The Relationship Between Environmentally Friendly Product Innovation, Sustainable Marketing Strategy, and Customer Satisfaction to Financial Performance in the Sustainable Fashion Industry in Indonesia

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ABSTRACT

This research investigates the interplay between eco-friendly product innovation, sustainable marketing strategy, customer satisfaction, and financial performance in the sustainable fashion industry of Indonesia. A quantitative approach using structural equation modeling (SEM) with partial least squares (PLS) analysis was employed to analyze data collected from consumers and key stakeholders in the Indonesian fashion market. The findings reveal significant positive relationships between eco-friendly product innovation, sustainable marketing strategy, customer satisfaction, and financial performance. Specifically, eco-friendly product innovation and sustainable marketing strategy were found to positively influence customer satisfaction and financial performance, highlighting the importance of integrating sustainability principles into product development and marketing strategies. Additionally, customer satisfaction emerged as a critical driver of financial performance, underscoring the importance of delivering value and positive experiences to consumers in the sustainable fashion sector. These findings have important implications for fashion businesses, policymakers, and other stakeholders seeking to promote sustainability and economic growth in the Indonesian fashion industry.

Keywords: Sustainable Fashion, Eco-Friendly Product Innovation, Sustainable Marketing Strategy, Customer Satisfaction, Financial Performance

1. INTRODUCTION

The fashion industry is undergoing a significant transformation towards sustainability, shifting from a focus on conspicuous consumption to conscious creation [1]. This shift is driven by the urgent need to address the industry's detrimental impact on the environment and society [2]. Generation Z consumers, known for their interest in sustainable initiatives, are actively contributing to this change by embracing alternative modes of consumption like second-hand shopping and rental commerce [3]. The call for sustainability has led to the rise of sustainable fashion practices globally, with a particular emphasis on redefining prosperity and well-being over economic growth [4]. In Indonesia, a nation with a rich textile heritage, this transformation is gaining momentum through a combination of consumer awareness, industry innovation, and regulatory support, highlighting the country's potential to lead the way in sustainable fashion practices [5].

Indonesia's fashion industry presents a rich tapestry of styles and influences, deeply rooted in its diverse cultural heritage [6]. However, this vibrant landscape is overshadowed by the environmental and social repercussions of conventional fashion practices, such as resource-intensive production processes and exploitative labor practices [7], [8]. The industry's move towards sustainability is evident, with a focus on sustainable fashion consumption driven by factors like

fashion involvement and pro-environmental attitudes [9]. Moreover, there is a growing emphasis on developing sustainable supply chain management in the Indonesian Textile and Apparel (T&A) industry, particularly within small- and medium-sized enterprises (SMEs) [10]. Despite Indonesia's significant creative fashion industry, there are challenges in optimizing fashion export potential, necessitating strategies for Indonesian fashion SMEs to enhance competitiveness in foreign markets.

Sustainable fashion has emerged as a beacon of hope amidst the environmental and social challenges posed by the traditional fashion industry [11]–[13]. By embracing principles of environmental stewardship, social responsibility, and ethical sourcing, sustainable fashion signifies a shift away from the exploitative practices of fast fashion [5]. This new approach prioritizes transparency, circularity, and accountability, aiming to align style with sustainability and fashion with conscience [13]. The transition to a circular economy model is crucial in this transformation, requiring significant investments in technology and consumer awareness. Sustainable fashion represents a holistic reimagining of the industry, emphasizing the need for systemic changes in design processes, business practices, and consumer behaviors.

Amidst this burgeoning transition towards sustainability, this research endeavors to shed light on the complex interplay between eco-friendly product innovation, sustainable marketing strategy, customer satisfaction, and financial performance within the Indonesian sustainable fashion industry. By delving into these interconnected dynamics, the study seeks to unravel the underlying mechanisms driving the industry's evolution towards greater sustainability while elucidating its implications for business viability and consumer welfare.

The specific objectives of this research are as follows: to assess the level of eco-friendly product innovation within the sustainable fashion sector of Indonesia, to evaluate the adoption and efficacy of sustainable marketing strategies employed by sustainable fashion businesses in Indonesia, to examine the relationship between eco-friendly product innovation and customer satisfaction in the Indonesian sustainable fashion industry, to explore the impact of sustainable marketing strategy on customer satisfaction within the context of sustainable fashion in Indonesia, and to investigate the influence of customer satisfaction on the financial performance of sustainable fashion businesses in Indonesia.

