



Global Scientific and Academic Research Journal of Economics, Business and Management

ISSN: 2583-5645 (Online)

Frequency: Monthly

Published By GSAR Publishers

Journal Homepage Link- <https://gsarpublishers.com/journals-gsarjebm-home/>



The Role of Consumer Trust in the Relationship between Perceived Sustainability of Forest Products and Purchase Intention

By

Yustinus Rawi Dandono¹, Derah Sudjaniah², Bintoro Ariyanto³, Jailani⁴, Yusuf Budi Harto⁵

^{1,2,3,4,5}Sekolah Tinggi Ilmu Ekonomi Bhakti Pembangunan, Jakarta, Indonesia



Article History

Received: 10/09/2026

Accepted: 17/09/2026

Published: 21/09/2026

Vol –5 Issue – 9

PP: -33-44

Abstract

Forest-based products provide important economic and environmental benefits, but their market acceptance increasingly depends on consumers' perceptions of sustainability and confidence in sustainability-related claims. This study aims to examine the relationship between Perceived Sustainability of Forest Products, Consumer Trust, and Purchase Intention, with particular attention to the role of Consumer Trust in explaining purchase intention. Data were collected through an online structured questionnaire from 380 consumers in Indonesia who had purchased or used forest-based products. Respondents were selected using purposive sampling based on their age, experience with forest-based products, and recent product-use experience. Data were analyzed using Partial Least Squares Structural Equation Modeling with SmartPLS 4.0. The results show that Perceived Sustainability of Forest Products has a positive and significant effect on Consumer Trust and Purchase Intention. Consumer Trust also has a positive and significant effect on Purchase Intention. Furthermore, Consumer Trust significantly mediates the relationship between Perceived Sustainability of Forest Products and Purchase Intention. The strongest relationship was observed between Consumer Trust and Purchase Intention, indicating that consumer confidence is an important factor in translating sustainability perceptions into purchasing intentions. The findings suggest that strengthening transparent sustainability information, product traceability, certification, and consistency in sustainable forest-resource management can enhance consumer trust and support the market acceptance of sustainable forest products.

Keywords: Consumer Trust; Forest Products; Purchase Intention; Sustainable Consumption; Sustainability

1. Introduction

Forest products are important commodities that connect forest resources with economic activities and people's consumption needs. Forest products include timber and non-timber forest products that provide economic, social, and environmental benefits for communities and forest-dependent livelihoods (Chang et al., 2024). The increasing demand for products derived from renewable resources has also attracted greater attention to the sustainability of forest-based products and their contribution to sustainable consumption (Larasatie et al., 2023). Recent research has shown that consumers are increasingly interested in products derived from renewable resources, including non-wood forest products, while their purchasing decisions are influenced by various product and consumer-related considerations (Singer & Özşahin, 2024).

The utilization of forest products, however, needs to be

accompanied by sustainable forest management because the economic utilization of forest resources is closely related to environmental sustainability (Rocchi et al., 2023). Forest certification has emerged as a market-based mechanism to promote sustainable forest management and to communicate the sustainability and legality of forest products to markets and consumers (Deniz, 2023). Recent studies indicate that certified forest products can provide a means for consumers to participate indirectly in sustainable forest management through their purchasing decisions (Maleknia & Hälälşan, 2025). Therefore, forest-product sustainability is not only a concern of forest managers and policymakers but also increasingly becomes relevant to producers, marketers, and consumers (Tian et al., 2023).

Consumers have an important role in determining the market acceptance of sustainable forest products because purchasing decisions can provide economic incentives for producers to

*Corresponding Author: Yustinus Rawi Dandono.



maintain responsible forest-resource management (Corticeiro et al., 2024). Research on forest-certified products has demonstrated that consumers' purchasing intentions are influenced by psychological and behavioral factors, including environmental concern, attitudes, perceived behavioral control, and trust in certification mechanisms (Zubizarreta et al., 2024). Rana & Sills, (2024), for example, found that environmental concern and perceived trust significantly influenced consumers' intention to purchase certified forest products, with their extended model explaining 73% of the variance in purchase intention. This finding indicates that consumers' responses to forest products cannot be explained solely by the physical characteristics of products but also by how consumers perceive the sustainability and credibility associated with those products.

Perceived sustainability is therefore an important consideration in understanding consumer responses to forest products (Bösch, 2025). Consumers may evaluate whether a forest product is produced from responsibly managed resources, whether its production considers environmental impacts, and whether purchasing the product can contribute to sustainable forest-resource utilization (Li et al., 2024). Research conducted by Lu & Liu, (2024) showed that consumers' individual characteristics and psychological factors are important in explaining their willingness to purchase forest-certified products, while previous research has often focused more heavily on external characteristics such as demographic factors. Similarly, research on non-timber forest products has shown that consumers' responses to environmental labels and sustainability information vary according to how they perceive the credibility and environmental attributes associated with the products (Paudel & Zhou, 2024). These findings suggest that consumers' perceived sustainability of forest products deserves further examination as a factor that may influence their subsequent purchasing responses.

Consumer trust is also important because sustainability attributes of forest products are not always directly observable by consumers (Alhomaid, 2025). Consumers may have difficulty determining whether claims concerning sustainable sourcing, responsible forest management, or environmental benefits are genuinely fulfilled (Nguyen Tran Cam, 2023). In the context of certified forest products, trust in certification mechanisms has been shown to significantly influence consumers' purchase intention (Mawardi et al., 2024). Trust is particularly important when consumers depend on information, labels, or claims provided by producers and certification institutions rather than being able to independently verify the sustainability of the product (Wu & Long, 2024). Thus, when consumers perceive forest products as sustainable and consider the information provided about their sustainability to be credible, consumer trust may develop and subsequently influence their purchasing intention (Borah et al., 2024).

From a theoretical perspective, the relationship between perceived sustainability and consumer trust can be explained through Signaling Theory (Spence, 1973). Sustainability is an

attribute that consumers may not be able to directly verify because information concerning sourcing, production processes, and forest management practices is often not observable at the point of purchase. Therefore, sustainability-related information functions as a signal that helps consumers evaluate the credibility and responsibility of forest-product producers (Atkinson & Rosenthal, 2014). When consumers perceive these sustainability signals as credible and consistent with responsible forest management, uncertainty regarding the product's sustainability is reduced, which can strengthen consumer trust. Consumer trust subsequently provides a psychological basis for purchase intention. When consumers trust that sustainability claims are credible and that the product is associated with responsible forest-resource utilization, they are more likely to develop a favorable intention to purchase. Thus, perceived sustainability may influence purchase intention not only directly but also indirectly through consumer trust (Lee et al., 2020).

