, Indonesia, remains limited. This study aims to fill this gap by providing empirical evidence on the effects of eco-friendly packaging and product labeling on purchasing decisions and business sustainability within the MSME sector in Bogor.

Based on the reviewed literature, the following hypotheses are proposed:

H1: Eco-friendly packaging positively influences consumer purchasing decisions in MSMEs in Bogor.

H2: Product labeling positively influences consumer purchasing decisions in MSMEs in Bogor.

H3: Eco-friendly packaging and product labeling positively contribute to business sustainability in MSMEs in Bogor.

This study will explore these relationships using Structural Equation Modeling - Partial Least Squares (SEM-PLS 3), offering a deeper understanding of how these factors interplay and their impact on MSME performance and sustainability.

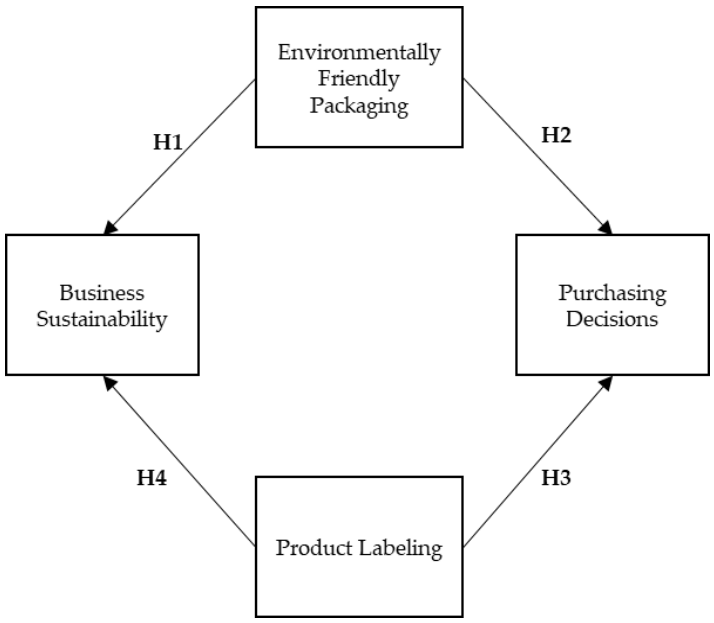

Figure 1. Conceptual Framework.

3. METHODS

3.1 Research Design

This study follows a descriptive and causal research design to examine the relationships between eco-friendly packaging, product labeling, consumer purchasing decisions, and business sustainability. The research design allows for the identification of the direct and indirect effects of eco-friendly packaging and product labeling on purchasing behavior and business performance within MSMEs. The study is quantitative in nature, focusing on gathering numerical data through structured questionnaires and analyzing these data using SEM-PLS 3 to test the proposed hypotheses.

3.2 Population and Sample

The population of this study consists of consumers who purchase products from MSMEs in Bogor, specifically those that implement eco-friendly packaging and labeling. The target sample includes 170 respondents, who were selected using a non-probability purposive sampling technique. This technique was employed to ensure that the participants have experience with purchasing products that use eco-friendly packaging and labeling. The sample size was determined based on the guidelines for SEM-PLS analysis, which typically recommend at least 100 respondents for sufficient statistical power (Hair et al., 2019).

The sample comprises individuals from different demographic backgrounds, such as age, gender, and educational level, to ensure a diverse representation of the consumer base. The study focuses on consumers who have purchased products from MSMEs within the past six months to ensure the relevancy of the data to current consumer behavior.

3.3 Data Collection Methods

Data for this study were collected using a structured self-administered questionnaire, distributed both online and in person to selected respondents. Each item was measured using a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), allowing respondents to express their level of agreement with each statement. The use of Likert scale items aligns with previous studies on consumer behavior and business sustainability (Ajzen, 1991). To ensure clarity and reliability, the questionnaire was pre-tested on a sample of 30 respondents. Feedback from this pre-test was incorporated to refine question wording and enhance the overall survey design.