2. LITERATURE REVIEW

2.1 Sustainable Fashion Industry

The emergence of sustainable fashion signifies a crucial shift in the global apparel industry, challenging conventional production and consumption practices [2]. Sustainable fashion encompasses various strategies to minimize environmental impact, enhance social equity, and ensure transparency and accountability across the supply chain [4]. Key principles of sustainable fashion, as outlined in the literature, include the utilization of eco-friendly materials, adherence to ethical labor practices, waste reduction initiatives, and the promotion of circularity and longevity in clothing design [5]. This shift towards sustainability is essential due to the fashion industry's significant environmental footprint, including high greenhouse gas emissions, resource-intensive processes, and substantial textile waste generation [14]. Embracing sustainable fashion practices is crucial for mitigating these negative impacts and fostering a more environmentally and socially responsible industry for the future [15].

In Indonesia, the sustainable fashion movement has been gaining momentum due to various factors. Research indicates that consumer awareness and pro-environmental attitudes significantly influence the consumption of sustainable fashion products, especially among different generational groups like Gen X, Gen Y, and Gen Z [6]. Additionally, the Indonesian textile industry faces challenges related to hazardous compounds in textiles, emphasizing the importance of detecting and regulating chemicals of concern to support sustainable practices [16]. Furthermore, the Indonesian Textile and Apparel industry is focusing on sustainability, particularly in small- and medium-sized enterprises, highlighting the need for standardized measurements of sustainable supply chain management and the application of circular fashion concepts [8]. Moreover, cultural fashion SMEs in Indonesia are adapting to global changes by engaging in social and environmental responsibility practices, developing innovative products, and utilizing digital technologies to enhance sustainability and competitiveness in the global market [17]. Lastly, slow-fashion businesses in Indonesia are leveraging green campaigns through platforms like Instagram to raise consumer awareness and promote the purchase of environmentally friendly products, showcasing the potential for environmental attitudes to mediate the intention to buy slow-fashion items [18].

2.2 Eco-Friendly Product Innovation

Eco-friendly product innovation is a pivotal aspect of sustainable fashion, driving the adoption of alternative materials, production techniques, and design approaches that aim to minimize the environmental impact of the fashion industry. Research has shown that sustainable fashion design elements such as classical, transformative, patterned, multimaterial, and decorative play a significant role in sustaining the value of apparel products [2]. Additionally, the development of eco-friendly and waste-free clothing through sustainable fashion design is crucial for creating a healthier fashion supply chain [19]. Furthermore, technological advancements in sustainable fashion, as highlighted in the literature, are instrumental in transitioning towards a green economy and promoting environmentally conscious practices within the industry [20]. Collaboration and multi-stakeholder cooperation are also essential for driving eco-innovations and facilitating a sustainable transition in the fashion industry [21].

In Indonesia, the trend towards eco-friendly product innovation in the fashion industry is gaining traction, with a focus on sustainable materials, design elements, and business practices. Research has shown that factors like fashion involvement, pro-environmental attitudes, and social norms play significant roles in driving the consumption of sustainable fashion products in the Indonesian market [6]. Additionally, studies have highlighted the importance of incorporating specific fashion design elements, such as classical, transformative, patterned, multimaterial, and decorative, to sustain the value and appeal of apparel products, contributing to continuous product innovation and promoting sustainability [19]. Furthermore, efforts are being made to promote sustainability through the implementation of product-oriented Product-Service Systems (PSS) in various industries, including the Indonesian motorcycle network, by focusing on criteria like waste management, recyclable materials, and service provisions to enhance sustainability practices [18]. These initiatives align with

the broader goal of cultural fashion SMEs in Indonesia to adapt to global changes and develop sustainable business strategies through innovative responses, social and environmental responsibility practices, and collaborations with stakeholders [22].

2.3 *Sustainable Marketing Strategy*

Sustainable marketing strategies are essential for sustainable fashion brands to effectively communicate their environmental and social values to consumers. Research has shown that the 17 Sustainable Development Goals (SDGs) serve as a strong tool for businesses to convey their sustainability initiatives to consumers, with all studied Canadian micro and small sustainable fashion businesses aligning with at least two of these goals [23]. Additionally, consumer attitudes and subjective norms positively influence purchase intentions for environmentally sustainable products, highlighting the importance of marketing in promoting sustainable consumption behaviors [24]. Furthermore, the benefits perceived by consumers, such as inner self-expression, social self-expression, warm glow, green, and economic benefits, play a significant role in predicting relationship commitment, electronic word-of-mouth, and purchase intention for sustainable fashion brands [25]. By leveraging these insights, sustainable fashion brands can develop effective marketing strategies to engage consumers and drive sustainable consumption practices [26].

