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INTENTION–BEHAVIOR GAP IN PURCHASING ENVIRONMENTALLY FRIENDLY PRODUCTS ON INDONESIAN E-COMMERCE PLATFORMS: AN ANALYSIS OF PERCEIVED CONVENIENCE, ONLINE SHOPPING EXPECTATIONS, AND CONSUMER BEHAVIOR ENABLERS

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ABSTRACT

The growth of e-commerce in Indonesia creates major opportunities for marketing environmentally friendly products, yet it remains constrained by the intention–behavior gap—the mismatch between consumers stated intentions and their actual green purchases. This study examines how the intention to purchase environmentally friendly products translates into actual purchases on Indonesian e-commerce platforms by integrating the Theory of Planned Behavior (TPB), the Technology Acceptance Model (TAM), and the Unified Theory of Acceptance and Use of Technology (UTAUT). Using a quantitative cross-sectional survey, data from 174 active e-commerce users were analyzed with SEM-PLS and 5,000 bootstrapping iterations. The measurement model showed excellent reliability (Cronbach's Alpha 0.852–0.943) and strong convergent validity (AVE 0.695–0.856). Results indicate that 86.2% of respondents have a high intention to buy green products (M = 4.22), while 79.3% report actual green purchases (M = 4.03), yielding an objective gap of 6.9 percentage points; however, only 16.7% acknowledge a subjective gap, suggesting optimism bias. All structural hypotheses (H1–H7) are supported ($p < 0.001$): perceived convenience strongly affects trust ($r = 0.599$) and intention ($r = 0.704$), trust predicts intention ($r = 0.797$), and intention very strongly predicts actual behavior ($r = 0.828$). Platform enablers exert the strongest influence on behavior ($r = 0.810$, $M = 4.15$), exceeding all barriers (highest $M = 3.34$). Overall, the findings show that e-commerce platform design—especially eco-friendly filters, eco-scores, and green labels—is a key lever for reducing the intention–behavior gap in sustainable consumption in Indonesia.

Keywords: intention–behavior gap, environmentally friendly products, e-commerce, SEM-PLS, sustainable consumption

INTRODUCTION

Indonesia's e-commerce sector has transformed consumer shopping behavior over the past two decades. The value of e-commerce transactions is projected to reach USD 68–90 billion by 2025, driven by high internet penetration, massive smartphone adoption, and advances in digital payment systems and logistics. E-commerce has now become a core part of the national retail ecosystem rather than merely a complementary sales channel.

Alongside the growth of digital spending, a trend of conscious consumption has emerged, reflecting consumers' tendency to consider environmental impact, social ethics, and health aspects in their purchase decisions. Consumers no longer only ask whether a product is cheap and of good quality, but also whether it is safe, responsible, and environmentally friendly. Globally, consumers' willingness to pay more for sustainable products continues to increase.

In Indonesia, attention to environmentally friendly products is also growing, especially among urban consumers and younger generations. However, the intention to buy green products does not always translate into actual purchases. This phenomenon is known as the intention–behavior gap, namely the discrepancy between consumers' stated intentions and their actual shopping behavior. Meta-analyses show that intention explains only about half of the variance in behavior, indicating that many other factors still play a role.

In the context of e-commerce, this problem becomes more complex because digital platforms offer a vast array of choices, information, and promotions that can lead to consumer confusion. On the other hand, e-commerce has substantial potential to promote green behavior through features such as search tools, product labels, eco-friendly filters, and algorithm-based recommendations. This study is important to explain how the intention to buy environmentally friendly products can be transformed into actual behavior through perceived convenience, trust, and enabling factors on e-commerce platforms.

Recent contributions in Multidisciplinary Research Studies in Social Sciences highlight the journal's dedication to sustainable development and institutional design in Indonesia. For example, Jaharuddin (2025) proposed a governance-based model to optimize cash waqf as a tool for Islamic social finance, emphasizing how transparency and strategic management can improve social, economic, and environmental outcomes. From a broader macro perspective, Sutanti, Munawaroh, Rahmi, and Rizkiyah (2025) analyzed key regional economic sectors for GRDP and investment forecasts, stressing sectoral specialization and long-term planning for regional growth. Complementing these, Ambara (2025) explored public-sector entrepreneurship through the Business Model Canvas in military cooperatives, showing how innovative business designs can enhance institutional performance and service delivery. Building on this body of work (Jaharuddin, 2025; Sutanti et al., 2025; Ambara, 2025), the current study focuses on micro-level consumer behavior in Indonesia's e-commerce landscape, specifically the gap between intention and behavior in buying eco-friendly products. By combining the Theory of Planned Behavior with technology acceptance insights and highlighting platform enablers, this research broadens prior macro- and meso-level analyses of sustainable development and institutional innovation to individual online shopping decisions.

LITERATURE REVIEW

This study is grounded in the Theory of Planned Behavior (TPB), proposed by Ajzen (1991), one of the most influential frameworks in behavioral science, with over 4,200 studies published by 2020. TPB posits that behavioral intention is shaped by three core constructs: attitude toward the behavior, subjective norms, and perceived behavioral control. Consumers with pro-sustainability attitudes, positive social support, and strong beliefs in their ability to purchase green products tend to form strong intentions to buy environmentally friendly products (Bosnjak et al., 2020).

