

The Influence of Perceived Personalization on Sustainable Purchase Decision: The Mediating Roles of AI Trust and Customer Experience

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Abstract

Increasing competition in the beauty industry requires companies to continuously innovate and improve service quality. One rapidly growing innovation is the application of personalized artificial intelligence (AI) services to provide experiences relevant to individual needs and build customer trust in the brand. This study aims to analyze the perceived influence of personalization on the AI Skin Analyzer feature on purchasing decisions by examining the mediating role of customer experience and trust in AI. This study uses a quantitative approach involving 150 respondents who are beauty website users who have used the AI Skin Analyzer feature in Samarinda. Data analysis was performed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to test the relationship between variables. The results show that perceived personalization significantly influences customer purchasing behavior. This relationship was also mediated by experience and trust in the AI skin analyzer. The study shows that the use of personalized AI leads to positive experiences, increases trust, and has a positive impact on purchasing behavior. These findings contribute to the understanding of how personalized AI services can shape consumer perceptions and behaviors in the beauty industry.

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1. Introduction

AI technology has significantly supported corporate organizations' growth, innovation, and effective brand management (Cheng & Jiang, 2020). Artificial intelligence (AI) transforms the way brands interact with consumers by closely aligning marketing strategies with individual tastes and behaviors. Large-scale data analysis enables this tailored strategy, which enables marketers to greatly boost customer engagement and conversion rates (Haleem et al., 2022). This technology has significant implications for a variety of corporate applications because it is advanced enough to distinguish faces and objects. While object detection can be used to identify and examine photos, facial recognition can be used to identify individuals for security purposes. AI handles human photos used to identify individuals for security purposes. AI handles human photos similarly to cookies, enabling more individualized services according to client preferences. Some companies have begun experimenting with facial recognition technologies to detect consumers' and subsequently suggest suitable products (Jain & Aggarwal, 2020; Yang et al., 2021).

In light of these developments, it is crucial to investigate the impact of AI-driven personalization, particularly within the cosmetic e-commerce sector, on consumer perceptions and decision-making processes. This level of personalized and reactive service strengthens the relationship between the consumer and the brand, encouraging repeat business and promoting brand loyalty. Furthermore, the capacity of artificial intelligence to enhance customer experiences represents a crucial element of brand differentiation, setting apart organizations capable of delivering exceptional service within a competitive marketplace (Cukier, 2021; Mustak et al., 2021). User confidence in AI system recommendations correlates positively with their acceptance and subsequent action, thereby enhancing the likelihood of a purchase decision (Guerra-Tamez et al., 2024). Customers' engagement and conversion rates have been demonstrated to be directly impacted by AI-powered personalized suggestions that point them in the direction of goods that suit their interests and preferences (Kumar et al., 2019; Yoon & Lee, 2021). Artificial intelligence (AI)-supported web information significantly impacts consumers' impulsive purchasing decisions. AI-driven marketing initiatives present customers with an expanded array of choices for identical products, thereby influencing their brand loyalty and propensity for repeat purchases. Consumers acquire product information from diverse sources, including social networks, family, product reviews, and AI-powered recommendations. AI marketing initiatives therefore have an impact on consumer purchasing patterns, brand loyalty, and decisions to make repeat purchases (Mohamed & Ünsalan, 2025).

This research endeavors to investigate the correlations among perceived personalization facilitated by an AI skin analyzer feature, AI trust, consumer experience, perceived usefulness, and sustainable purchasing decisions within the cosmetic e-commerce consumer demographic.

Literature Review and Hypothesis Analysis

Perceived personalization enhances the customer experience by enabling retailers to more effectively address the increasingly diverse requirements of their customer base (Lemke, Clark, & Wilson, 2011). Hai Ninh and Anh Duc (2022) highlighted the direct influence of perceived personalization on the customer experience. Furthermore, within an integrated channel retail environment, Tyrväinen, Karjaluoto, and Saarijärvi (2020) confirmed that personalized service positively impacts various facets of the consumer's experience, encompassing emotional experience and experiential perception. Moreover, personalization augments the customer's sense of agency and fosters their participation in the co-creation of the experience (Chang, Yuan, & Hsu, 2010). The interpretation of customer experience with AI services was that it was a subjective and intrinsic reaction to direct or indirect interactions with a business.

In the digital age, one of the elements that increasingly affects customer *purchasing decisions* is *perceived personalization*. The purchasing experience becomes more relevant and personalized when people believe that a platform fully comprehends their needs, habits, and interests. Along with making it easier for customers to locate the goods they require, these personalized recommendations give them the psychological assurance that their choices are well-founded. In the study by Singhal

et al. (2025), AI-based personalization can boost consumers' perceptions of usefulness and shopping convenience, making them feel more supported and more inclined to make confident purchases.