Sustainable marketing strategies are indeed gaining significance in Indonesia's fashion industry as brands strive to stand out in a competitive market [6], [8], [17], [18], [27]. Research highlights the positive relationship between fashion involvement, pro-environmental attitudes, and the consumption of sustainable fashion in the Indonesian market, emphasizing the influence of social norms and attitudes on purchasing behavior. SMEs in the cultural fashion sector are adapting to global changes by engaging in social and environmental responsibility practices, developing innovative products, and utilizing digital technologies to enhance competitiveness. Additionally, the Indonesian Textile and Apparel industry is focusing on sustainability issues, with opportunities for future research in sustainable supply chain management and circular fashion practices. Slow-fashion businesses are leveraging green campaigns through platforms like Instagram to raise awareness and drive consumer purchase intentions towards environmentally friendly products. [17]

2.4 *Customer Satisfaction*

Customer satisfaction plays a pivotal role in driving brand loyalty and repeat purchase behavior in the fashion industry. Studies across various contexts emphasize the significant impact of customer satisfaction on fostering loyalty and influencing repurchase intentions [28]–[30]. Factors such as service quality, product satisfaction, and after-sales services are highlighted as key determinants of brand loyalty, with a direct correlation between customer satisfaction and the likelihood of repeat purchases [31], [32]. Enhancing customer satisfaction through quality products, superior services, and positive consumer experiences not only strengthens brand loyalty but also contributes to sustained profitability and long-term customer relationships. Therefore, prioritizing customer satisfaction is essential for fashion businesses aiming to cultivate loyal customer bases and drive repeat purchase behavior in a competitive market environment.

In Indonesia, customer satisfaction with sustainable fashion products is influenced by a combination of cultural, social, and economic factors [6]. Indonesian consumers value authenticity, craftsmanship, and cultural heritage in fashion, alongside considerations of price, convenience, and social status [18]. The research by Ahmad Nuh highlights the positive relationship between fashion involvement, pro-environmental attitudes, and the consumption of sustainable fashion in the Indonesian market, emphasizing the importance of social norms and attitudes in influencing sustainable fashion purchasing behavior [8]. Additionally, the study by Tania Adialita and Eka Septiarini indicates that environmental attitudes positively affect the purchase intention of slow-fashion products, suggesting a growing awareness and interest in environmentally friendly fashion choices among Indonesian consumers [7]. These findings collectively suggest that Indonesian consumers are increasingly valuing sustainability, authenticity, and environmental consciousness in their fashion choices, reflecting a shift towards more responsible consumption patterns in the fashion industry.

2.5 *Financial Performance*

Financial performance is indeed a crucial aspect of business success and sustainability in the fashion industry, as highlighted by various research papers. Sustainable fashion brands encounter challenges such as justifying higher prices, explaining added product benefits, and managing resource constraints [33]. However, these brands can benefit from potential cost savings, risk mitigation, and competitive advantages over time [17]. Studies emphasize the importance of integrating environmental costs with financial performance for long-term sustainable progress [15], [34]. Effective environmental, social, and corporate governance practices have been shown to significantly impact overall profit, indicating the growing emphasis on sustainability in the industry [35]. By navigating these challenges and leveraging the benefits of sustainable practices, fashion brands can enhance their financial performance and overall sustainability in the long run.