The key variables in this study include eco-friendly packaging, product labeling, purchasing decisions, and business

sustainability. Eco-friendly packaging measures the extent to which a product's packaging is environmentally friendly, considering attributes like recyclability, biodegradability, and sustainable materials, adapted from previous studies (Dangelico & Vocalelli, 2017). Product labeling assesses the clarity, transparency, and ethical sourcing information communicated on product labels, with measurement items adapted from Magnier and Crié (2015). Purchasing decisions examine consumer behavior regarding eco-friendly packaging and labeling, using measurement items from consumer behavior studies (Chen & Chang, 2013). Business sustainability refers to the long-term viability of MSMEs through sustainable practices, adapted from corporate sustainability studies (Lozano, 2013). The measurement scales for each variable were designed to ensure reliability and validity, contextualized for MSMEs in Bogor while reflecting broader sustainability concepts.

3.4 Data Analysis Techniques

The data collected from the questionnaires were analyzed using Structural Equation Modeling with Partial Least Squares (SEM-PLS 3), a powerful tool for examining complex relationships between multiple variables, particularly in exploratory research where variable relationships are not well-established (Hair et al., 2017). The SEM-PLS analysis was conducted in two key stages: the measurement model evaluation and the structural model evaluation. In the measurement model evaluation, the reliability and validity of the measurement instruments were assessed by examining internal consistency (Cronbach's alpha and composite reliability), convergent validity (Average Variance Extracted - AVE), and discriminant validity using the Fornell-Larcker criterion and HTMT ratio. In the structural model evaluation, the relationships between the latent variables—eco-friendly packaging, product labeling, purchasing decisions, and business sustainability—were analyzed by assessing path coefficients, R^2 values, and significance levels. Bootstrapping with 5,000 subsamples was performed to determine the statistical significance of the path coefficients at a 95% confidence level.

4. RESULTS AND DISCUSSION

4.1 Demographic Sample

This section presents the demographic profile of the 170 respondents from MSMEs in Bogor, including gender, age, educational level, business experience, and industry type. The gender distribution shows that 64.7% of respondents were male, while 35.3% were female, reflecting the typical gender ratio in MSMEs where men often dominate business ownership and decision-making roles. In terms of age, the majority (38.2%) were between 26-35 years old, followed by 36-45 years (26.5%), with younger entrepreneurs (18-25 years) comprising 17.6% of the sample. Older age groups (46-55 years and 56+ years) accounted for a smaller percentage, indicating a diverse range of business owners with varying levels of experience. Regarding education, 35.3% held a Bachelor's degree, followed by diploma holders (29.4%) and high school graduates (26.5%), while only 8.8% had a postgraduate degree. This distribution suggests that while many MSME owners are highly educated, a significant number also come from vocational backgrounds. Business experience varied, with most respondents (29.4%) having 6-10 years of experience, followed by 11-15 years (26.5%) and 1-5 years (23.5%), showing that most MSMEs in Bogor are relatively young but with a notable portion having over a decade of experience. The industry distribution reveals that the food and beverage sector dominated (38.2%), followed by fashion and apparel (26.5%), handicrafts and art (17.6%), retail and wholesale (11.8%), and other sectors, including services, accounting for 5.9%. This diverse representation highlights the variety of MSMEs in Bogor and their role in the local economy.

4.2 Measurement Model

The measurement model provides an important foundation for assessing the relationships between latent constructs and their associated indicators in a Structural Equation Modeling (SEM) framework. In this study, the measurement model is based on four main latent variables: Environmentally Friendly Packaging, Product Labeling, Purchasing Decisions, and Business Sustainability. The following analysis presents the reliability and validity of these constructs, which were assessed using various indicators, such as factor loadings, Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE). These metrics help determine the reliability and convergent validity of the constructs used in the study.