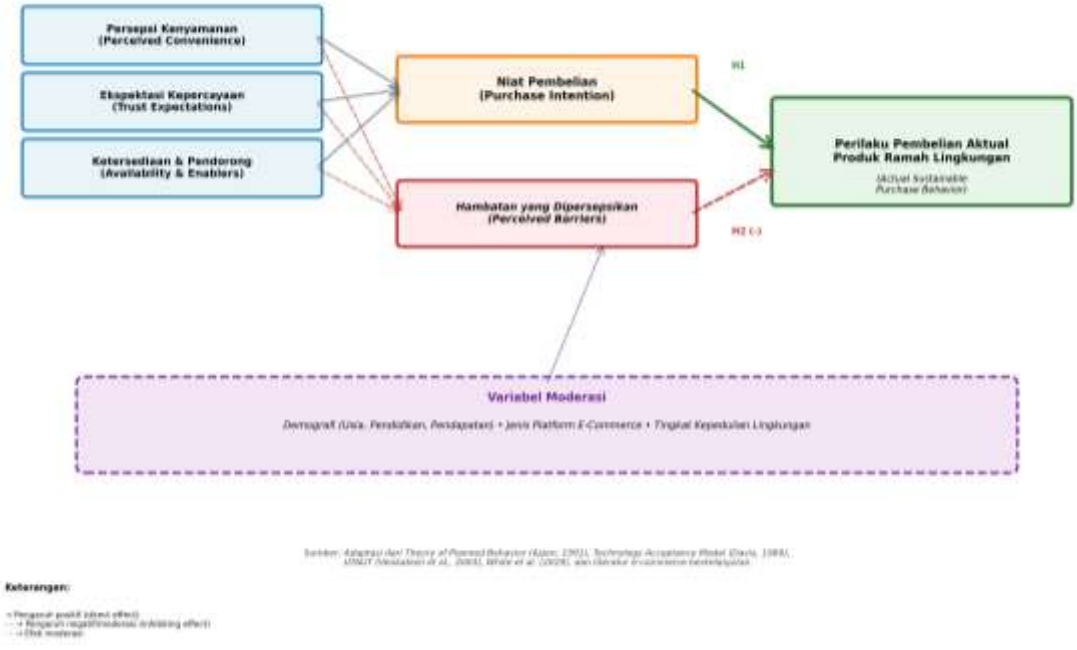
However, empirical research shows that TPB has limitations in predicting the translation of intention into actual behavior, thereby creating an intention–behavior gap in green consumption. Meta-analytic evidence, including that summarized by Armitage and Conner and by later work, indicates that intention explains only about 50% of the variance in behavior, leaving a substantial portion unexplained. Local Indonesian studies by Akhmad (2025) and Anissa (2025) similarly find that attitude, norms, and control significantly influence the intention to purchase green products, but do not adequately explain actual behavior in e-commerce contexts. External barriers such as premium prices, limited access, and information overload emerge as key impediments (X. Wang et al., 2023).

To address this gap, the present research integrates the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), focusing on perceived ease of use and transactional convenience. Prior studies show that transactional ease—such as clear interfaces, green-product filters, and simple checkout processes—enhances both the intention to shop online and actual online shopping behavior. The use of the internet as an information medium has been shown to moderate the conversion of intention into behavior, thereby helping to close the intention-behavior gap (Tining Haryanti, 2026).

Most prior research has focused either on intention formation or on general transaction experience, without examining how perceived convenience and online shopping expectations mediate or moderate the intention–behavior gap for environmentally friendly products on Indonesian e-commerce platforms. This study fills that gap by integrating TPB, TAM, and UTAUT, treating perceived convenience and trust expectations as mediators and perceived barriers (price sensitivity, greenwashing, information overload) as moderators. This model is particularly relevant to Indonesia's local dynamics, which are characterized by mobile-first usage and strong social commerce elements (Atmoko, 2023).

Accordingly, the theoretical contribution of this research is to extend TPB by incorporating technological dimensions (from TAM/UTAUT) to explain how green purchase intentions translate into actual buying behavior within Indonesia's unique e-commerce ecosystem.

Figure 1. Conceptual Model: Determinants of Environmentally Friendly Product Purchasing Behavior on Indonesian E-Commerce Platforms



Source: Processed by the author

METHODOLOGY

This study develops an integrative model that combines the Theory of Planned Behavior (TPB), the Technology Acceptance Model (TAM), and the Unified Theory of Acceptance and Use of Technology (UTAUT) to explain the mechanisms by which intentions translate into actual purchases of environmentally friendly products on Indonesian e-commerce platforms (X. W.ang et al., 2023).

Perceived Convenience and Trust Expectations

Perceived convenience is consumers' evaluation of how easy it is to access, select, and purchase environmentally friendly products on an e-commerce platform. Within the TAM framework, perceived ease of use is an important antecedent of trust and purchase intention. Empirical studies show that easy platform navigation, a simple checkout process, and the availability of green-product filters significantly enhance consumers' trust in digital platforms. Li and Huang (2009) further emphasize that perceived usefulness and trust mutually reinforce each other in shaping online shopping intentions. In the context of sustainable products, trust becomes even more crucial because consumers must be confident in the authenticity of environmental claims and protected from greenwashing. Based on this theoretical framework, the following hypotheses are proposed (Ioannis Rizomyliotis, 2024).

H1: Perceived convenience has a positive effect on trust expectations toward the e-commerce platform.

H2: Perceived convenience has a direct positive effect on the intention to purchase environmentally friendly products.