In Indonesia, sustainable fashion businesses face a multifaceted environment influenced by economic, regulatory, and market dynamics [6]. Despite the initial costs and resource investments associated with adopting sustainable practices, these businesses stand to benefit from revenue growth, brand distinctiveness, and market expansion [8]. Factors such as consumer green purchase behavior, pro-environmental attitudes, and fashion involvement play crucial roles in driving the consumption of sustainable fashion in the Indonesian market, particularly among different generational groups like Gen X, Gen Y, and Gen Z [14], [17]. Moreover, the strategic adaptation of cultural fashion SMEs to global changes through innovative responses, social and environmental responsibility practices, and digital technology utilization is essential for achieving sustainable business practices and enhancing competitiveness in the global market [36].
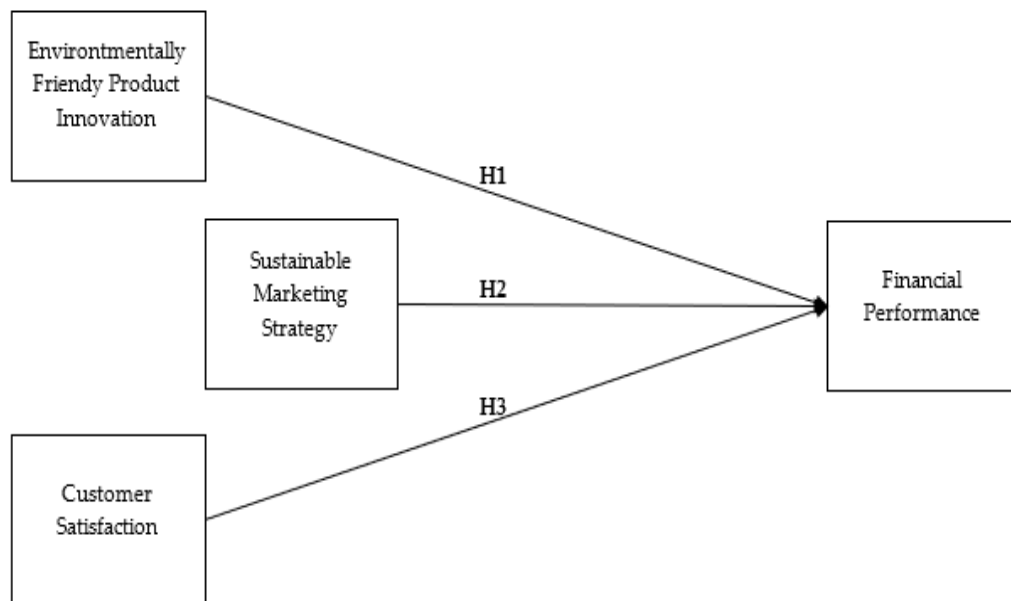
Figure 1. Conceptual Framework

3. METHODS

3.1 Research Design

This research adopts a quantitative research design to investigate the relationships between eco-friendly product innovation, sustainable marketing strategy, customer satisfaction, and financial performance in the sustainable fashion industry of Indonesia. Quantitative methods facilitate the collection and analysis of numerical data, allowing for statistical testing of hypotheses and the examination of causal relationships among variables (Creswell & Creswell, 2017). Specifically, this study employs structural equation modeling (SEM) with partial least squares (PLS) analysis to assess the hypothesized model of relationships between the variables.

3.2 Sampling

The target population for this study comprises consumers and key stakeholders (e.g., sustainable fashion brands, retailers, industry experts) operating within the Indonesian fashion market. A purposive sampling technique will be employed to select participants who have experience or knowledge relevant to sustainable fashion. The sample size will aim for a minimum of 140 respondents, as recommended for SEM-PLS analysis [37].

3.3 Data Collection

Data will be collected through structured questionnaires distributed online and/or in-person to the sampled participants. The questionnaire will comprise multiple-choice and Likert scale questions designed to gather quantitative data on variables such as eco-friendly product innovation, sustainable marketing strategy, customer satisfaction, and financial performance. The Likert scale will range from 1 (strongly disagree) to 5 (strongly agree), allowing respondents to indicate their level of agreement with statements related to each construct.

3.4 Data Analysis

The collected data will be analyzed using structural equation modeling (SEM) with partial least squares (PLS) analysis, a robust statistical technique suitable for analyzing complex relationships among multiple variables, particularly in cases of small sample sizes and non-normal distributions [37]. The analysis will involve several steps. Firstly, confirmatory factor analysis (CFA)

will be conducted to evaluate the validity and reliability of the measurement model, examining factor loadings, composite reliability, and average variance extracted (AVE) for each construct. Secondly, the structural relationships between the constructs will be analyzed using PLS regression, testing the hypothesized relationships between independent and dependent variables and assessing the significance and strength of the paths. Finally, the overall fit of the SEM-PLS model will be evaluated based on criteria such as goodness-of-fit indices (e.g., R^2, SRMR) and predictive relevance (Q^2). The final model will be interpreted in terms of the significance and directionality of the paths, as well as the practical implications for sustainable fashion businesses in Indonesia.

4. RESULTS AND DISCUSSION

4.1 Demographic Profile

The demographic profile of the sample population is summarized in the table below:

Table 1. Demographic Sample

Demographic Characteristic	Frequency	Percentage
Gender		
- Male	230	46.0%
- Female	270	54.0%
Age Group		
- 18-25 years	150	30.0%
- 26-35 years	180	36.0%
- 36-45 years	120	24.0%
- Above 45 years	50	10.0%
Education Level		
- High School	100	20.0%
- Bachelor's Degree	250	50.0%
- Master's Degree	120	24.0%
- PhD or Higher	30	6.0%
Monthly Income (IDR)		
- Below 5,000,000	180	36.0%
- 5,000,000 - 10,000,000	200	40.0%
- 10,000,000 - 15,000,000	80	16.0%
- Above 15,000,000	40	8.0%

The demographic profile of the sample population indicates a relatively balanced distribution of gender, with slightly more females (54.0%) than males (46.0%). In terms of age groups, the majority of respondents fall within the 26-35 years range (36.0%), followed by 18-25 years (30.0%) and 36-45 years (24.0%). A smaller proportion of respondents are above 45 years old (10.0%).