Table 1. Measurement Model Assessment

Variable	Code	Loading Factor	Cronbach's Alpha	Composite Reliability	Average Variant Extracted
Environmentally Friendly Packaging	EFP.1	0.868	0.916	0.941	0.799
	EFP.2	0.939			
	EFP.3	0.900			
	EFP.4	0.865			
Product Labeling	PLA.1	0.880	0.847	0.897	0.685
	PLA.2	0.857			
	PLA.3	0.804			
	PLA.4	0.766			
Purchasing Decisions	PDE.1	0.852	0.883	0.919	0.740
	PDE.2	0.872			
	PDE.3	0.825			
	PDE.4	0.890			
Business Sustainability	BSU.1	0.700	0.899	0.924	0.710
	BSU.2	0.852			
	BSU.3	0.904			
	BSU.4	0.916			
	BSU.5	0.826			

Source: Data Processing Results (2025)

The measurement model evaluation confirmed the reliability and validity of four key constructs: Environmentally Friendly Packaging (EFP), Product Labeling (PLA), Purchasing Decisions (PDE), and Business Sustainability (BSU). EFP had factor loadings of 0.865–0.939, Cronbach's Alpha of 0.916, CR of 0.941, and AVE of 0.799. PLA showed factor loadings of 0.766–0.880, Cronbach's Alpha of 0.847, CR of 0.897, and AVE of 0.685. PDE had factor loadings of 0.825–0.890, Cronbach's Alpha of 0.883, CR of 0.919, and AVE of 0.740. BSU exhibited factor loadings of 0.700–0.916, Cronbach's Alpha of 0.899, CR of 0.924, and AVE of 0.710. These results confirm strong measurement properties, supporting further structural model analysis.

4.3 Discriminant Validity - HTMT

Discriminant validity is crucial in SEM to ensure that constructs that are supposed to be distinct are indeed measuring different concepts. One method to assess discriminant validity is the Heterotrait-Monotrait Ratio (HTMT), which compares the correlations between constructs to determine if they are truly distinct or if there is substantial overlap.

Table 2. Discriminant Validity

	BSU	EFP	PLA	PDE
Business Sustainability				
Environmentally Friendly Packaging	0.586			

Product Labeling	0.460	0.668		
Purchasing Decisions	0.493	0.712	0.769	

Source: Data Processing Results (2025)

The HTMT values assess discriminant validity, which is achieved when values remain below 0.85 (or 0.90 in some cases). Business Sustainability (BSU) and Environmentally Friendly Packaging (EFP) show an HTMT value of 0.586, while BSU and Product Labeling (PLA) have 0.460, and BSU and Purchasing Decisions (PDE) record 0.493, confirming their distinction. Environmentally Friendly Packaging (EFP) and Product Labeling (PLA) have a value of 0.668, EFP and PDE show 0.712, and PLA and PDE register 0.769, indicating strong but acceptable correlations. These results confirm that all constructs remain distinct without significant overlap.