Purchase intention represents an important consumer response because positive perceptions of sustainability do not necessarily result directly in purchasing decisions. Studies of forest-certified products have shown that consumer intention is shaped by a combination of psychological, attitudinal, and product-related factors (Hadi et al., 2024). Viet et al., (2024) found that green self-efficacy, perceived behavioral control, perceived scarcity, and product involvement were relevant to consumers' willingness to purchase forest-certified products. Meanwhile, Bagia et al., (2024) demonstrated that perceived trust, environmental concern, attitude, and perceived behavioral control significantly influenced purchase intention toward certified forest products. Research on non-timber forest products has likewise demonstrated that consumer purchasing decisions involve multiple criteria and cannot be explained by product characteristics alone (Vironika & Maulida, 2025).

Although previous studies have examined consumers' purchasing behavior toward forest-certified and non-timber forest products, most studies have focused on certification, environmental concern, attitudes, perceived behavioral control, green self-efficacy, product involvement, perceived scarcity, and willingness to pay (Baharuddin et al., 2026). Research has also demonstrated that trust is an important determinant of purchase intention toward certified forest products, particularly trust in certification mechanisms (Hendri & Giantari, 2026). However, there is still limited research that specifically examines consumers' perceived sustainability of forest products as the initial perception that develops consumer trust and subsequently encourages purchase intention (Rimiyati & Wardana, 2026). This is important because consumers may respond not only to the presence of certification but also to their broader perception of whether a forest product is genuinely sustainable.

The relationship between perceived sustainability, trust, and purchase intention is therefore important to investigate because sustainable forest products require consumer acceptance to generate market incentives for responsible forest-resource utilization. A product may originate from

sustainable forest management, but its sustainability attributes will have limited market value if consumers do not perceive those attributes positively or trust the information communicated by producers. Recent research has emphasized the importance of psychological factors and trust in understanding consumer intentions toward certified forest products, but further research is needed to examine how consumers' sustainability perceptions translate into trust and purchasing intention. Understanding this relationship can provide a marketing perspective for strengthening the market position of sustainable forest products (Truong et al., 2026).

Based on the results of previous studies, there is still limited empirical evidence regarding the relationship between Perceived Sustainability of Forest Products, Consumer Trust, and Purchase Intention, particularly among consumers of forest-based products outside the certified-product context. Previous research has mainly examined certified forest products and specific psychological determinants of purchasing intention, while research concerning consumers' overall perception of forest-product sustainability and its relationship with trust remains limited. Therefore, this research needs to be conducted to determine whether consumers' perceived sustainability of forest products can strengthen consumer trust and whether such trust contributes to their intention to purchase forest products.

Based on the research gap, this study aims to analyze the relationship between Perceived Sustainability of Forest Products, Consumer Trust, and Purchase Intention. The study examines whether perceived sustainability of forest products influences consumer trust, whether consumer trust influences purchase intention, and whether consumer trust explains the relationship between perceived sustainability of forest products and purchase intention. The results are expected to contribute to the development of marketing research in the forestry sector by providing empirical evidence regarding the role of consumer perceptions and trust in strengthening the market acceptance of sustainable forest products.

2. Materials and Methods

2.1 Time and Location

This study was conducted from June to August 2026 in Indonesia through an online survey distributed to consumers who had purchased or used forest-based products. Forest-based products in this study included wood products, bamboo products, rattan products, furniture, honey, and other products derived from timber and non-timber forest resources. The use of an online survey enabled the researchers to reach consumers from different geographical areas and obtain respondents with experience in purchasing or using forest-based products. Online data collection is increasingly used in consumer research because digital survey methods allow researchers to reach geographically dispersed respondents efficiently ((Heino et al., 2024); (Tan et al., 2025)).

The research focused on consumers because purchasing decisions are an important component of market-based support for sustainable forest management. Recent research has shown that consumers' purchasing intentions toward

certified forest products are influenced by environmental and psychological factors, including environmental concern and perceived trust. Therefore, consumers who had direct experience with forest-based products were considered appropriate respondents for examining perceived sustainability, consumer trust, and purchase intention.

2.2. Data Collection Methods and Sample Determination

The data collection method used a structured questionnaire distributed through an online survey. Online questionnaires have been widely applied in contemporary consumer research because they allow researchers to collect standardized responses efficiently from respondents with different demographic and geographic backgrounds. Before completing the questionnaire, respondents were provided with information regarding the purpose of the research and the criteria for participation.

The sampling technique used in this study was non-probability purposive sampling (Tusholihah & Nora, 2025). Purposive sampling was selected because respondents needed to meet specific criteria relevant to the research objectives rather than being selected randomly from the general population (Koay & Ahmed, 2025). Recent consumer research on forest-certified products has similarly used consumer-specific criteria to examine purchasing intentions toward sustainable forest products (Mardius et al., 2023).

The respondents were required to meet three criteria: (1) being at least 20 years old, (2) having purchased or used at least one forest-based product, and (3) having experience with the product within the previous six months. These criteria were established to ensure that respondents had sufficient experience to evaluate the sustainability characteristics of forest products and express their purchase intentions. Previous studies examining consumer responses to forest-certified products have also emphasized the importance of respondents having relevant purchasing experience or familiarity with the products being evaluated.

The target population of this study was considered an unknown or unbounded population, as the exact number of consumers who met the specified eligibility criteria could not be precisely identified (Sugiyono, 2022). Therefore, the total population size ((N)) was unavailable, and a finite population correction was not applied. Because the proposed research model was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM), the minimum sample size was determined using the inverse square root method (Kock & Hadaya, 2018). This method estimates the minimum required sample size based on the smallest expected path coefficient in the structural model. The formula is:

$$n_{min} \geq \left(\frac{2.486}{|\beta_{min}|} \right)^2$$

Using:

n_{min} = minimum sample size

2.486 = constant corresponding to a 5% significance level and 80% statistical power

$\beta_{\min}$ = minimum expected path coefficient

Using a minimum expected path coefficient of 0.20, the calculation is:

$$n_{\min} \geq \left(\frac{2.486}{0.20} \right)^2$$

$$n_{\min} \geq 154.51$$

$$n_{\min} = 155$$

The result is rounded upward to 155 respondents. Therefore, the minimum required sample size is 155 respondents. However, the study targeted 380 respondents to provide additional statistical power and to account for potentially incomplete responses or responses that did not meet the predetermined eligibility criteria.