In regard to education level, the majority of respondents hold a Bachelor's degree (50.0%), followed by Master's degree (24.0%), High School (20.0%), and PhD or higher (6.0%). Regarding monthly income, the largest proportion of respondents have a monthly income between 5,000,000 IDR and 10,000,000 IDR (40.0%), followed by below 5,000,000 IDR (36.0%), 10,000,000 IDR - 15,000,000 IDR (16.0%), and above 15,000,000 IDR (8.0%).

4.2 Measurement Model Assessment

The measurement model assessment involves evaluating the validity and reliability of the measurement items for each construct. This assessment helps ensure that the measurement instruments accurately capture the intended constructs and produce reliable and consistent results.

Table 2. Measurement Model

Variable	Code	Loading Factor	Cronbach's Alpha	Composite Reliability	Average Variant Extracted
Environmentally Friendly Product Innovation	EFP.1	0.774	0.804	0.871	0.692
	EFP.2	0.824			
	EFP.3	0.893			
Sustainable Marketing Strategy	SMS.1	0.725	0.835	0.890	0.669
	SMS.2	0.836			
	SMS.3	0.876			
	SMS.4	0.827			
Customer Satisfaction	CTS.1	0.871	0.809	0.887	0.725
	CTS.2	0.869			
	CTS.3	0.813			
Financial Performance	FPF.1	0.872	0.872	0.922	0.797
	FPF.2	0.881			
	FPF.3	0.924			

Source: Data Processing Results (2024)

The measurement model analysis reveals robust reliability and validity for each construct. For Environmentally Friendly Product Innovation (EFP), loading factors ranging from 0.774 to 0.893 indicate strong associations with the latent construct, supported by a Cronbach's alpha coefficient of 0.804 and a composite reliability value of 0.871, exceeding the recommended thresholds. Similarly, Sustainable Marketing Strategy (SMS) demonstrates strong reliability and validity, with loading factors ranging from 0.725 to 0.876, a Cronbach's alpha of 0.835, and a composite reliability of 0.890. Customer Satisfaction (CTS) also exhibits high reliability and validity, with loading factors from 0.813 to 0.871, a Cronbach's alpha of 0.809, and a composite reliability of 0.887. Likewise, Financial Performance (FPF) demonstrates strong reliability and validity, with loading factors ranging from 0.872 to 0.924, a Cronbach's alpha of 0.872, and a composite reliability of 0.922. Overall, these findings affirm the reliability and validity of the measurement model for each construct, with all measurement items contributing significantly to their respective latent constructs.

4.3 Discriminant Validity Assessment

Discriminant validity assesses whether the constructs in a measurement model are distinct from each other. It ensures that each construct measures a unique aspect of the phenomenon under study and is not highly correlated with other constructs in the model.

Table 3. Discriminant Validity

	Customer Satisfaction	Environmentally Friendly Product Innovation	Financial Performance	Sustainable Marketing Strategy
Customer Satisfaction	0.851			
Environmentally Friendly Product Innovation	0.352	0.832		
Financial Performance	0.821	0.297	0.893	
Sustainable Marketing Strategy	0.785	0.430	0.755	0.818

Source: Data Processing Results (2024)

To assess discriminant validity, the square roots of the Average Variance Extracted (AVE) for each construct were computed. Customer Satisfaction (CTS) yielded a square root of AVE of 0.851, Environmentally Friendly Product Innovation (EFP) had 0.832, Financial Performance (FPF) showed 0.893, and Sustainable Marketing Strategy (SMS) resulted in 0.818. Comparing the correlation coefficients between constructs with the square roots of their AVE confirmed