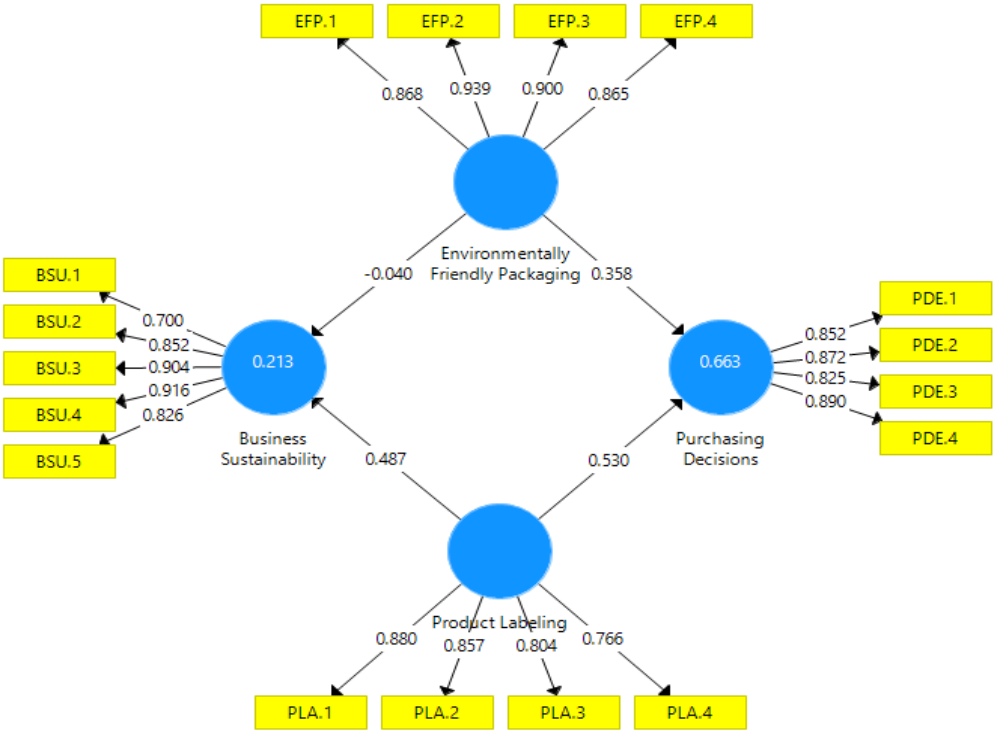

Figure 2. Model Results

Source: Data Processed by Researchers, 2025

4.4 Model Fit

Evaluating the overall fit of the model is an important step in SEM to ensure that the hypothesized relationships between constructs are adequately represented by the data. Several fit indices can be used to assess model fit, and here, we examine SRMR, d_ULS, d_G, Chi-Square, and NFI for both the Saturated Model (the model with no constraints, representing the perfect fit) and the Estimated Model (the model with estimated parameters).

Table 3. Model Fit Results Test

	Saturated Model	Estimated Model
SRMR	0.085	0.086
d_ULS	1.113	1.144
d_G	0.784	0.786
Chi-Square	457.659	458.950
NFI	0.743	0.742

Source: Process Data Analysis (2025)

The model fit evaluation in PLS-SEM was assessed using several fit indices. The Standardized Root Mean Square Residual (SRMR) values for both the Saturated Model (0.085) and Estimated Model (0.086) are close to the acceptable threshold of 0.08, indicating a good fit. The Squared Euclidean Distance (d_ULS) values for the Saturated Model (1.113) and Estimated Model (1.144) show minimal discrepancy in latent variable scores, suggesting an overall good fit. Similarly, the Geodesic Distance (d_G) values for the Saturated Model (0.784) and Estimated Model (0.786) indicate that the model appropriately represents the relationships between latent variables. The Chi-Square values for the Saturated Model (457.659) and Estimated Model (458.950) are comparable, suggesting that the model maintains a good fit despite a slight increase in the Estimated Model. Lastly, the Normed Fit Index (NFI) values for the Saturated Model (0.743) and Estimated Model (0.742) indicate a moderate fit, though slightly below the 0.90 threshold for a strong fit, suggesting potential areas for improvement. Overall, the fit indices confirm that the model provides an adequate representation of the data.

Table 4. Coefficient Model

	R Square	Q2
Workforce Quality	0.649	0.640

Source: Data Processing Results (2025)

In Structural Equation Modeling (SEM), R-Square (R^2) and Q-Square (Q^2) are key measures of model quality, indicating explanatory power and predictive relevance, respectively. The R^2 values for Business Sustainability (BSU) and Purchasing Decisions (PDE) are 0.413 and 0.663, respectively, suggesting that 41.3% of the variance in BSU and 66.3% of the variance in PDE are explained by the model. While the R^2 value for BSU indicates moderate explanatory power, the R^2 for PDE suggests a strong ability of the model to explain purchasing decisions, particularly in the context of environmentally friendly packaging and product labeling. The Q^2 values further confirm the model's predictive relevance, with BSU at 0.499 and PDE at 0.657. A Q^2 value above 0 indicates that the model can reliably predict new observations. The moderate Q^2 for BSU suggests that while the model is fairly effective in predicting business sustainability, there is room for improvement. Meanwhile, the high Q^2 for PDE indicates strong predictive power, aligning with its high R^2 value. These results suggest that the model is robust, particularly in explaining purchasing decisions, but further research could explore additional factors influencing business sustainability.