Figure 1. Map of the Study Area in Indonesia

Table 1. Respondent Profile

No .	Demographic Profile	Category	Frequency (n)	Percentage (%)
1	Gender	Male	180	47.4
		Female	200	52.6
2	Age (years)	20–29	120	31.6
		30–39	110	28.9
		40–49	85	22.4
		≥ 50	65	17.1
3	Education Level	High School or Equivalent	90	23.7
		Diploma/Bachelor	220	57.9
		Postgraduate	70	18.4
4	Monthly Income (IDR)	< 3,000,000	20	5.3
		3,000,000–	70	18.4

No .	Demographic Profile	Category	Frequency (n)	Percentage (%)
5	Experience with Forest-based Products	5,000,000		
		5,000,001–10,000,000	210	55.3
		> 10,000,000	80	21.1
		6–12 months	120	31.6
		> 1–3 years	145	38.2
6	Types of Forest-based Products Purchased/Used (Multiple Response)	> 3 years	115	30.3
		Wood products (e.g., furniture, boards)	300	78.9
		Bamboo products	210	55.3
		Rattan products	175	46.1
		Non-timber forest products (e.g., honey, essential oils, resins)	140	36.8
		Other forest-based products	60	15.8

2.3. Data Analysis

Data analysis in this research was conducted using a hypothesis-testing approach based on Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4.0 software. PLS-SEM was selected because it is appropriate for examining complex relationships among latent constructs and for assessing both the measurement and structural models. The analysis was conducted in two main stages. First, the measurement model was evaluated to assess the reliability and validity of the constructs through indicator loadings, Cronbach's alpha, composite reliability, average variance extracted (AVE), and discriminant validity. Second, the structural model was assessed to examine the hypothesized relationships among Perceived Sustainability of Forest Products, Consumer Trust, and Purchase Intention. The structural model evaluation included the coefficient of determination (R^2), effect size (f^2), path coefficients, and bootstrapping-based significance testing (Hair et al., 2021). The proposed PLS-SEM model is presented in Fig. 2

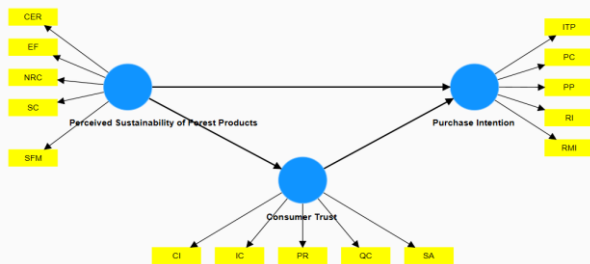


Fig. 2. PLS-SEM model of the proposed research

The proposed model consists of three main constructs: Perceived Sustainability of Forest Products (PSFP), Consumer Trust (CT), and Purchase Intention (PI). Perceived Sustainability of Forest Products represents consumers' perceptions regarding the environmental and sustainability characteristics of forest-based products. This construct is measured using five indicators: Sustainable Forest Management (SFM), Environmental Friendliness (EF), Natural Resource Conservation (NRC), Sustainability Certification (SC), and Corporate Environmental Responsibility (CER). These indicators capture consumers' perceptions of whether forest-based products originate from sustainably managed forests, are environmentally friendly, contribute to forest resource conservation, are supported by sustainability certification, and are produced by companies demonstrating environmental responsibility (Damberg et al., 2024).

Consumer Trust (CT) functions as the mediating construct between perceived sustainability and purchase intention. Consumer Trust reflects the extent to which consumers believe that forest-based products and the companies providing them are reliable, honest, credible, consistent, and safe. The construct is measured through five indicators: Company Integrity (CI), Information Credibility (IC), Product Reliability (PR), Quality Consistency (QC), and Safety Assurance (SA). These indicators represent consumers' confidence in the company's integrity, the credibility of sustainability-related information, product performance, consistent product quality, and safety (Maleknia & Hălălișan, 2025).

Purchase Intention (PI) represents consumers' willingness or likelihood to purchase sustainable forest-based products. This construct is measured through five indicators: Intention to Purchase (ITP), Purchase Consideration (PC), Purchase Preference (PP), Repurchase Intention (RI), and Recommendation Intention (RMI). These indicators reflect consumers' future purchasing intentions, consideration of sustainability in purchasing decisions, preference for sustainable forest products, willingness to repurchase, and willingness to recommend such products to others ((Rizomyliotis, 2026);(Cho et al., 2024)).

The structural model examines four hypotheses. H1 proposes that Perceived Sustainability of Forest Products has a positive effect on Consumer Trust. H2 proposes that Consumer Trust has a positive effect on Purchase Intention. H3 examines the direct positive effect of Perceived Sustainability of Forest

Products on Purchase Intention. Finally, H4 proposes that Consumer Trust mediates the relationship between Perceived Sustainability of Forest Products and Purchase Intention. The inclusion of both the direct relationship between PSFP and PI and the indirect relationship through Consumer Trust allows the study to determine whether consumer trust serves as an important mechanism through which perceptions of product sustainability influence consumers' purchase intentions.

3. Results and Discussion

3.1. Evaluation of the Suitability of the Measurement Model

3.1.1. Evaluation of the reliability and validity of the questionnaire

Outer loading is used to assess the reliability of each indicator in measuring its respective latent variable. An indicator is considered to have adequate reliability when its outer loading value is greater than 0.70. The results of the outer loading measurement for the Consumer Trust, Perceived Sustainability of Forest Products, and Purchase Intention variables are presented in Figure 3 and Table 2.

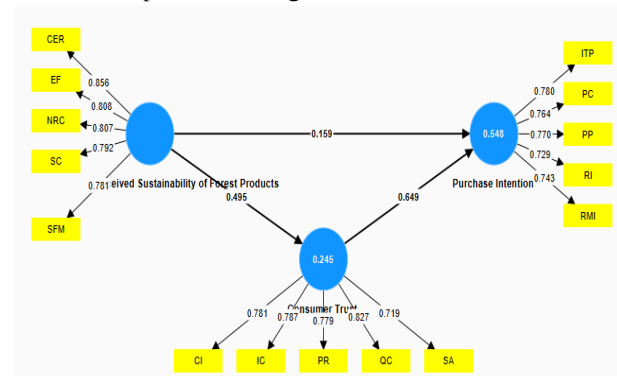


Fig. 3. Measurement results of the PLS-SEM algorithm model.