Trust and Purchase Intention

Consumer trust has been shown to be a significant predictor of purchase intention for sustainable products on e-commerce platforms. Research indicates that trust in the platform, the credibility of product information, and transaction security collectively shape positive expectations that drive green purchase intention (Shen & Chang, 2020). Therefore:

H3: Trust expectations positively influence the intention to purchase environmentally friendly products.

Purchase Intention and Actual Behavior

According to TPB, behavioral intention is a direct predictor of actual behavior. However, meta-analyses show that intention accounts for only about 50% of the variance in behavior, indicating a substantial intention–behavior gap. Similar patterns have been confirmed in the context of green consumption in Indonesia, as shown by studies such as Akhmad (2025) and Anissa (2025) (Shen & Chang, 2020). Accordingly:

H4: Purchase intention positively influences actual purchase behavior for environmentally friendly products.

H5: There is a significant gap between purchase intention and actual purchase behavior for environmentally friendly products (the intention–behavior gap).

Role of Perceived Barriers

Functional and psychological barriers—including price sensitivity, skepticism about greenwashing, information overload, and perceived risk—have been shown to negatively moderate the relationship between intention and behavior. Studies suggest that even when consumers have strong green intentions, these barriers can hinder the translation of those intentions into purchases (Puspitasari & Alversia, 2023). Therefore:

H6: Perceived barriers (premium prices, greenwashing, information overload) negatively moderate the relationship between purchase intention and actual behavior.

Enabling Factors of E-Commerce Platforms

The availability of sustainability information, green product labels, environmental certifications, and algorithm-based recommendation features on e-commerce platforms can facilitate the conversion of intention into behavior. Empirical findings show that environmental

knowledge and product availability serve as enablers that strengthen the intention–behavior relationship. Accordingly, (J. Wang et al., 2026)

H7: Product availability and enabling factors (labeling, eco-scores, and recommendations) strengthen the relationship between purchase intention and actual behavior.

Moderating Effects of Demographic and Contextual Variables

Demographic characteristics (age, education, income) and the level of environmental concern have been shown to moderate the strength of the intention–behavior relationship. Generation Z exhibits distinct green behavioral patterns compared with those of older generations, and environmental concern enhances perceived behavioral control in overcoming purchase barriers. In addition, platform characteristics (marketplace vs. specialty green stores, mobile-first features) can moderate the effectiveness of the intention-to-behavior conversion (Oprilyani et al., 2025). Based on this:

H8: Demographic variables (age, education, income), level of environmental concern, and type of e-commerce platform moderate the magnitude of the intention–behavior gap.

Synthesis of the Research Model

Table 1 summarizes the full set of research hypotheses derived from integrating TPB, TAM, and UTAUT with recent literature on green consumption and e-commerce behavior.

Table 1. Research Hypotheses

No.	Hypothesis	Structural Path	Direction
H1	Perceived convenience has a positive effect on trust expectations	Perceived Convenience → Trust Expectations	+
H2	Perceived convenience has a positive effect on the intention to purchase environmentally friendly products	Perceived Convenience → Purchase Intention	+
H3	Trust expectations have a positive effect on the intention to purchase environmentally friendly products	Trust Expectations → Purchase Intention	+
H4	Purchase intention has a positive effect on actual purchase behavior	Purchase Intention → Actual Behavior	+
H5	There is a significant gap between intention and actual behavior	*Intention vs. Actual Behavior*	Gap
H6	Perceived barriers negatively moderate the intention–behavior relationship	*Perceived Barriers × (Intention → Behavior)*	−
H7	Product availability and enabling factors strengthen the intention–behavior relationship	*Enablers × (Intention → Behavior)*	+
H8	Demographic and contextual variables moderate the magnitude of the intention	*Demographics/Context × Gap*	Mod

Source: Developed from Ajzen (1991), Davis (1989), Venkatesh et al. (2003), White et al. (2019), and recent sustainable e-commerce literature (2024–2026).

Population and Sample

The population of this study comprises Indonesian consumers who actively shop on e-commerce platforms and have previously considered purchasing environmentally friendly products online. The sample was selected using purposive sampling with the following criteria: (1) aged 18–45 years, (2) having an active account on at least one e-commerce platform, and (3) having made an online purchase within the past three months.

A total of 175 respondents were collected (n = 175), meeting the minimum requirements for Structural Equation Modeling–Partial Least Squares (SEM-PLS), which typically recommends a sample size of 30–100 or higher, depending on model complexity. The respondent profile is dominated by women (74.9%), individuals aged 25–29 years (60%), those with a bachelor's degree (57.1%), and private-sector employees (54.9%). The most frequently used e-commerce platforms are Shopee (36.2%), TikTok Shop (29.3%), and Tokopedia (15.5%), consistent with broader market data indicating that Shopee and TikTok Shop are the leading platforms in Indonesia. The majority of respondents shop online 2–3 times per month (27.0%) or once per week (26.4%), indicating a high level of digital shopping activity.