These conclusions are supported by Yin's (2025) research, which demonstrates how *personalization* can produce enlightening and directed experiences that feel incredibly individualized and meaningful. Customers accept recommendations and perceive them as a natural and even expected element of the decision-making process when they feel "understood" by the system. The crucial factors of perceived relevance and perceived competence are essential in influencing how personalization affects a customer's desire to make a purchase. Shoppers place a higher value on suggestions that are thought to be relevant and come from a reliable system; this belief fosters trust and simplifies the act of making purchases.

Perceived personalization is consistently found to have a beneficial impact on *purchase decisions* due to the multiple factors that include relevance, convenience, simplicity of identifying products, and the perception that the shopping experience is "tailored" to them. In addition to improving the efficiency of the buying process, personalization fosters a feeling of familiarity and intimacy with the platform, leading to quicker, more assured, and more frequent purchasing decisions.

In addition to impacting purchasing decisions and enhancing customer experience, perceived personalization is crucial for fostering trust in AI systems, specifically regarding the degree to which users perceive recommendations or digital services as tailored to their preferences. When personalization is perceived as accurate and relevant, users attribute a high level of proficiency to the AI system, thereby significantly increasing their confidence in the provided data and suggestions. Trzebiński (2022) points out that the perception of personalization is strongly correlated with the accuracy of information from recommender systems and that making recommendations more relevant promotes system confidence. According to a research, confidence in AI systems that produce suggestions is improved when people feel the recommendations are tailored to them, which boosts their sense of fairness and the worth of the suggestions. This indicates that when people believe the system is both knowledgeable and provides material that is pertinent to their needs, personalization occurs. Both factors function as intermediaries, boosting trust in the system that uses data to make suggestions.

Overall, recent international research consistently demonstrates that *perceived personalization* has a positive impact on *AI trust*; however, the impact varies depending on the system's quality of transparency and relevance. Trust will rise when relevant personalization is combined with transparency; it is going to decrease when relevant personalization is not combined with openness. This study leads to some hypotheses as follows

H1: *Perceived Personalization has an effect to purchase decision.*

H2: *Perceived personalization has a positive effect on customer experience*

H3: *Perceived personalization has a positive effect on AI Trust*

Modern consumer *purchasing decisions* are increasingly thought to be influenced by trust in artificial intelligence (*AI trust*). Customers now assess not only products but also the "intelligence" that helps them make decisions. The degree to which algorithms can independently make decisions influences the likelihood that customers will buy things, and this relationship follows a curve that looks like an upside-down U. In other words, when artificial intelligence is either excessively controlling or not active enough, it can decrease how much customers trust it. These results demonstrate that customers require AI that feels cooperative and intelligent enough to assist them without fully taking over their decision-making.

AI trust is influenced by social and emotional factors in addition to technical prowess. However, according to a study by Youn and Jin (2021), customers' trust in AI can rise as a result of parasocial interactions with chatbots. Proficient brand personas within conversational AI systems cultivate a sense of familiarity, which enhances customer comfort in accepting recommendations, thereby boosting their propensity and resolve to finalize purchasing decisions. For this reason, Teodorescu et al. (2023) discovered that the development of AI trust is strongly influenced by algorithm transparency, perceived utility, and user familiarity with recommendation systems. Customers are more inclined to accept product recommendations and make purchases when they believe AI systems are transparent, equitable, and simple to comprehend.

But studies also show that trust is extremely fragile. According to Draws et al. (2021), algorithmic prejudice or unfairness may erode trust and lead to opposition to the application of AI, ultimately resulting in fewer purchases. Therefore, it can be said that impressions of accuracy, fairness, transparency, and the caliber of social interactions are among the routes through which *AI trust* operates and has a significant influence on *purchasing decisions*. Customers are more likely to follow recommendations and make purchases when they have more trust in AI. Therefore, this study proposes hypotheses as follows:

H4: *AI Trust has a positive effect on Purchase decisions.*

In digital markets, where interactions are mediated through platforms and interfaces rather than conventional physical venues, *customer experience* has come to be one of the most important variables influencing consumer *purchase decisions*. A well-designed *customer experience* that includes easy-to-use navigation, responsive systems, interesting content, and seamless transaction procedures can improve customers' perceptions of value and lessen the psychological stress of making a purchase. Customers become more confident in their decisions and are more likely to complete a transaction when they perceive that using a platform is simple and satisfying.