As shown in Fig. 3, all indicators used to measure the three constructs demonstrated satisfactory outer loading values. The indicators representing Consumer Trust, Perceived Sustainability of Forest Products, and Purchase Intention showed loading values above 0.70, indicating that each indicator has an adequate contribution to its respective construct. The highest loading value was observed for the CER indicator at 0.856, while the lowest loading value was obtained for the SA indicator at 0.719. Although the loading values varied across indicators, all remained above the minimum recommended threshold of 0.70. Therefore, none of the indicators needed to be eliminated at this stage of the measurement model evaluation. The detailed outer loading values of each indicator are presented in Table 2.

Table 2. The results of indicator testing with a valid loading factor/outer loading used in the research

Indicator	Consumer Trust	Perceived Sustainability of Forest Products	Purchase Intention
CER		0.856	

Indicator	Consumer Trust	Perceived Sustainability of Forest Products	Purchase Intention
CI	0.781		
EF		0.808	
IC	0.787		
ITP			0.780
NRC		0.807	
PC			0.764
PP			0.770
PR	0.779		
QC	0.827		
RI			0.729
RMI			0.743
SA	0.719		
SC		0.792	
SFM		0.781	

The results of the outer loading measurement (**Table 2**) show that all indicators have outer loading values above the recommended threshold of 0.70. For the Consumer Trust

variable, the outer loading values of CER, CI, EF, IC, and ITP are 0.856, 0.781, 0.808, 0.787, and 0.780, respectively. These results indicate that all indicators adequately represent the Consumer Trust construct. For the Perceived Sustainability of Forest Products variable, the indicators NRC, PC, PP, PR, and QC have outer loading values of 0.807, 0.764, 0.770, 0.779, and 0.827, respectively. All values exceed 0.70, indicating that the indicators have adequate reliability in measuring the Perceived Sustainability of Forest Products construct. Meanwhile, for the Purchase Intention variable, the indicators RI, RMI, SA, SC, and SFM have outer loading values of 0.729, 0.743, 0.719, 0.792, and 0.781, respectively. Although SA has the lowest outer loading value of 0.719, this value remains above the recommended threshold of 0.70. Therefore, all indicators used in this study meet the criteria for indicator reliability and can be retained for further analysis. Overall, the outer loading results demonstrate that the indicators have adequate convergent validity in measuring their respective latent variables.

Before testing the proposed hypotheses, it is necessary to evaluate the measurement model to ensure that all constructs meet the required reliability and convergent validity criteria. According to Hair et al., (2021), a construct is considered reliable when the values of Cronbach's Alpha and Composite Reliability exceed 0.70. Furthermore, convergent validity is established when the Average Variance Extracted (AVE) value is greater than 0.50. Therefore, reliability and convergent validity tests were conducted for the constructs of Perceived Sustainability of Forest Products, Consumer Trust, and Purchase Intention. The results are presented in **Table 3**.

Table 3. Reliability and Convergent Validity Results

Variable	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	AVE
Consumer Trust	0.838	0.841	0.885	0.608
Perceived Sustainability of Forest Products	0.868	0.878	0.904	0.655
Purchase Intention	0.814	0.814	0.871	0.574

Table 3 shows that all constructs meet the recommended thresholds for reliability and convergent validity. Consumer Trust has a Cronbach's Alpha of 0.838, Composite Reliability of 0.885, and AVE of 0.608. Perceived Sustainability of Forest Products has values of 0.868, 0.904, and 0.655, respectively, while Purchase Intention has values of 0.814, 0.871, and 0.574. Since all Cronbach's Alpha and Composite Reliability values exceed 0.70 and all AVE values exceed 0.50, the constructs demonstrate adequate reliability and convergent validity. Therefore, the measurement model is considered reliable and valid for subsequent structural model analysis and hypothesis testing.

3.1.2. Evaluation of the relationship between latent variables

In addition to evaluating reliability and convergent validity, discriminant validity was assessed using the *Heterotrait-Monotrait Ratio* (HTMT). According to Henseler et al., (2015), HTMT is a more sensitive criterion for assessing discriminant validity than traditional methods. A construct is considered to have adequate discriminant validity when the HTMT value is below 0.90. Values exceeding this threshold may indicate a lack of discriminant validity, suggesting that the constructs are not sufficiently distinct from one another. The HTMT results are presented in **Table 4**.

Table 4. Result of testing the relationship between variables in research with Heterotrait-Monotrait Ratio (HTMT)

Construct	Consumer Trust	Perceived Sustainability of Forest Products	Purchase Intention
Consumer Trust	0.780		

Construct	Consumer Trust	Perceived Sustainability of Forest Products	Purchase Intention
Perceived Sustainability of Forest Products	0.573	0.809	
Purchase Intention	0.878	0.561	0.758

Based on **Table 4**, all HTMT values are below the recommended threshold of 0.90, with values of 0.573 for Consumer Trust–Perceived Sustainability of Forest Products, 0.561 for Purchase Intention–Perceived Sustainability of Forest Products, and 0.878 for Consumer Trust–Purchase Intention. These results indicate that the constructs are

empirically distinct and demonstrate adequate discriminant validity. Therefore, the measurement model meets the discriminant validity requirement and is suitable for further structural model analysis and hypothesis testing.

Table 5. Results of discriminant testing with Fornell Lacker

Construct	Consumer Trust	Perceived Sustainability of Forest Products	Purchase Intention
Consumer Trust	0.779		
Perceived Sustainability of Forest Products	0.495	0.809	
Purchase Intention	0.727	0.480	0.758

Table 5 shows that the square root of AVE for Consumer Trust is 0.779, which is higher than its correlation with Perceived Sustainability of Forest Products (0.495) and Purchase Intention (0.727). Furthermore, the square root of AVE for Perceived Sustainability of Forest Products is 0.809, which is higher than its correlations with Consumer Trust (0.495) and Purchase Intention (0.480). Similarly, the square root of AVE for Purchase Intention is 0.758, which is higher than its correlation with Consumer Trust (0.727) and Perceived Sustainability of Forest Products (0.480).