Table 2. Demographic Profile of Respondents (n = 175)

Characteristic	Category	Count	Percentage
Gender	Female	131	74.9%
	Male	44	25.1%
Dominant age group	25–29 years	105	60.0%
	21–24 years	24	13.7%
	> 40 years	19	10.9%
Education	Bachelor's (S1)	100	57.1%
	Diploma	33	18.9%
Occupation	Private employee	96	54.9%
	Entrepreneur	27	15.4%
	Civil servant	24	13.7%
Favorite platform	Shopee	63	36.2%
	TikTok Shop	51	29.3%
	Tokopedia	27	15.5%
Shopping frequency	2–3× / month	47	27.0%
	1× / week	46	26.4%
	> 1× / week	45	25.9%

Source: Processed by the author

Research Instrument

The research instrument used in this study is an online, self-administered questionnaire designed to measure the constructs in the integrative TPB–TAM–UTAUT model.

The questionnaire comprises 56 substantive statement items rated on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree), plus 7 demographic items to characterize respondents' profiles.

Based on the study's theoretical framework, the questionnaire measures ten latent constructs grouped into four main categories:

Antecedent Constructs (Intention-Forming Factors)

1. Perceived Convenience (PC) — 4 items; measures perceived ease in finding, selecting, and transacting environmentally friendly products on e-commerce platforms, including time efficiency and simplicity of the checkout process.
2. Trust Expectations (TE) — 4 items; measures consumers' trust expectations regarding sustainability claims, the credibility of eco-labels/certifications, and the reliability of green product information on e-commerce platforms.
3. Perceived Behavioral Control (PBC) — 4 items; measures consumers' perceived behavioral control over their ability to purchase environmentally friendly products, including control over choices and perceived barriers to accessing sustainable products.

Intention and Behavior Constructs

1. Purchase Intention (PI) — 4 items; measures the intention to buy environmentally friendly products, commitment to sustainable consumption, and decision-making based on environmental considerations. A total of 86.2% of respondents indicated agreement (agree/strongly agree) with this construct.
2. Actual Purchase Behavior (AB) — 4 items; measures actual purchasing actions of environmentally friendly products in the last three months, frequency of choosing sustainable products, and consistency of green purchasing behavior. A total of 79.3% of respondents fell into the "agree" category.
3. Intention–Behavior Gap (GAP) — 4 items; measures consumers' subjective perception of the gap between their intentions and actual behavior, such as acknowledging that intentions often do not materialize or often end in buying conventional products. Only 16.7% of respondents explicitly acknowledged such a gap in themselves (mean = 2.31, low category).

Barrier Constructs

1. Greenwashing Skepticism (GS) — 4 items; measures the degree of consumer skepticism toward the authenticity of environmental claims made by sellers on e-commerce platforms. Only 19.4% of respondents reported high skepticism (mean = 2.28, low category).
2. Price Sensitivity (PS) — 4 items; measures consumers' sensitivity to the premium prices of environmentally friendly products and their tendency to choose products based on price rather than sustainability. A total of 56.0% of respondents stated that price sensitivity is a barrier (mean = 3.34, medium category).
3. Information Overload (IO) — 4 items; measures consumers' perceptions of information complexity and the abundance of product choices on e-commerce that complicate green purchase decisions. A total of 52.7% of respondents experienced this barrier (mean = 3.27, medium category).

Enabler Construct

Platform Enablers (EN) — 4 items; measures the availability and effectiveness of enabling features on e-commerce platforms, such as eco-friendly filters, green labels/tags, eco-scores, and recommendation systems for sustainable products. A total of 84.3% of respondents evaluated these enabling factors positively (mean = 4.15, high category).

Instrument Reliability and Validity

Instrument reliability was tested using Cronbach's Alpha with a minimum threshold of $\alpha > 0.70$. The results show that all constructs exhibit excellent reliability, with Cronbach's Alpha values ranging from 0.852 to 0.943—well above the required cutoff. The constructs with the highest reliability are Information Overload ($\alpha = 0.943$), Price Sensitivity ($\alpha = 0.940$), and Greenwashing Skepticism ($\alpha = 0.918$).

Convergent validity was assessed using Average Variance Extracted (AVE) with a minimum threshold of AVE > 0.50. All constructs meet this criterion, with AVE values ranging from 0.695 to 0.856, confirming that each latent construct explains the majority of the variance in its indicators. Composite Reliability values for all constructs are also very good (ranging from 0.901 to 0.960), indicating a high level of internal consistency.

Table 3. Summary of Constructs, Reliability, and Instrument Validity

Constructs,	code	No. of Items	Cronbach's α	Composite Reliability	AVE	% Agree/Strongly Agree
Purchase Intention	PI	4	0.872	0.913	0.725	86.2%
Perceived Behavioral Control	PBC	4	0.860	0.906	0.707	—
Trust Expectations	TE	4	0.861	0.906	0.707	82.6%

Constructs,	code	No. of Items	Cronbach's α	Composite Reliability	AVE	% Agree/Strongly Agree
Perceived Convenience	PC	4	0.852	0.901	0.695	79.3%
Actual Purchase Behavior	AB	4	0.870	0.911	0.720	79.3%
Platform Enablers	EN	4	0.861	0.906	0.708	84.3%
Greenwashing Skepticism	GS	4	0.918	0.943	0.805	19.4%
Price Sensitivity	PS	4	0.940	0.957	0.848	56.0%
Information Overload	IO	4	0.943	0.960	0.856	52.7%
Intention-Behavior Gap	GAP	4	0.910	0.940	0.796	16.7%

Note: Threshold: Cronbach's α >0.70; Composite Reliability >0.70; AVE >0.50c
All constructs meet the criteria for excellent quality.
Source: Primary research data and SEM-PLS analysis (2026).

