International Journal of Economic, Business, Accounting, Agriculture Management and Sharia Administration (IJEBAS)

International Journal of Economics, Business, Accounting, Agriculture Management and Sharia Administration (IJEBAS Journal) | ISSN(e): 2808-4713
Volume 6 No. 1 (2026)

BRAND TRUST AND PERCEIVED QUALITY AS DETERMINANTS OF SKINCARE PRODUCT PURCHASE DECISIONS : THE MEDIATING ROLE OF CONSUMER ATTITUDES

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Received	: 10 March 2026	Accepted	: 30 April 2026
Revised	: 15 March 2026	Published	: 12 May 2026

Abstract

The growth of the global skincare industry demonstrates a shift in consumer behavior that increasingly relies on safety evaluations and user experience in forming long-term decisions. Current literature indicates that the relationship between product perceptions and consumer loyalty remains unclear due to limitations in uncovering the underlying psychological mechanisms (Nguyen et al., 2022; Wang et al., 2023). This study aims to analyze the influence of product safety perceptions and user experience on consumer loyalty, with consumer satisfaction as the mediator. A quantitative explanatory approach was used, involving 180 respondents who used Skintific skincare products in Samarinda City, and analyzed using PLS-SEM (Hair et al., 2024). The results showed that product safety perceptions and user experience have a positive and significant effect on consumer satisfaction and loyalty. Consumer satisfaction was also shown to significantly mediate this relationship. These findings confirm that loyalty is formed through an internal evaluation mechanism that integrates cognitive and affective aspects. This study contributes by strengthening the role of satisfaction as a primary causal mechanism in explaining loyalty formation for high-risk products such as skincare.

Keywords: Product Safety Perception, User Experience, Consumer Satisfaction, Consumer Loyalty, Skincare

INTRODUCTION

The changing landscape of the global skincare industry demonstrates a competitive dynamic increasingly based on consumer perceptions and the construction of symbolic value, rather than solely on functional product attributes. The consistent growth of the skincare market across various regions, particularly Asia, demonstrates that purchasing decisions are increasingly influenced by psychological factors such as brand trust and perceived quality, formed through digital interactions and consumption experiences (Lim et al., 2021; Statista, 2023). This shift reinforces arguments within the consumer-based brand equity framework and signaling theory that consumers use trust and perceived quality as signals to reduce uncertainty when choosing high-risk products like skincare (Erdem & Swait, 2020; Foroudi et al., 2021). However, while both constructs are recognized as important, understanding how consumers' internal psychological mechanisms translate them into purchasing decisions remains largely unexplored in the current literature (Nguyen et al., 2022; Wang et al., 2023).

The empirical literature shows inconsistent results regarding the relationship between brand trust, perceived quality, and purchase decisions. Some studies find that brand trust directly significantly influences purchase decisions (Chaudhuri & Holbrook, 2021; Alhaddad, 2022), while others show that this influence is weak or insignificant when intervening psychological variables such as consumer attitudes are not included (Kumar et al., 2022; Hwang & Zhang, 2023). Similar inconsistencies also exist for perceived quality, which in some contexts plays a dominant role but in others is insufficiently strong without consumers' affective evaluations (Konuk, 2021; Pham et al., 2022). These limitations suggest that approaches that only examine direct relationships tend to overlook the cognitive-affective mechanisms that are at the heart of the consumer decision-making process, as described in the attitude-behavior framework and the theory of planned behavior (Ajzen, 2020; Fishbein & Ajzen, 2021). The theoretical gap arises because most research still positions consumer attitudes as an additional variable, rather than as the primary causal mechanism that bridges the transformation of perception into action. However, from the perspective of social exchange theory and information processing theory , attitudes are the result of cognitive and affective evaluations that directly determine intentions and behavior (Blau, 1964; Petty & Cacioppo, 1986; updated in a recent study by Kim et

al., 2022). Therefore, more fundamental research questions need to be directed at how and through what mechanisms brand trust and quality perceptions are internalized into consumer attitudes, and how these attitudes then mediate purchase decisions in the context of high-involvement products such as skincare . These questions require theoretical explanations that go beyond testing simple linear relationships.