Based on these results, the square root of AVE for each construct is greater than its correlations with the other constructs. Therefore, Consumer Trust, Perceived Sustainability of Forest Products, and Purchase Intention meet the criteria for discriminant validity based on the Fornell–Larcker Criterion. This indicates that each construct is empirically distinct from the other constructs in the research model and can be appropriately used for further structural model assessment and hypothesis testing of H1 to H4.

3.2. Evaluation of the Suitability of the Structural Model (Hypothesis Testing and Mediating Variables)

The assessment of collinearity in this study was conducted using the Variance Inflation Factor (VIF) value. The VIF test is used to determine whether there is a high correlation among the predictor constructs in the structural model. A VIF value below 5.000 indicates that there is no critical collinearity problem among the predictor constructs, while a value below 3.000 is generally considered to indicate a stronger absence of collinearity. The results of the VIF assessment are presented in the following **table 6**.

Table 6. Multicollinear test results with Variance Inflation Factor (VIF)

Structural Path	VIF
Consumer Trust → Purchase Intention	1.324

Structural Path	VIF
Perceived Sustainability of Forest Products → Consumer Trust	1.000
Perceived Sustainability of Forest Products → Purchase Intention	1.324

Table 6 shows that the VIF value for the structural path from Consumer Trust to Purchase Intention is 1.324. The VIF value for the path from Perceived Sustainability of Forest Products to Consumer Trust is 1.000, while the VIF value for the path from Perceived Sustainability of Forest Products to Purchase Intention is 1.324. All VIF values are below the recommended threshold of 5.000, and even below 3.000, indicating that there is no critical collinearity problem among the predictor constructs in the structural model. Based on these results, the structural model meets the requirements for the collinearity assessment. The low VIF values indicate that the predictor constructs do not have problematic multicollinearity and that each predictor provides sufficiently distinct information in explaining the endogenous constructs. Therefore, the structural model can proceed to the next stage of analysis, namely structural path coefficient assessment and hypothesis testing for H1 to H4.

3.2.1. Hypothesis test

Hypothesis testing was conducted to examine the relationships between the constructs in the structural model. The hypotheses were evaluated based on the path coefficient (β), T-statistics, and P-value. A hypothesis is considered supported when the T-statistics value is greater than 1.96 and the P-value is less than 0.05 at a 5% significance level. The results of the hypothesis testing are presented in the following **Fig. 4** and **Table 7**.

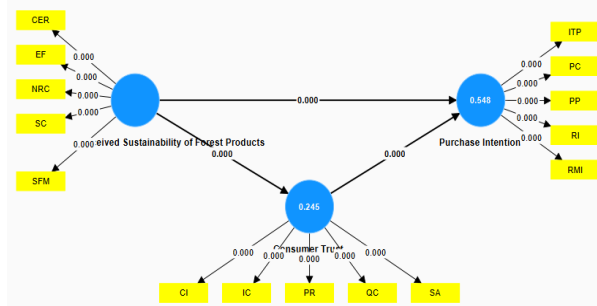


Fig. 4. Bootstrapping results of the PLS-SEM algorithm model.

As shown in **Figure 4**, all proposed relationships in the research model are positive and statistically significant. *Perceived Sustainability of Forest Products* has a significant positive effect on both *Consumer Trust* and *Purchase Intention*. In addition, *Consumer Trust* positively influences

Purchase Intention. The coefficient of determination (R^2) for *Consumer Trust* is 0.245, indicating that 24.5% of the variance in *Consumer Trust* is explained by *Perceived Sustainability of Forest Products*. Meanwhile, the R^2 value for *Purchase Intention* is 0.548, suggesting that 54.8% of the variance in *Purchase Intention* is jointly explained by *Perceived Sustainability of Forest Products* and *Consumer Trust*. These results demonstrate that the proposed model has moderate explanatory power in predicting consumers' purchase intentions toward sustainable forest products.

Table 7. Results hypothesis testing (path coefficient) based on bootstrapping

Hypothesis	Relationship	β	T-Statistics	P-Value	Decision
H1	Perceived Sustainability of Forest Products $\rightarrow$ Consumer Trust	0.495	9.730	0.000	Supported
H2	Consumer Trust $\rightarrow$ Purchase Intention	0.649	11.823	0.000	Supported
H3	Perceived Sustainability of Forest Products $\rightarrow$ Purchase Intention	0.159	5.088	0.000	Supported

The results show that H1, H2, and H3 are supported. H1 indicates that Perceived Sustainability of Forest Products positively and significantly affects Consumer Trust ($\beta = 0.495$; $T = 9.730$; $p < 0.001$). H2 is also supported, showing that Consumer Trust has a positive and significant effect on Purchase Intention ($\beta = 0.649$; $T = 11.823$; $p < 0.001$). Furthermore, H3 is supported, indicating that Perceived Sustainability of Forest Products positively and significantly affects Purchase Intention ($\beta = 0.159$; $T = 5.088$; $p < 0.001$). Overall, these findings confirm that perceptions of forest product sustainability enhance both consumer trust and

purchase intention, while Consumer Trust has a strong positive effect on Purchase Intention.

3.2.2. Test mediating variables

Mediation analysis was conducted to determine whether Consumer Trust mediates the relationship between Perceived Sustainability of Forest Products and Purchase Intention. The mediation analysis examines whether consumers' perceptions of the sustainability of forest products influence their purchase intention indirectly through the development of consumer trust. The results of the mediation analysis are presented in **Table 8**.

Table 8. Results of testing the mediating variables used in the research

Hypothesis	Mediation Relationship	β	T-Statistics	P-Value	Decision
H4	Perceived Sustainability of Forest Products $\rightarrow$ Consumer Trust $\rightarrow$ Purchase Intention	0.321	7.855	0.000	Supported

The results of the mediation analysis (**Table 8**) show that the indirect relationship between Perceived Sustainability of Forest Products and Purchase Intention through Consumer Trust has a path coefficient of 0.321, with a T-statistic of 7.855 and a P-value of 0.000. Since the T-statistic is greater than 1.96 and the P-value is less than 0.05, the indirect effect is positive and statistically significant. This indicates that consumers' perceptions of the sustainability of forest products significantly increase their Consumer Trust, which in turn strengthens their Purchase Intention. The positive coefficient of 0.321 indicates that greater perceived sustainability is associated with higher purchase intention through increased

consumer trust. Therefore, H4 is supported, meaning that Consumer Trust significantly mediates the positive effect of Perceived Sustainability of Forest Products on Purchase Intention.