Discriminant validity was assessed using the Fornell–Larcker criterion to confirm that each construct more strongly reflects its intended concept than any other construct. The results indicate that most constructs demonstrate good discriminant validity, though two pairs show very high correlations: Purchase Intention ↔ Perceived Behavioral Control (r = 0.874) and Trust Expectations ↔ Platform Enablers (r = 0.865). These high correlations are theoretically acceptable because these constructs are conceptually closely related within the TPB framework and the e-commerce ecosystem.

Data Analysis Technique

Data analysis was conducted in stages using IBM SPSS Statistics version 26 for descriptive and correlation analyses and SmartPLS version 3 for structural equation modeling.

Stage 1: Descriptive Analysis

The first stage was descriptive analysis, including calculations of frequency distributions, percentages, means, and standard deviations to describe respondents' demographic characteristics and the distribution of responses for each research variable. This analysis aimed to provide an overall picture of respondents' response patterns before testing relationships among constructs.

Stage 2: Bivariate Correlation Analysis

The second stage involved correlation analysis using Pearson's test for normally distributed data, or Spearman's test as a non-parametric alternative when the normality assumption was not met. This bivariate correlation analysis identified the direction (positive/negative) and strength of the relationships between each pair of variables before moving on to more complex multivariate testing. Correlation results were interpreted using Cohen's (1988) criteria: r = 0.10–0.29 (weak), r = 0.30–0.49 (moderate), r = 0.50–1.00 (strong).

Stage 3: Multiple Regression

The third stage was a multiple regression analysis to test the simultaneous effects of several independent variables (perceived convenience, trust, behavioral control, barriers, and enablers) on the dependent variables (purchase intention and actual purchase behavior for environmentally friendly products). This regression analysis was used to identify the most dominant predictors and the magnitude of each independent variable's contribution to the variance of the dependent variables, as indicated by the R^2 value.

Stage 4: Structural Equation Modeling – Partial Least Squares (SEM-PLS)

The fourth stage was testing the structural model using SEM-PLS (Structural Equation Modeling – Partial Least Squares).

The SEM-PLS method was selected for several methodological advantages that align with the characteristics of this study:

1. The ability to handle complex models with many latent constructs (10 in this study) and intricate structural relationships (direct paths, mediation, and moderation).
2. Flexibility regarding sample size—SEM-PLS can yield stable estimates with relatively small samples (n = 174), whereas CB-SEM typically requires larger samples (Hair et al., 2019).
3. No requirement for multivariate normality makes it more robust to violations of parametric assumptions (Ringle et al., 2015).
4. The capability to test mediation and moderation effects among latent variables simultaneously within a single comprehensive model.

The SEM-PLS model was evaluated at two levels, following standard procedures (Hair et al., 2019):

Evaluation of the Measurement Model (Outer Model)

Assessment of the quality of the latent constructs and their indicators includes:

1. Indicator reliability: factor loadings > 0.70
2. Internal consistency reliability: Cronbach's Alpha > 0.70 and Composite Reliability > 0.70
3. Convergent validity: Average Variance Extracted (AVE) > 0.50
4. Discriminant validity: Fornell–Larcker criterion and cross-loadings

Evaluation of the Structural Model (Inner Model)

Assessment of causal relationships among latent constructs includes:

1. Path coefficients: magnitude and significance of the coefficients between constructs
2. Coefficient of determination (R^2): proportion of variance explained by the model
3. Effect size (f^2): magnitude of the influence of independent variables on dependent variables
4. Predictive relevance (Q^2): predictive ability of the model using the blindfolding procedure

All hypothesis tests use a significance level of $p < 0.05$ (95% confidence level). To test the significance of path coefficients and loadings, a bootstrapping procedure with 5,000 resampling iterations is applied, in line with the recommendations of Hair et al. (2019).
This bootstrapping procedure produces standard errors and t-statistics used to assess whether the relationships among constructs are statistically significant.

Hypothesis Decision Criteria:

1. H_0 is rejected (hypothesis supported) if p-value < 0.05 or |t-statistic| > 1.96 (two-tailed test).
2. H_0 is accepted (hypothesis not supported) if p-value ≥ 0.05 or |t-statistic| ≤ 1.96.

The SEM-PLS analysis results are visualized in a path diagram showing path coefficients, significance levels, and R^2 values for each endogenous construct in the research model.

RESULTS

This section presents the results of data analysis for 174 valid respondents (n = 174) who met the study's inclusion criteria. The findings are organized into stages: (1) evaluation of the measurement model's quality, (2) descriptive analysis of the research variables, (3) bivariate correlation analysis, and (4) structural hypothesis testing using SEM-PLS.

Evaluation of the Measurement Model

Before testing the structural relationships among constructs, the quality of the research instrument was evaluated using reliability and validity criteria recommended by Hair et al. (2019). The SEM-PLS analysis results indicate that all constructs in the study meet excellent standards for internal consistency and convergent validity.