4.5 Structural Model

The Structural Model represents the hypothesized relationships between the constructs in the study, and it is evaluated based on the strength, significance, and direction of the paths between variables. In this study, the relationships between Environmentally Friendly Packaging (EFP), Product Labeling (PLA), Purchasing Decisions (PDE), and Business Sustainability (BSU) were examined.

Table 5. Hypothesis Testing

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics	P Values
Environmentally Friendly Packaging -> Business Sustainability	0.240	0.238	0.123	3.323	0.003

Environmentally Friendly Packaging -> Purchasing Decisions	0.358	0.365	0.095	3.776	0.000
Product Labeling -> Business Sustainability	0.487	0.493	0.115	4.217	0.000
Product Labeling -> Purchasing Decisions	0.530	0.526	0.083	6.408	0.000

Source: Process Data Analysis (2025)

The path coefficients indicate the strength and direction of relationships between variables, with statistical significance assessed through T Statistics and P Values. The path coefficient for Environmentally Friendly Packaging (EFP) on Business Sustainability (BSU) is 0.240, suggesting a moderate positive effect, supported by a T Statistic of 3.323 (greater than 1.96) and a P Value of 0.003 (<0.05), confirming statistical significance. Similarly, EFP positively influences Purchasing Decisions (PDE) with a path coefficient of 0.358, a T Statistic of 3.776, and a P Value of 0.000, indicating a strong and significant effect. Product Labeling (PLA) also plays a crucial role in Business Sustainability, with a path coefficient of 0.487, a T Statistic of 4.217, and a P Value of 0.000, confirming its strong and significant impact. Additionally, PLA strongly influences Purchasing Decisions, as shown by a path coefficient of 0.530, a highly significant T Statistic of 6.408, and a P Value of 0.000. All paths in this study have T Statistics above the 1.96 threshold and P Values below 0.05, verifying the statistical significance of each hypothesized relationship. These findings highlight the critical role of both Environmentally Friendly Packaging and Product Labeling in shaping Business Sustainability and consumer Purchasing Decisions.

Discussion

1. The Effect of Environmentally Friendly Packaging (EFP) on Purchasing Decisions (PDE)

The analysis reveals that Environmentally Friendly Packaging has a significant positive impact on Purchasing Decisions ($\beta = 0.358$, $p = 0.000$), which is in line with previous research that emphasizes the growing importance of eco-conscious consumers. Studies by [34] and [35] have highlighted that environmentally friendly packaging can positively influence consumer perceptions and encourage purchase behavior. As consumers become more aware of environmental issues, they tend to favor products that are perceived as environmentally responsible [22].

In the context of MSMEs in Bogor, the adoption of eco-friendly packaging is not only a response to consumer demand for sustainability but also a strategy to differentiate the product in a competitive marketplace. The positive relationship between EFP and PDE in this study suggests that MSMEs that prioritize sustainable packaging can build consumer loyalty and increase sales by appealing to environmentally-conscious buyers.

2. The Effect of Environmentally Friendly Packaging (EFP) on Business Sustainability (BSU)

The study also shows a significant positive effect of Environmentally Friendly Packaging on Business Sustainability ($\beta = 0.240$, $p = 0.003$). This finding aligns with the work of [26], [36], [37], who argue that integrating sustainability into business practices can lead to a competitive advantage and long-term profitability. In the context of MSMEs, adopting eco-friendly packaging can contribute to reducing operational costs (e.g., waste management and materials costs), improving brand reputation, and ensuring regulatory compliance in increasingly stringent environmental markets.

Moreover, the moderate path coefficient suggests that while environmentally friendly packaging contributes positively to business sustainability, it is not the only factor. Other

internal and external aspects, such as product quality, cost-efficiency, and market competition, likely also play a role in determining the sustainability of the business.

3. The Effect of Product Labeling (PLA) on Purchasing Decisions (PDE)

Product Labeling was found to have a strong positive effect on Purchasing Decisions ($\beta = 0.530$, $p = 0.000$), confirming the critical role of clear, informative, and attractive labels in influencing consumer choices. This result is consistent with research by [38]–[40], which found that product labeling is one of the most influential factors affecting consumer purchasing decisions. Labels that provide environmental information, such as the presence of organic ingredients, eco-friendly production processes, or sustainable sourcing, can greatly enhance consumer trust and encourage them to make a purchase.