Effect size (f^2) analysis was conducted to determine the magnitude of the effect of an exogenous construct on an endogenous construct in the structural model. The f^2 value indicates the extent to which a predictor construct contributes to the explained variance of an endogenous construct. According to the commonly used criteria, f^2 values of 0.02, 0.15, and 0.35 indicate small, medium, and large effects,

respectively. The results of the f^2 analysis are presented in

Table 9.

Table 9. Effect size (f^2) test results to determine the relationship between variables

Construct	Consumer Trust Perceived Sustainability of Forest Products Purchase Intention		
Consumer Trust	—	—	0.704
Perceived Sustainability of Forest Products	0.324	—	0.042
Purchase Intention	—	—	—

The effect size results show that Perceived Sustainability of Forest Products has a medium effect on Consumer Trust ($f^2 = 0.324$), while Consumer Trust has a large effect on Purchase Intention ($f^2 = 0.704$). In contrast, Perceived Sustainability of Forest Products has a small effect on Purchase Intention ($f^2 = 0.042$). These findings indicate that Consumer Trust plays a particularly important role in explaining Purchase Intention compared with the direct effect of Perceived Sustainability of Forest Products. Regarding H4, the mediation effect cannot be determined from f^2 alone and should be assessed using the indirect effect. Nevertheless, the medium effect on Consumer Trust and the large effect of Consumer Trust on Purchase Intention suggest that Consumer Trust may play an important mediating role.

The coefficient of determination (R^2) was assessed to determine the extent to which the exogenous constructs explain the variance in the endogenous constructs within the structural model. The R^2 value represents the proportion of variance in an endogenous construct that can be explained by its predictor constructs. As a general guideline, R^2 values of 0.25, 0.50, and 0.75 can be interpreted as weak, moderate, and substantial levels of explanatory power, respectively. The results of the R^2 analysis are presented in **Table 10**.

Table 10. The results for the coefficient of determination (R^2 -square) to determine the variance of each variable

Endogenous Construct	R-square (R^2)	R-square Adjusted
Consumer Trust	0.245	0.243
Purchase Intention	0.548	0.546

The results show that Consumer Trust has an R^2 value of 0.245, indicating that 24.5% of its variance is explained by Perceived Sustainability of Forest Products, representing weak explanatory power. Meanwhile, Purchase Intention has an R^2 value of 0.548, indicating that 54.8% of its variance is explained by Perceived Sustainability of Forest Products and Consumer Trust, representing moderate explanatory power. Overall, the model explains Purchase Intention better than Consumer Trust, while the small differences between the R^2 and adjusted R^2 values indicate relatively stable explanatory power.

3.3. Evaluation of Predictive Power and Model Fit

The model fit assessment was conducted to evaluate how well the proposed structural model fits the empirical data. In Partial Least Squares Structural Equation Modeling (PLS-SEM),

several fit indices can be considered, including the Standardized Root Mean Square Residual (SRMR), d_{ULS} , d_G , Chi-square, and Normed Fit Index (NFI). The results of the model fit assessment are presented in **Table 11**.

Table 11. Goodness of fit results with SRMR and NFI

Fit Index	Saturated Model	Estimated Model
SRMR	0.068	0.068
d_{ULS}	0.553	0.553
d_G	0.197	0.197
Chi-square	447.010	447.010
NFI	0.838	0.838

The model fit results show that the SRMR value is 0.068 for both the saturated and estimated models, which is below the 0.08 threshold and indicates an acceptable model fit. The d_{ULS} and d_G values are 0.553 and 0.197, respectively, and require comparison with bootstrap-based reference values for further assessment. The Chi-square value is 447.010 for both models and should be interpreted alongside other fit indicators. Meanwhile, the NFI value of 0.838 is below the recommended 0.90 threshold, indicating that the model fit is acceptable but not optimal. Overall, the model demonstrates an acceptable fit based primarily on the SRMR value, although the NFI suggests room for improvement.

3.4. The Role of Consumer Trust in Strengthening Sustainable Forest Product Purchase Intention

The results show that Perceived Sustainability of Forest Products positively and significantly affects Consumer Trust and Purchase Intention, while Consumer Trust positively affects Purchase Intention and significantly mediates the relationship between perceived sustainability and purchase intention. These findings indicate that perceptions of sustainable forest management, environmental responsibility, conservation, and certification can strengthen consumers' confidence in the credibility and reliability of forest-based products. Sustainability information and certification may also reduce uncertainty and serve as signals of producer credibility, consistent with Damberg et al. (2024) and Maleknia and Hălălișan (2025).

Consumer Trust has the strongest relationship with Purchase Intention, indicating that consumers' willingness to purchase

depends not only on sustainability perceptions but also on confidence in product quality, reliability, safety, and the credibility of sustainability information. Although Perceived Sustainability of Forest Products directly affects Purchase Intention, its effect is weaker than that of Consumer Trust, suggesting that sustainability perceptions become more influential when supported by consumer confidence. This finding is consistent with ((Bagia et al. (2024); (Wu and Long (2024); (Lu and Liu (2024); (Paudel and Zhou (2024))).

The significant mediation confirms that Consumer Trust is an important mechanism linking perceived sustainability to Purchase Intention. Therefore, producers and marketers should provide credible information on product origin, sustainability practices, certification, and product reliability, while ensuring consistency between sustainability claims and actual practices. Strengthening consumer trust can ultimately increase purchase intention and support the development of sustainable forest-product markets.

3.5. Implications for Sustainable Forest Product Governance and Marketing

The findings have important implications for sustainable forest-product governance and marketing in Indonesia. The positive relationships among Perceived Sustainability of Forest Products, Consumer Trust, and Purchase Intention indicate that sustainable forest management should be supported by credible communication mechanisms. Because sustainability attributes such as product origin, legality, and responsible management are not always directly observable, transparency, traceability, and credible verification are essential for reducing consumer uncertainty and strengthening trust.

The Sistem Verifikasi Legalitas dan Kelestarian (SVLK) provides an institutional mechanism for verifying the legality, sustainability, and traceability of forest products. Its role can therefore extend beyond forest governance to supporting consumer communication by providing credible information about product sustainability. Collaboration among government, forest managers, producers, certification institutions, and marketers is needed to communicate information on product origin, certification, environmental practices, and quality while ensuring consistency between sustainability claims and actual practices.