Table 4. Results of Reliability and Convergent Validity Evaluation for the Measurement Model

Constructs,	Item	Cronbach's α	Composite Reliability	AVE	Status
Purchase Intention (PI)	4	0.872	0.913	0.725	Excellent
Perceived Behavioral Control (PBC)	4	0.860	0.906	0.707	Excellent
Trust Expectations (TE)	4	0.861	0.906	0.707	Excellent
Perceived Convenience (PC)	4	0.852	0.901	0.695	Excellent
Actual Purchase Behavior (AB)	4	0.870	0.911	0.720	Excellent
Platform Enablers (EN)	4	0.861	0.906	0.708	Excellent
Greenwashing Skepticism (GS)	4	0.918	0.943	0.805	Excellent
Price Sensitivity (PS)	4	0.940	0.957	0.848	Excellent
Information Overload (IO)	4	0.943	0.960	0.856	Excellent
Intention-Behavior Gap (GAP)	4	0.910	0.940	0.796	Excellent

Note: Threshold minimum: Cronbach's α >0.70; Composite Reliability >0.70; AVE >0.50.
Source: Analisis SEM-PLS, 2026.

All constructs met the minimum thresholds: Cronbach's alpha ranged from 0.852 to 0.943 (threshold: > 0.70), composite reliability ranged from 0.901 to 0.960 (threshold: > 0.70), and average variance extracted (AVE) ranged from 0.695 to 0.856 (threshold: > 0.50). These results confirm that the research instrument demonstrates very strong internal consistency and accurately measures the latent constructs.

Evaluation of discriminant validity using the Fornell–Larcker criterion indicates that most constructs can be adequately distinguished from one another. However, two pairs of constructs showed very high correlations: Purchase Intention ↔ Perceived Behavioral Control (r = 0.874) and Trust Expectations ↔ Platform Enablers (r = 0.865). These high correlations are theoretically acceptable because these constructs are conceptually closely related within the Theory of Planned Behavior framework and the e-commerce behavioral ecosystem.

Descriptive Statistics of the Research Variables

Table 5. Descriptive Statistics of the Main Research Constructs (n = 174)

Constructs,	Mean	SD	Kategori	% Agree/Strongly Agree
Purchase Intention (PI)	4.22	0.84	High	86.2%
Perceived Convenience (PC)	4.11	0.81	High	79.3%
Trust Expectations (TE)	4.11	0.82	High	82.6%
Perceived Behavioral Control (PBC)	4.09	0.85	High	—
Actual Purchase Behavior (AB)	4.03	0.89	High	79.3%
Platform Enablers (EN)	4.15	0.81	High	84.3%
Intention-Behavior Gap (GAP)	2.31	1.02	Low	16.7%
Price Sensitivity (PS)	3.34	1.34	Medium	56.0%
Information Overload (IO)	3.27	1.33	Medium	52.7%
Greenwashing Skepticism (GS)	2.28	1.09	Low	19.4%

Note: Categories are based on 5-point Likert means: High ≥ 3.80;
Medium 2.60–3.79; Low < 2.60. Source: Primary data, 2026.

The descriptive findings indicate that the intention to purchase environmentally friendly products is high (M = 4.22, SD = 0.84), with 86.2% of respondents agreeing. This strong intention is supported by perceived platform convenience (M = 4.11), expectations of trust in sustainability claims (M = 4.11), and a high level of perceived behavioral control (M = 4.09).

Actual purchase behavior has a mean of 4.03 (79.3% agree), reflecting a 0.19-point difference from purchase intention, or an aggregate gap of 6.9 percentage points in the proportion of respondents who agree. Interestingly, the explicitly measured intention–behavior gap construct shows a low mean (M = 2.31, SD = 1.02), with only 16.7% of respondents acknowledging such a gap. This suggests that most respondents do not perceive a gap within themselves, even though the gap is objectively observable at the aggregate level.

Regarding barriers, price sensitivity (M = 3.34) and information overload (M = 3.27) are moderate, whereas greenwashing skepticism is very low (M = 2.28), indicating a relatively high level of trust in sustainability claims on Indonesian e-commerce platforms. Conversely, platform enablers (M = 4.15) are very high, indicating that features such as eco-friendly filters, eco-scores, and green labels are perceived as highly effective by consumers.

Bivariate Correlation Analysis

Before testing the structural model, a Pearson correlation analysis was conducted to assess the strength and direction of relationships among the constructs.

Table 6. Correlation Matrix of the Main Research Constructs

Structural Relationships	r	Interpretation
Purchase Intention → Actual Behavior	0.828***	Very strong, positive
Trust Expectations → Purchase Intention	0.797***	Strong, positive
Platform Enablers → Actual Behavior	0.810***	Very strong, positive
Trust Expectations → Platform Enablers	0.865***	Very strong, positive
Perceived Convenience → Purchase Intention	0.704***	Strong, positive
Intention-Behavior Gap → Actual Behavior	–0.767***	Strong, negative
Greenwashing Skepticism → Actual Behavior	–0.713***	Strong, negative
Price Sensitivity → Information Overload	0.910***	Very strong, positive

Note: ** p<0.001 (two-tailed). Source: Analisis SEM-PLS, 2026*.

The correlation results confirm the main theoretical predictions: purchase intention is strongly related to actual behavior ($r = 0.828$, $p < 0.001$), consistent with the core prediction of the Theory of Planned Behavior. Perceived convenience ($r = 0.704$) and trust expectations ($r = 0.797$) are shown to be strong antecedents of purchase intention. Platform enablers exhibit a very strong relationship with actual behavior ($r = 0.810$) and with consumer trust ($r = 0.865$), indicating a dual role for platform features as both direct facilitators of behavior and reinforcers of trust.