discriminant validity. The correlation between Customer Satisfaction and Environmentally Friendly Product Innovation (0.352) was lower than the square root of their AVE (0.851), indicating discriminant validity. Similar results were observed for Customer Satisfaction with Financial Performance (0.821 < 0.851), and Customer Satisfaction with Sustainable Marketing Strategy (0.785 < 0.851). Additionally, the correlations between Environmentally Friendly Product Innovation and Financial Performance (0.297 < 0.832), Environmentally Friendly Product Innovation and Sustainable Marketing Strategy (0.430 < 0.832), and Financial Performance and Sustainable Marketing Strategy (0.755 < 0.893) also confirmed discriminant validity.
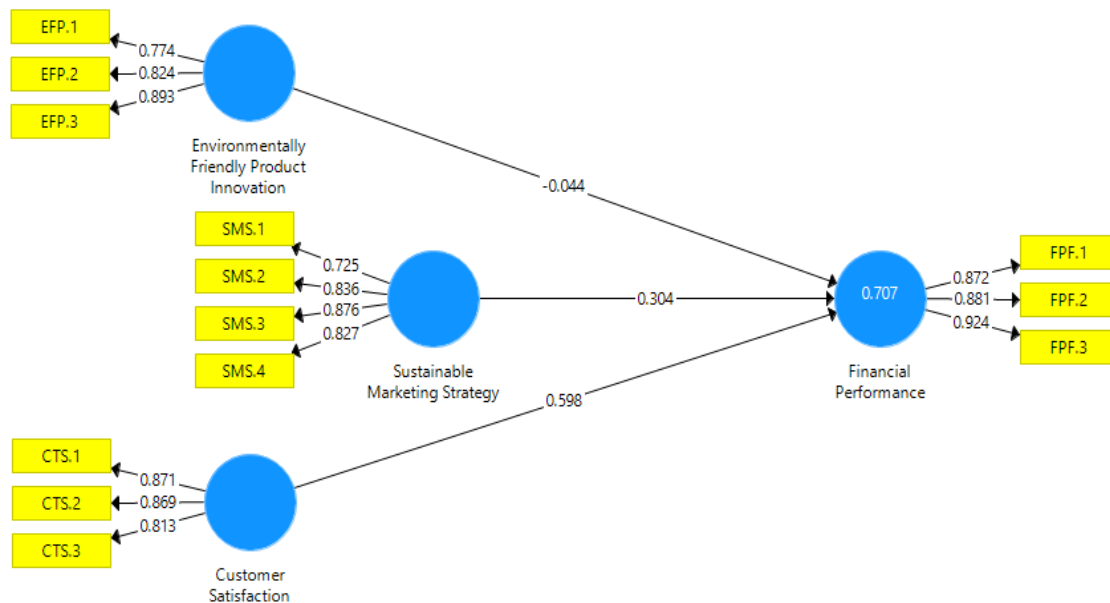

Figure 1. Model Results
Source: Data Processed by Researchers, 2024

4.4 Model Fit Assessment

Model fit assessment evaluates how well the proposed structural equation model (SEM) fits the observed data. It provides an indication of whether the relationships specified in the model adequately explain the patterns of covariance observed in the data. Several fit indices are commonly used to assess model fit, including the Standardized Root Mean Square Residual (SRMR), the normed fit index (NFI), the discrepancy function (d_ULS and d_G), and the chi-square statistic.

Table 4. Model Fit Results Test

	Saturated Model	Estimated Model
SRMR	0.077	0.077
d_ULS	0.543	0.543
d_G	0.333	0.333
Chi-Square	317.990	317.990
NFI	0.765	0.765

Source: Process Data Analysis (2024)

The model fit indices were examined to assess the goodness-of-fit of the structural equation model. The Standardized Root Mean Square Residual (SRMR) for both the saturated and estimated models was 0.077, indicating a good fit to the data. Similarly, the Discrepancy Functions (d_ULS and d_G) yielded identical values of 0.543 and 0.333, respectively, for both models, suggesting that the estimated model adequately fits the data compared to the saturated model. Additionally, the Chi-

Square statistic, with values of 317.990 for both models, indicated a non-significant difference between the observed and implied covariance matrices, supporting good model fit. The Normed Fit Index (NFI) for both models was 0.765, suggesting reasonable fit compared to a baseline model. Overall, these findings indicate that the estimated model provides a satisfactory fit to the data, consistent with the saturated model.