These findings suggest that sustainable forest-product marketing should integrate sustainability with trust-building strategies. Transparent information, credible certification, traceability, and consistent product quality can strengthen Consumer Trust and subsequently Purchase Intention. Such efforts can create stronger market incentives for responsible forest-resource utilization and broader acceptance of sustainable forest products. Future research could examine additional factors, such as environmental concern, green product knowledge, attitudes, and perceived value, to further explain sustainable forest-product purchasing behavior.

Conclusions

This study demonstrates that Perceived Sustainability of

Forest Products positively and significantly influences Consumer Trust and Purchase Intention, while Consumer Trust positively affects Purchase Intention and significantly mediates the relationship between perceived sustainability and purchase intention. The stronger effect of Consumer Trust on Purchase Intention indicates that sustainability perceptions are more effective in encouraging purchase intentions when supported by consumer confidence in product credibility, reliability, and sustainability claims. Therefore, sustainable forest-product marketing should combine sustainability attributes with trust-building strategies through transparent information, traceability, credible certification, and consistency between sustainability claims and actual practices. These efforts can strengthen consumer confidence and support broader market acceptance of sustainable forest products.

References

1. Alhomaïd, A. (2025). Building Trust in Sustainable Journeys: The Interplay Between Green Marketing, Green Brand Trust, and Tourism Purchase Intentions. *Sustainability*, 17(18), 8464. <https://doi.org/10.3390/su17188464>
2. Atkinson, L., & Rosenthal, S. (2014). Signaling the Green Sell: The Influence of Eco-Label Source, Argument Specificity, and Product Involvement on Consumer Trust. *Journal of Advertising*, 43(1), 33–45. <https://doi.org/10.1080/00913367.2013.834803>
3. Bagia, B., . S., Master of Science in Management Study Program Faculty of Economics and Business Universitas Bung Hatta, Indonesia, Mulatsih, L. S., & Master of Science in Management Study Program Faculty of Economics and Business Universitas Bung Hatta, Indonesia. (2024). Building Green Trust: The Influence of Green Perceived Value and Green Product on Purchase Intentions. *Journal of Economics, Finance And Management Studies*, 07(12). <https://doi.org/10.47191/jefms/v7-i12-52>
4. Baharuddin, S. M., Badaruddin, B., Fatmasari, F., & Hafipah, H. (2026). Building trust, reducing skepticism: Green branding and sustainable purchase behavior in Indonesia. *Asian Management and Business Review*, 259–273. <https://doi.org/10.20885/AMBR.vol6.iss1.art16>
5. Borah, P. S., Dogbe, C. S. K., & Marwa, N. (2024). Generation Z's green purchase behavior: Do green consumer knowledge, consumer social responsibility, green advertising, and green consumer trust matter for sustainable development? *Business Strategy and the Environment*, 33(5), 4530–4546. <https://doi.org/10.1002/bse.3714>
6. Bösch, M. (2025). What explains the uneven uptake of forest certification at the global level? New evidence from a panel-data analysis. *World Development*, 188, 106890. <https://doi.org/10.1016/j.worlddev.2024.106890>
7. Chang, J. B., Song, S.-H., Kim, D., & Chong, H. (2024). Factors influencing the online purchase

- satisfaction, frequency, and intention of non-timber forest products. *Korean Journal of Agricultural Science*, 51(2), 97–108. <https://doi.org/10.7744/kjoas.510201>
8. Cho, M., Ko, E., & Borenstein, B. E. (2024). The interaction effect of fashion retailer categories on sustainable labels: The role of perceived benefits, ambiguity, trust, and purchase intention. *International Journal of Advertising*, 43(6), 1016–1038. <https://doi.org/10.1080/02650487.2024.2306763>
 9. Corticeiro, S., Brás, G., Tomé, M., Lillebø, A., & Vieira, H. (2024). Forest certification and economic insights: A European perspective. *Frontiers in Forests and Global Change*, 7, 1464837. <https://doi.org/10.3389/ffgc.2024.1464837>
 10. Damberg, S., Saari, U. A., Fritz, M., Dlugoborskyte, V., & Božič, K. (2024). Consumers' purchase behavior of Cradle to Cradle Certified® products—The role of trust and supply chain transparency. *Business Strategy and the Environment*, 33(8), 8280–8299. <https://doi.org/10.1002/bse.3919>
 11. Deniz, T. (2023). The Effect of Forest Certification on Log Sale Prices: A Case Study in Northwestern Turkey. *Forests*, 14(3), 596. <https://doi.org/10.3390/f14030596>
 12. Dewa Ayu Made Dwi Hendri Widiartari & I Gusti Ayu Ketut Giantari. (2026). PERAN GREEN TRUST MEMEDIASI PENGARUH GREEN PERCEIVED VALUE TERHADAP GREEN PURCHASE INTENTION. *E-Jurnal Manajemen Universitas Udayana*, 15(7), 777–792. <https://doi.org/10.24843/EJMUNUD.2026.v15.i7.p03>
 13. Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R: A Workbook*. Springer International Publishing. <https://doi.org/10.1007/978-3-030-80519-7>
 14. Heino, E., Kara, H., & Nordberg, C. (2024). Changes in the Well-Being of Foreign Language Speaking Migrant Mothers Living in Finland during the Initial Stage of the COVID-19 Pandemic. *Social Sciences*, 13(1), 42. <https://doi.org/10.3390/socsci13010042>
 15. Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
 16. Koay, K. Y., & Ahmed, H. I. (2025). Understanding consumers' purchase intentions for green cosmetic products: An integrated perspective. *Social Responsibility Journal*, 21(9), 2098–2111. <https://doi.org/10.1108/SRJ-04-2025-0382>
 17. Kock, N., & Hadaya, P. (2018). Minimum sample size estimation in PLS-SEM: The inverse square root and gamma-exponential methods. *Information Systems Journal*, 28(1), 227–261. <https://doi.org/10.1111/isj.12131>
 18. Larasatie, P., Handrito, R. P., Fitriastuti, T., & Sari, D. M. (2023). Who Prefers Legal Wood: Consumers with Utilitarian or Hedonic Shopping Values? *Forests*, 14(11), 2163. <https://doi.org/10.3390/f14112163>
 19. Lee, E. J., Bae, J., & Kim, K. H. (2020). The effect of environmental cues on the purchase intention of sustainable products. *Journal of Business Research*, 120, 425–433. <https://doi.org/10.1016/j.jbusres.2019.10.048>
 20. Li, Y., Hu, Y., & Li, K. (2024). Global bamboo forest certification: The state of the art. *Advances in Bamboo Science*, 7, 100077. <https://doi.org/10.1016/j.bamboo.2024.100077>
 21. Lu, H., & Liu, Z. (2024). Exploring the Key Factors for Purchasing Forest-Certified Products in the Context of Sustainable Forest Consumption. *Sustainability*, 16(24), 10927. <https://doi.org/10.3390/su162410927>
 22. M Qoshid Al Hadi, Wahab, A., & Budi, I. S. (2024). Green Practices and Purchase Intentions: The Mediating Role of Green Image and Trust Among Muslim Consumers. *Global Review of Islamic Economics and Business*, 12(2), 075–092. <https://doi.org/10.14421/grieb.2024.122-01>
 23. Maleknia, R., & Hälälışan, A. F. (2025). Purchasing certified forest products to participate in sustainable forest management: Unveiling the drivers of consumers' intention. *Forest Policy and Economics*, 178, 103592. <https://doi.org/10.1016/j.forpol.2025.103592>
 24. Mardius, P. R., Sulastri, S., Shihab, M. S., & Yuliani, Y. (2023). Eco-label, kepedulian lingkungan, dan perilaku pembelian hijau: Sebuah sudut pandang Generasi Z tentang semen ramah lingkungan. *Jurnal Manajemen Maranatha*, 22(2), 193–202. <https://doi.org/10.28932/jmm.v22i2.6363>
 25. Mawardi, M. K., Iqbal, M., Astuti, E. S., Alfisyahr, R., & Mappatempo, A. (2024). Determinants of green trust on repurchase intentions: A survey of Quick Service Restaurants in Indonesia. *Cogent Business & Management*, 11(1), 2318806. <https://doi.org/10.1080/23311975.2024.2318806>
 26. Nguyen Tran Cam, L. (2023). A rising trend in eco-friendly products: A health-conscious approach to green buying. *Heliyon*, 9(9), e19845. <https://doi.org/10.1016/j.heliyon.2023.e19845>
 27. Nguyen-Viet, B., Tran, C. T., & Ngo, H. T. K. (2024). Corporate social responsibility and behavioral intentions in an emerging market: The mediating roles of green brand image and green trust. *Cleaner and Responsible Consumption*, 12, 100170. <https://doi.org/10.1016/j.clrc.2024.100170>