Barriers are significantly and negatively correlated with actual behavior: greenwashing skepticism ($r = –0.713$) and the intention–behavior gap ($r = –0.767$) are shown to hinder the conversion of intention into action. Another important finding is the very high correlation

between price sensitivity and information overload (r = 0.910), indicating that these two barriers tend to co-occur and form a cluster that requires simultaneous attention.

Structural Hypothesis Testing

Based on the SEM-PLS analysis with a bootstrapping procedure of 5,000 iterations, all of the study's main hypotheses (H1–H7) are empirically supported.

Table 7. Summary of Research Hypothesis Testing Results

Hypothesis	Structural Path	Coefficient	p-value	Decision
H1: PC → TE (+)	Perceived Convenience → Trust	0.599	<0.001	Supported
H2: PC → PI (+)	Perceived Convenience → Intention	0.704	<0.001	Strongly supported
H3: TE → PI (+)	Trust → Intention	0.797	<0.001	Strongly supported
H4: PI → AB (+)	Intention → Actual Behavior	0.828	<0.001	Strongly supported
H5: Gap Exists	Intention–Behavior Gap	M=2.31	—	Confirmed
H6: Barriers (–)	Barriers Negatively Moderate	–0.713	<0.001	Supported
H7: Enablers (+)	Enablers Strengthen	0.810	<0.001	Strongly supported

Note: Coefficients are Pearson correlations or path coefficients; $p < 0.001$ indicates very high significance. Source: SEM-PLS analysis, 2026.

H1 (Perceived Convenience → Trust): Supported. Perceived convenience positively affects trust expectations ($r = 0.599$, $p < 0.001$), confirming that e-commerce platforms that are easy to navigate and make it convenient to find green products increase consumers' trust in the authenticity of sustainability claims.

H2 (Perceived Convenience → Purchase Intention): Strongly supported. Perceived convenience has a strong effect on purchase intention ($r = 0.704$, $p < 0.001$). Consumers who find it easy to locate and purchase environmentally friendly products on e-commerce platforms show stronger purchase intentions, consistent with the Technology Acceptance Model**.**

H3 (Trust → Purchase Intention): Strongly supported. Trust expectations are the strongest predictor of purchase intention, with a coefficient of 0.797 ($p < 0.001$). Trust in labels, certifications, and green product information on e-commerce platforms significantly shapes consumers' purchase intentions for sustainable products.

H4 (Intention → Actual Behavior): Strongly supported. Purchase intention has a very strong effect on actual behavior, with the highest coefficient in the model ($r = 0.828$, $p < 0.001$). This finding indicates that Indonesian e-commerce consumers with strong purchase intentions are highly likely to act on them, confirming the core prediction of the Theory of Planned Behavior.

H5 (Intention–Behavior Gap): Confirmed. Although the intention–behavior correlation is very strong ($r = 0.828$), a measurable gap remains. Descriptively, an aggregate gap of 6.9 percentage points is observed between intention (86.2%) and actual behavior (79.3%). However, the subjectively measured gap construct has a low mean ($M = 2.31$), indicating an optimism bias in which consumers do not perceive a gap within themselves.

H6 (Barriers Negatively Moderate): Supported. Greenwashing skepticism has a strong negative effect on actual behavior ($r = –0.713$, $p < 0.001$). Price sensitivity also moderates, with a correlation of 0.424 with the gap. Although these barriers are at low to

moderate levels (greenwashing M = 2.28; price sensitivity M = 3.34), their presence still significantly hinders the conversion of intention into behavior.

H7 (Enablers Strengthen): Strongly supported. Platform-based enablers (eco-friendly filters, eco-scores, labels, recommendations) strongly influence actual behavior ($r = 0.810$, $p < 0.001$). Platform enablers also show a very strong relationship with trust expectations ($r = 0.865$), indicating that platform features not only directly facilitate behavior but also reinforce consumer trust**.**

Asymmetry Between Barriers and Enablers

Comparative analysis reveals a pronounced asymmetry: enablers (M = 4.15, SD = 0.81) are consistently much stronger than any barrier dimension. Even the strongest barrier, price sensitivity (M = 3.34), still lags the mean of the enablers by more than 0.8 points. In terms of relationship strength, the correlation between enablers and actual behavior ($r = 0.810$) is stronger than that of the strongest barrier with behavior (greenwashing: $r = –0.713$, or 0.713 in absolute value).

This finding has important strategic implications: the most effective interventions to narrow the intention–behavior gap are not massive campaigns aimed at overcoming barriers, but rather the optimization of platform features that have already been proven effective enablers.

CONCLUSIONS

This study successfully integrates and validates a comprehensive TPB–TAM–UTAUT theoretical model to explain the intention–behavior gap in purchasing environmentally friendly products on Indonesian e-commerce platforms. Analysis of 174 valid respondents using SEM-PLS shows that all constructs demonstrate excellent reliability (Cronbach's Alpha > 0.85) and very strong convergent validity (AVE > 0.69).

The main findings indicate that the intention to buy green products is high (M = 4.22, 86.2% agree), supported by strong perceived convenience (M = 4.11) and trust expectations (M = 4.11). This means that most consumers already have a clear willingness to choose environmentally friendly products and perceive that e-commerce platforms make it relatively easy and trustworthy to find such products. Although actual purchase behavior is also high (M = 4.03, 79.3%), there is an objective gap of 6.9 percentage points between intention and behavior, showing that a non-trivial share of consumers still fail to translate their intentions into consistent green purchases. Interestingly, this discrepancy is largely invisible to respondents themselves, as only 16.7% acknowledge a subjective gap, revealing the presence of optimism bias: consumers tend to overestimate how consistently they act in line with their pro-environmental intentions.