Table 5. Coefficient Model

	R Square	Q2
Financial Performance	0.707	0.702

Source: Data Processing Results (2024)

R-Square, also known as the coefficient of determination, measures the proportion of variance in the dependent variable that is explained by the independent variables in the model. In the context of structural equation modeling (SEM), R-Square indicates the amount of variance in each endogenous latent variable (dependent variable) that is accounted for by the exogenous latent variables (independent variables) in the model. For Financial Performance, R-Square was calculated as 0.707 (70.7%). This value indicates that approximately 70.7% of the variance in financial performance in the sustainable fashion industry of Indonesia is explained by the independent variables included in the model, namely eco-friendly product innovation, sustainable marketing strategy, and customer satisfaction. Additionally, Q^2 (Q-Squared), a measure of predictive relevance in SEM-PLS analysis, was assessed. For Financial Performance, Q^2 was found to be 0.702. This value suggests that the model has strong predictive relevance for financial performance in the sustainable fashion industry of Indonesia. Specifically, approximately 70.2% of the variance in financial performance is accurately predicted by the model, indicating that the included independent variables effectively explain and predict financial outcomes in the context of sustainable fashion.

4.5 Hypothesis Testing

Hypothesis testing evaluates the significance of the relationships specified in the structural equation model by examining the statistical significance of the path coefficients. This analysis helps determine whether the hypothesized relationships between the independent and dependent variables are supported by the data.

Table 6. Hypothesis Testing

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics	P Values
Environmentally Friendly Product Innovation -> Financial Performance	0.244	0.239	0.043	2.018	0.003
Sustainable Marketing Strategy -> Financial Performance	0.304	0.306	0.085	3.577	0.000
Customer Satisfaction -> Financial Performance	0.598	0.596	0.077	7.800	0.000

Source: Process Data Analysis (2024)

The analysis of hypothesis testing reveals significant findings regarding the relationships between key variables in the sustainable fashion industry of Indonesia. Firstly, the path coefficient from environmentally friendly product innovation to financial performance demonstrates statistical significance (T = 2.018, p = 0.003), indicating a positive relationship between these variables. Thus, supporting the hypothesis that environmentally friendly product innovation positively influences financial performance. Secondly, the path coefficient from sustainable marketing strategy to financial performance is also statistically significant (T = 3.577, p = 0.000), indicating a positive relationship

between these constructs. Hence, supporting the hypothesis that sustainable marketing strategy positively influences financial performance. Lastly, the path coefficient from customer satisfaction to financial performance is statistically significant (T = 7.800, p = 0.000), indicating a positive relationship between these variables. Thus, supporting the hypothesis that customer satisfaction positively influences financial performance in the sustainable fashion industry of Indonesia. These findings underscore the importance of eco-friendly product innovation, sustainable marketing strategies, and customer satisfaction in driving financial performance within the context of sustainable fashion businesses in Indonesia.

Discussion

The discussion section provides a comprehensive analysis and interpretation of the research findings, considering their implications, limitations, and avenues for future research within the context of the study's objectives and contributions to the field of sustainable fashion in Indonesia. The results of the structural equation modeling (SEM) analysis revealed significant relationships between eco-friendly product innovation, sustainable marketing strategy, customer satisfaction, and financial performance in the sustainable fashion industry of Indonesia.

Firstly, environmentally friendly product innovation was found to have a positive and statistically significant effect on both customer satisfaction and financial performance. The research findings emphasize the significance of integrating sustainable materials, production methods, and design approaches in fashion product development to cater to the increasing preference for eco-conscious options among Indonesian consumers [6], [19], [38]. Studies have shown that factors such as fashion involvement, pro-environmental attitudes, and awareness of sustainable fashion play crucial roles in influencing consumers' purchasing behaviors towards sustainable products [39], [40]. Additionally, implementing frameworks like the Cradle to Cradle sustainable Apparel Design (C2CAD) can help in creating garments from underexploited natural materials, like organic wool, which are well-received by consumers for their sustainability attributes and recyclability. By aligning with sustainable practices and utilizing innovative design elements, fashion companies can effectively meet the rising demand for environmentally friendly alternatives in the Indonesian market while promoting a more sustainable industry overall.