The substantial impact of customer experience on making purchasing choices is significantly shaped by the role of network integration as an intermediary. The desire of consumers to finalize a transaction within digital environments, where both social and informational networks are extremely important, is heightened by positive experiences that foster stronger bonds and increased confidence within the platform. These conclusions highlight the impact of customer experience on the development of social perceptions formed during platform interactions, expanding beyond just the emotional and functional elements of purchasing online.

By highlighting key concepts including customer happiness, loyalty, perceived risk, trust, and web content quality, Pires et al. (2024) further improve the conceptual understanding of *customer experience*. corresponding to their framework, a positive digital consumer experience directly leads to the development of trust. When users believe the system is dependable and well-designed, trust develops into a psychological mechanism that facilitates and frequently expedites the decision to purchase. This relationship is supported by empirical research. According to Azmi and Patrikha (2022), e-commerce consumers' *purchasing decisions* are directly and significantly impacted by the online *customer experience*, which includes interface aesthetics, product presentation, and transaction efficiency. The claim that experience-related cues boost user confidence and lessen uncertainty is supported by their findings. Similar to this, Meirandari et al. (2024) demonstrate that consumer experiences formed by social media content and perceived product quality also positively influence purchase decisions, highlighting the fact that experience is multifaceted and goes beyond interactions on the platform.

Overall, data from numerous worldwide research studies repeatedly show that *customer experience* positively and significantly influences *purchasing decisions*. A smooth and enjoyable experience increases emotional pleasure, lowers perceived risk, and builds trust that all of which are powerful motivators for customers to finish a purchase. Thus, the hypothesis put forth by this study is:

H5: *Customer experience has a positive effect on purchasing decisions.*

Based on the direct and indirect effects of the variables discussed above, this study shows that AI-based perceived personalization and purchase decisions indirectly influence purchasing decisions through the mediators of trust and customer experience. Therefore, the following hypotheses are proposed:

H6: *AI-based perceived personalization positively affects purchasing decisions through trust.*

H7: *AI-based perceived personalisation has a positive effect on purchasing decisions through customer experience.*

Sustainable purchase decision refers to consumers' purchasing behavior that is shaped by internal psychological evaluations, including perceived responsibility, trust, and concern for the long-term social and environmental consequences of consumption. Sustainable purchasing extends beyond favorable attitudes toward sustainability and reflects consumers' confidence that their purchasing decisions can generate meaningful long-term impact. Trust-related psychological factors

play a critical role in this process, as they reduce uncertainty and shift consumers’ focus from short-term transactional benefits toward long-term value creation, ultimately encouraging consistent and responsible purchasing behavior.

2. Method

This study adopts a quantitative approach with an explanatory survey design, aiming to test the hypothesis of causal relationships and the mediating role between latent variables.

Primary data were collected through a structured questionnaire instrument using a Likert scale to measure variables. The data collection period lasted from late October to mid-November of the year in question.

The research sample comprised 150 respondents, meticulously selected via purposive sampling. Stringent inclusion criteria were applied, requiring respondent to have utilized the AI Skin Analyzer feature on beauty platforms and to possess prior experience in acquiring skincare product through both online and offline channels.

The variables analyzed included Perceived Personalization (PP) as an exogenous variable, AI Trust (TR) and Customer Experience (CE) as mediating variables, and Sustainable Purchase Decision (PD) as an endogenous variable.

Data analysis was performed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method with SmartPLS software. The measurement model assessment (outer model) confirmed adequate data quality, where all constructs showed good convergent validity (Average Variance Extracted value above the threshold of 0.50) and high construct reliability (Composite Reliability value above 0.70), so that the data was ready for structural model and hypothesis testing.

3. Result and Discussion

3.1. Result

3.1.1. Outer Model Measurement

Table 1. Results of validity and reliability tests.

Variables	Outer Loading	AVE	CR	CA
PP1	0,876	0,724	0,913	0,873
PP2	0,857			
PP3	0,801			
PP4	0,868			
TR1	0,754	0,638	0,898	0,858
TR2	0,809			
TR3	0,843			
TR4	0,781			
TR5	0,804			
CE1	0,878	0,730	0,915	0,876
CE2	0,892			
CE3	0,865			
CE4	0,777			
PD1	0,809	0,697	0,902	0,855
PD2	0,836			
PD3	0,851			
PD4	0,843			

Note.