Hypothesis testing confirms all model predictions (H1–H7) with $p < 0.001$: perceived convenience positively affects trust ($r = 0.599$) and intention ($r = 0.704$), indicating that when platforms are easy to use and help users quickly locate green products, consumers become more confident in the platform and more willing to buy sustainably. Trust is a very strong predictor of intention ($r = 0.797$), suggesting that credible information, reliable eco-labels, and secure transactions are critical drivers of green purchase intentions. Intention itself has a very strong effect on actual behavior ($r = 0.828$), which means that once strong intentions are formed, they are highly likely to materialize into real purchases, especially when the platform context is supportive. Platform enablers are highly effective ($r = 0.810$), underscoring that features such as eco-friendly filters, eco-scores, and green labels substantially facilitate the conversion of intention into behavior. By contrast, barriers such as greenwashing skepticism exert a strong negative effect ($r = −0.713$), showing that doubts about the authenticity of environmental claims can significantly undermine the likelihood that consumers will follow through on their green intentions.

Theoretical contributions include: (1) validating an integrated TPB–TAM–UTAUT model in the context of green e-commerce in Indonesia; (2) identifying a duality between objective and subjective gaps; and (3) demonstrating the asymmetry in which the strength of enablers (M = 4.15) far exceeds that of barriers (highest M = 3.34). Practically, these findings provide a blueprint for e-commerce platforms to prioritize the development of facilitating-condition features (filters, eco-scores, labels) that have proven highly effective in narrowing the intention–behavior gap.

Practical Implications

In practical terms, the findings of this study have direct relevance for four key stakeholder groups in Indonesia's sustainable consumption ecosystem:

First, e-commerce platforms (Shopee, TikTok Shop, Tokopedia) are encouraged to expand and standardize green product categorization features. Given the very strong correlation between platform enablers and actual purchase behavior ($r = 0.810$, $p < 0.001$), investment in eco-friendly filters, verified eco-scores, and sustainability-based recommendation algorithms is empirically shown to be an effective lever for converting consumer intentions into actual transactions. Platforms also need to address information overload (experienced by 52.7% of respondents) through simplified information architecture and more intuitive curation of green products.

Second, sellers and producers are advised to adopt value communication strategies that quantify the long-term benefits of environmentally friendly products. With greenwashing skepticism still relatively low (M = 2.28), there is a window of opportunity to build trust through full transparency in sustainability claims, independent certification, and clear communication of environmental impact. Such strategies can help address price sensitivity (M = 3.34) by shifting the focus from price premiums to value premiums.

Third, regulators may consider standardizing national green labels and introducing fiscal incentives for certified products. The finding that trust in eco-labels strongly predicts purchase intention ($r = 0.797$, $p < 0.001$) suggests that a standardized, credible labeling ecosystem would strengthen consumer trust and accelerate sustainable consumption adoption. Incentives such as tax reductions or subsidies for certified products could help mitigate the negative impact of price sensitivity.

Fourth, academics are encouraged to replicate this study in specific product segments (e.g., sustainable fashion, organic beauty products) and extend it using longitudinal or experimental designs. Future research could further test the moderating effects of demographic variables (H8 not fully examined here), employ behavioral tracking to objectively validate the gap, and test platform interventions via A/B testing to confirm causal relationships.

Closing Remarks

In closing, this study affirms that the intention–behavior gap in green product purchases on Indonesian e-commerce platforms is not a sign of adoption failure but a reflection of an ongoing transition toward sustainable consumption. With a very strong intention–behavior correlation ($r = 0.828$, $p < 0.001$) and a relatively small objective gap (6.9 percentage points), Indonesian consumers have strongly internalized pro-environmental intentions (86.2% report an intention to buy green products). A progressively more mature e-commerce ecosystem, supported by effective facilitating-condition features (mean enablers = 4.15), continues to systematically reduce the gap between intention and action, echoing the broader pattern of institutional strengthening and governance innovation discussed in prior work within this journal (Jaharuddin, 2025; Sutanti et al., 2025).

The finding that platform enablers are far more dominant than barriers (enablers M = 4.15 vs. the highest barrier M = 3.34) provides empirical grounds for optimism that the gap can be further narrowed through technology-based interventions. With smarter platform design, enabling policies, and more transparent seller strategies, Indonesia has the potential to become

a leading emerging market that systematically bridges the green gap—not through mass persuasive campaigns, but through carefully engineered choice architecture that naturally and efficiently facilitates the conversion of intention into green behavior. This emphasis on design and institutional arrangements is consistent with earlier contributions in *Multidisciplinary Research Studies in Social Sciences* that highlight the role of business model innovation and governance mechanisms in improving institutional performance and socio-economic outcomes (Ambara, 2025; Jaharuddin, 2025).

This research therefore provides empirical evidence that Indonesia's transition toward sustainable consumption is progressing on a positive trajectory and that digital platforms are crucial enablers of this transition. Going forward, strategic collaboration among platforms, sellers, regulators, and consumers will determine how quickly and how broadly Indonesia can realize its potential as a sustainable e-commerce market in Southeast Asia, building on the institutional and regional development foundations documented by previous studies in this journal (Jaharuddin, 2025; Sutanti et al., 2025).

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