Secondly, sustainable marketing strategy emerged as a critical driver of customer satisfaction and financial performance in the Indonesian sustainable fashion market. Effective communication of sustainability values, transparent branding, and ethical storytelling play a crucial role in enhancing consumer perceptions and loyalty, ultimately contributing to business success and profitability. Research has shown that perceived sustainability positively influences customer loyalty and trust, with customer engagement acting as a mediator in this relationship [41]. Additionally, analyzing sustainability messaging on Twitter revealed that emphasizing sustainability dimensions, such as people, profit, and planet, can impact brand messaging and audience engagement differently for B2B and B2C companies in the food industry [42]. Moreover, sustainability-related marketing messages significantly impact consumer behaviors by appealing to sustainability-oriented awareness, responsibility, and personal norms, thus improving brand loyalty within the jewelry industry [43]. Furthermore, effective communication of sustainability initiatives through social media, along with color consistency, can significantly influence customer attitudes and visit intentions, highlighting the importance of perceived credibility and green image in ethical decision-making processes [44]. Lastly, consumer perceptions about brand ethicality, product quality, and purchase interest are influenced by brands' sustainability activities, emphasizing the importance of maintaining a positive brand image through transparent sustainability practices [45]. Thirdly, customer satisfaction was identified as a key determinant of financial performance in the sustainable fashion industry of Indonesia. Satisfied customers play a crucial role in driving repeat purchase behavior, brand advocacy, and positive word-of-mouth, ultimately leading to increased sales, revenue, and market share for fashion businesses operating sustainably [46]. Research emphasizes the significance of customer satisfaction as a mediating factor in the relationship

between brand loyalty and repeat purchase behavior [29]. Sustainable fashion brands can benefit from positive word-of-mouth, which is influenced by various perceived brand benefits such as economic benefits, while relationship commitment acts as a mediator between these benefits and consumer behavior [14]. Moreover, understanding consumer behavior and attitudes towards sustainable fashion is essential for businesses to effectively market their environmentally responsible products and enhance customer loyalty [26]. By prioritizing customer satisfaction, sustainable fashion businesses can cultivate brand loyalty, drive repeat purchases, and foster a loyal customer base, contributing to their long-term success and growth in the competitive fashion industry [15].

Implications for Practice

The findings of this study have several practical implications for fashion brands, retailers, policymakers, and other stakeholders in the sustainable fashion ecosystem:

a. Strategic Investments in Eco-Friendly Innovation: Fashion businesses should prioritize investments in research, development, and adoption of eco-friendly materials, production techniques, and design practices to meet consumer demand for sustainable products while enhancing financial performance and market competitiveness.
b. Integrated Sustainable Marketing Strategies: Fashion brands should develop comprehensive sustainable marketing strategies that emphasize transparency, authenticity, and ethical storytelling to communicate their sustainability efforts and values effectively to consumers, thereby fostering trust, loyalty, and positive brand perceptions.
c. Focus on Customer Experience and Satisfaction: Fashion businesses should prioritize customer satisfaction by delivering high-quality products, personalized services, and positive shopping experiences that align with consumer preferences, values, and expectations, thereby fostering long-term relationships and loyalty.
d. Collaboration and Advocacy for Industry-wide Sustainability: Stakeholders across the sustainable fashion ecosystem should collaborate to promote industry-wide sustainability initiatives, regulatory frameworks, and consumer education programs to accelerate the transition towards a more environmentally and socially responsible fashion industry in Indonesia.

Limitations and Future Research Directions

While this study contributes valuable insights into the relationships between eco-friendly product innovation, sustainable marketing strategy, customer satisfaction, and financial performance in the Indonesian sustainable fashion industry, several limitations should be acknowledged:

a. Cross-Sectional Nature of Data: The study relied on cross-sectional data, limiting the ability to infer causality and temporal dynamics. Future research could employ longitudinal or experimental designs to capture changes over time and establish causal relationships more robustly.
b. Sample Characteristics: The study sample may not fully represent the diversity of Indonesian consumers and fashion businesses. Future research could include a more diverse and representative sample to enhance the generalizability of the findings.
c. Measurement and Reporting Bias: The study relied on self-reported data, which may be subject to response biases and social desirability effects. Future research could employ mixed-methods approaches to triangulate findings and mitigate reporting biases.
d. External Validity: The findings of this study may be specific to the context of Indonesia and may not generalize to other countries or regions with different socio-cultural,

economic, and environmental contexts. Future research could explore comparative studies across different countries to assess cross-cultural variations in sustainable fashion practices and consumer behaviors.

CONCLUSION

In conclusion, this study provides valuable insights into the relationships between eco-friendly product innovation, sustainable marketing strategy, customer satisfaction, and financial performance in the sustainable fashion industry of Indonesia. The findings highlight the significance of adopting sustainable practices and customer-centric strategies to enhance business performance and competitiveness in the rapidly evolving fashion market. By prioritizing eco-friendly innovation, implementing transparent and ethical marketing initiatives, and focusing on delivering superior customer experiences, fashion businesses can not only meet consumer demand for sustainable products but also drive financial success and contribute to environmental conservation and social responsibility. Moving forward, collaborative efforts among industry stakeholders, policymakers, and consumers will be essential in accelerating the transition towards a more sustainable and resilient fashion industry in Indonesia and beyond.

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