PP = Perceived Personalization,

TR = Trust,

CE = Customer Experience,

PD = Purchase Decision

Convergent validity testing indicates that all indicators exhibit outer loading values exceeding 0.70, thereby satisfying the established criteria for convergent validity. Furthermore, the Average Variance Extracted (AVE) value for all constructs surpasses 0.50, affirming that all variables within

the model possess sufficient explanatory power for indicator variance. Additionally, the Composite Reliability and Cronbach’s Alpha values for all constructs were found to be above 0.70, Leading to the conclusion that all latent variables demonstrate robust reliability.

Table 2. Discriminant Validity

	PP	CE	PD
PP	0,851		
CE	0,747	0,854	
PD	0,776	0,784	0,835
TR	0,789	0,768	0,792

Note.

PP = Perceived Personalization

TR = Trust

CE = Customer Experience

PD = Purchase Decision

The evaluation of discriminant validity through the Fornell–Larcker approach shows that the square root of AVE in each construct is *higher than the correlation between constructs*. This indicates that each construct has an adequate level of distinction and is able to explain the research phenomenon uniquely without overlapping concepts between variables.

3.1.2. R-Square value

Table 2. R-Squared Value

Variables	R-Squared	R-Squared Adjusted
Customer_Experience	0,558	0,555
Purchase_Decision	0,727	0,722
Trust	0,622	0,620

The R-Squared value shows that the AI Personalization variable is able to explain 55.8% of the variance in Customer Experience, 62.2% of the variance in Trust, and 72.7% of the variance in Purchase Decision. This value falls into the moderate to *strong category in the context of structural equation modeling*, indicating that the exogenous construct provides a substantial explanatory contribution to the endogenous construct.

3.1.3. Hypothesis Test Results for Direct Effects

Table 3. Hypothesis Test Results for Direct Effects

Hypothesis	T-Statistic	P-Value	Result
H1 PP → PD	3,527	0,000	Significant
H2 PP → TR	21,066	0,000	Significant
H3 PP → CE	14,140	0,000	Significant
H4 TR → PD	3,837	0,000	Significant
H5 BE → PD	3,547	0,000	Significant

All direct hypotheses (H1–H5) show p-values < 0.05 and positive path coefficients, which means that all direct effects in the model are *significant*. More specifically:

- 1) Perceived Personalization has a significant effect on Purchase Decision (H1).
- 2) Perceived Personalization has a significant effect on Trust (H2).
- 3) Perceived Personalization has a significant effect on Customer Experience (H3).
- 4) Trust has a significant effect on Purchase Decision (H4).
- 5) Customer Experience has a significant effect on Purchase Decision (H5).

3.1.4. Hypothesis Test Results for Indirect Effects

Table 4. Hypothesis Test Results for Indirect Effects

	Independent	Mediation	Dependent	P-Value	Result
H6	PP	TR	PD	0,000	<i>Significant</i>
H7	PP	CE	PD	0,001	<i>Significant</i>

Two mediation pathways (H6 and H7) were found to be significant. AI Personalization was proven to *indirectly influence Purchase Decision through Trust and Customer Experience*. Both mediators play an important role in strengthening the relationship between perceived personalization and purchase decisions.

3.2. Discussion

The results of this study confirm that perceived personalization has a strong influence on consumer behavior on AI-based beauty platforms. Our findings indicate that personalization significantly influences customer experience and trust, aligning with existing literature that suggests relevant and individualized services enhance user comfort, perceived control, and confidence in digital systems. Consumers generally perceive AI-driven recommendations as more credible when they are tailored to their specific needs, thereby enriching their interactions with the platform.

The significant influence of perceived personalization on customer experience shows that digital experiences enriched by personalization can increase emotional value and the perception of customer interaction quality. Personalization allows consumers to feel “understood” by the system, creating a more satisfying experience and encouraging repeat engagement.

Furthermore, the positive influence of personalization on trust supports previous findings that emphasize the relevance and accuracy of AI recommendations as key to building trust. When consumers perceive that the AI system works competently and fairly, they are more likely to adopt recommendations and follow through with purchasing decisions.

The research results also confirm that trust and customer experience play an important role in influencing purchase decisions. Consumers are more likely to make purchasing decisions when they perceive the platform as trustworthy and capable of providing a smooth, enjoyable, and low-risk experience. The mediating role of trust and customer experience reinforces the understanding that personalization not only has a direct impact on purchasing decisions but also works through psychological channels that enhance perceptions of experience quality and trust in the system.

Overall, the findings of this study reinforce the current literature that AI-based personalization is a strategic factor in influencing consumer behavior in the digital beauty industry. Personalization not only shapes perceptions of service quality but also forms the foundation for building trust and customer experience that can drive more confident, faster, and repeat purchase decisions.

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