The strong path coefficient suggests that Product Labeling is a powerful tool for MSMEs to communicate their sustainability efforts to consumers. Through transparent and informative labeling, MSMEs can establish credibility, build consumer trust, and improve their brand image. Thus, businesses that prioritize accurate labeling not only comply with regulations but also gain a marketing advantage.

4. The Effect of Product Labeling (PLA) on Business Sustainability (BSU)

The positive impact of Product Labeling on Business Sustainability ($\beta = 0.487$, $p = 0.000$) indicates that effective labeling practices go beyond influencing consumer behavior and contribute to the long-term viability of the business. Labeling that highlights sustainable practices such as fair trade, organic certification, or carbon-neutral production signals to consumers and stakeholders that the business is committed to ethical and environmentally-friendly operations. This finding is supported by studies such as [20], [41], [42], who found that transparent labeling of sustainable practices positively affects brand equity and business performance.

For MSMEs, adopting product labeling that emphasizes sustainability can help increase consumer loyalty, attract new customers, and foster business resilience in the face of regulatory changes or market shifts towards sustainability. The strong effect of PLA on BSU highlights the role of brand communication and reputation management in the success of MSMEs in competitive and sustainability-conscious markets.

5. Implications for MSMEs

The findings of this study have significant implications for MSMEs in the Bogor region, highlighting the positive impact of Environmentally Friendly Packaging and Product Labeling on both Purchasing Decisions and Business Sustainability. Integrating sustainable practices into business models can enhance market competitiveness and ensure long-term success, especially as consumers increasingly prioritize environmental and ethical considerations in their purchasing decisions. For MSMEs aiming to strengthen their market position, investing in sustainable packaging and clear, informative product labeling can be effective strategies to drive sales and sustainability. However, the moderate effect of EFP on BSU suggests that additional factors such as cost management, innovation, and customer engagement should also be incorporated into a comprehensive sustainability strategy.

6. Theoretical Contributions

This study contributes to the literature on sustainable marketing and business sustainability by highlighting the mediating role of Purchasing Decisions in the relationship between Eco-friendly Packaging, Product Labeling, and Business Sustainability. While previous research has examined these relationships separately, this study provides a more integrated perspective by linking consumer behavior with business outcomes, particularly in the context of MSMEs. Additionally, it underscores the importance of transparency and consumer

trust in achieving long-term business sustainability. The positive effects of both EFP and PLA suggest that businesses can enhance their sustainability performance by aligning their practices with the growing consumer demand for environmentally responsible products.

7. Limitations and Future Research

While this study provides valuable insights, it has certain limitations. The cross-sectional design prevents the assessment of causal relationships over time, suggesting that future research could adopt a longitudinal approach to examine the long-term effects of sustainable practices on business performance and consumer behavior. Additionally, further studies could explore other influencing factors such as price sensitivity, product quality, and brand reputation in shaping purchasing decisions and business sustainability. Expanding the research to different regions or industries would also help determine whether the findings remain consistent across various contexts.

5. CONCLUSION

The findings of this study highlight the crucial role of Environmentally Friendly Packaging and Product Labeling in shaping Purchasing Decisions and enhancing the Business Sustainability of MSMEs in Bogor. Businesses that adopt sustainable packaging and transparent product labeling not only attract environmentally conscious consumers but also strengthen their long-term sustainability. Eco-friendly packaging significantly influences consumer purchasing behavior and business longevity, while product labeling builds consumer trust and differentiates products in a competitive market. Practically, MSMEs seeking to enhance their market position should integrate sustainable practices into their operations, as the positive relationship between sustainability and business performance underscores the value of eco-conscious strategies. With the growing demand for sustainable products, MSMEs adopting such practices are likely to gain competitive advantages and ensure long-term success. This research contributes to the broader understanding of how sustainability influences consumer behavior and business outcomes, offering valuable insights for entrepreneurs and policymakers striving to promote sustainability in the MSME sector.

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