28. Paudel, B., & Zhou, M. (2024). Are consumers “green” enthusiasts or skeptics? Evidence from nontimber forest products. *Forest Policy and Economics*, 168, 103302. <https://doi.org/10.1016/j.forpol.2024.103302>
29. Rana, P., & Sills, E. O. (2024). Inviting oversight: Effects of forest certification on deforestation in the Brazilian Amazon. *World Development*, 173, 106418. <https://doi.org/10.1016/j.worlddev.2023.106418>
30. Rimiyati, H., & Wardana, I. K. (2026). Determining Green Purchase Intention: The Role of Perceived Green Value, Green Trust, and Attitude Toward Green Products. *Indonesian Journal of Advanced Research*, 5(4), 497–518. <https://doi.org/10.55927/ijar.v5i4.16362>
31. Rizomyliotis, I. (2026). Consumer Trust and Online Purchase Intention for Sustainable Products. *American Behavioral Scientist*, 70(5), 706–724. <https://doi.org/10.1177/00027642241236174>
32. Rocchi, L., Campioni, R., Brunori, A., & Mariano, E. (2023). Environmental certification of woody charcoal: A choice experiments application. *Forest Policy and Economics*, 154, 103042. <https://doi.org/10.1016/j.forpol.2023.103042>
33. Singer, H., & Özşahin, Ş. (2024). An interval-valued intuitionistic fuzzy analytic hierarchy process model for understanding consumer decision-making in non-wood forest product purchases. *Journal of Retailing and Consumer Services*, 78, 103734. <https://doi.org/10.1016/j.jretconser.2024.103734>
34. Spence, M. (1973). Job Market Signaling. *The Quarterly Journal of Economics*, 87(3), 355. <https://doi.org/10.2307/1882010>
35. Sugiyono. (2022). *Metode Penelitian Kuantitatif, Kualitatif, dan R & D*. ALFABETA.
36. Tan, C. N.-L., Fauzi, M. A., & Harun, S. A. B. (2025). From perceived green product quality to purchase intention: The roles of price sensitivity and environmental concern. *Marketing Intelligence & Planning*, 43(7), 1329–1348. <https://doi.org/10.1108/MIP-10-2024-0703>
37. Tian, N., Chhetri, S. G., Gutierrez-Castillo, A., Gan, J., & Pelkki, M. (2023). Understanding Nonindustrial Private Forest Landowners’ Perspectives on the Benefits Associated with Sustainable Forest Management Certification. *Forests*, 14(2), 241. <https://doi.org/10.3390/f14020241>
38. Truong, D. D., Mai, N. T., Tam, D. D., & Huan, L. H. (2026). Assessing the effects of ESG awareness on purchase intention of eco-labeled forest products: Mediating role of consumer attitudes and moderating influence of green product knowledge. *Cleaner and Responsible Consumption*, 21, 100425. <https://doi.org/10.1016/j.clrc.2026.100425>
39. Tusholihah, A., & Nora, L. (2025). Consumer’s Purchase Intention Towards Sustainable Fashion Products: Effect of Perceived Consumer Effectiveness and Attitude. *Jurnal Aplikasi Bisnis Dan Manajemen*. <https://doi.org/10.17358/jabm.11.1.56>
40. Vironika, P., & Maulida, M. (2025). Green Purchase Behavior in Indonesia: Examining the Role of Knowledge, Trust and Marketing. *Challenges*, 16(3), 41. <https://doi.org/10.3390/challe16030041>
41. Wu, M., & Long, R. (2024). How do perceptions of information usefulness and green trust influence intentions toward eco-friendly purchases in a social media context? *Frontiers in Psychology*, 15, 1429454. <https://doi.org/10.3389/fpsyg.2024.1429454>
42. Zubizarreta, M., Arana-Landín, G., Sigüenza, W., & Cuadrado, J. (2024). Forest certification and its impact on business management and market performance: The key role of motivations. *Forest Policy and Economics*, 166, 103266. <https://doi.org/10.1016/j.forpol.2024.103266>