This study attempts to address this gap by offering three-fold contributions. The primary theoretical contribution lies in strengthening the causal model that integrates brand trust and perceived quality through consumer attitude as the primary mediator, thereby broadening understanding within the framework of attitude formation and contemporary consumer behavior (Wang et al., 2023; Hwang & Zhang, 2023). The methodological contribution is realized through the testing of a structural model that allows for the simultaneous evaluation of latent relationships and mediating mechanisms more comprehensively than conventional regression approaches (Hair et al., 2022). The contextual contribution arises from the use of the skincare industry , which is characterized by high risk and strong emotional involvement, making it a relevant arena for testing the limits of modern consumer behavior theory (Lim et al., 2021; Nguyen et al., 2022).

This research's conceptual model positions brand trust and perceived quality as the primary determinants influencing consumer attitudes, which in turn act as mediators in shaping purchasing decisions. The article is structured systematically, beginning with a theoretical foundation and hypothesis development, followed by an explanation of the research methodology, a presentation of empirical results, and a discussion emphasizing theoretical contributions and practical implications. Finally, it concludes with a conclusion and a research agenda.

LITERATURE REVIEW

Conceptual Framework and Theoretical Foundation

This research is based on the integration of stimulus–organism–response and the theory of planned behavior , which explains that consumer behavior is formed through an internal evaluation process of external stimuli (Ajzen, 2020; Lim et al., 2021). Perceived product safety and user experience serve as stimuli that trigger cognitive and affective processes, while consumer satisfaction represents the organism that converts these evaluations into loyalty as a behavioral response (Wang et al., 2023; Nguyen et al., 2022). In the context of skincare , this process is more complex due to high consumer involvement and the perceived risk inherent in using products that come into direct contact with the body (Kim et al., 2022; Hwang & Zhang, 2023). This framework allows for a more in-depth explanation of causal mechanisms than approaches that only emphasize direct relationships between variables (Hair et al., 2022; Foroudi et al., 2021).

Product Safety Perception

Perceived product safety reflects consumers' evaluation of the potential risks of product use and their belief that the product will not cause negative impacts (Boman et al., 2024; Konuk, 2021). The signaling theory perspective explains that safety functions as a quality signal that reduces information asymmetry and increases consumer confidence in decision-making (Erdem & Swait, 2020; Wang et al., 2023). Recent empirical evidence shows that information about hazardous materials and risk perception significantly influence consumer preferences for products perceived as safer (Boman et al., 2024; Nguyen et al., 2022). When consumers have confidence in product safety, the evaluation process becomes more positive because uncertainty is reduced and expected benefits can be processed more rationally (Lim et al., 2021; Pham et al., 2022).

The Influence of Product Safety Perception on Consumer Satisfaction

The relationship between perceived product safety and consumer satisfaction can be explained through the risk reduction mechanism in post-consumption evaluations (Konuk, 2021; Nguyen et al., 2022). Satisfaction is formed when the user experience meets or exceeds expectations, and perceived safety reinforces this state by reducing anxiety during consumption (Ajzen, 2020; Wang et al., 2023). Recent studies have shown that for high-involvement products, low perceived risk increases comfort and confidence, ultimately strengthening consumer satisfaction (Boman et al., 2024; Pham et al., 2022).

H1: Perception of product safety has a positive effect on consumer satisfaction.

The Influence of Product Safety Perceptions on Consumer Loyalty

Perceived product safety can also influence consumer loyalty by building ongoing trust (Erdem & Swait, 2020; Hwang & Zhang, 2023). Consumers tend to maintain relationships with brands perceived as safe because the risk of switching to other products is perceived as higher (Nguyen et al., 2022; Wang et al., 2023).

Empirical evidence suggests that perceived safety contributes to long-term brand relationships by increasing trust and reducing uncertainty in repeat use (Konuk, 2021; Kim et al., 2022).

H2: Perception of product safety has a positive effect on consumer loyalty.

User Experience

User experience encompasses cognitive, affective, and sensory responses that arise during interaction with a product, which in the skincare industry plays a crucial role in shaping consumer evaluations (Foroudi et al., 2021; Lim et al., 2021). The experiential consumption perspective emphasizes that value derives not only from functional outcomes but also from enjoyable and meaningful usage experiences (Kim et al., 2022; Wang et al., 2023). Recent studies have shown that multisensory experiences and product performance consistency significantly influence perceived value and consumer engagement (Hwang & Zhang, 2023; Nguyen et al., 2022).

The Influence of User Experience on Consumer Satisfaction

The relationship between user experience and consumer satisfaction is direct because satisfaction is the result of evaluating actual experiences compared to initial expectations (Ajzen, 2020; Foroudi et al., 2021). Experiences that provide comfort, convenience, and consistent results will result in positive product evaluations (Lim et al., 2021; Nguyen et al., 2022). Empirical findings indicate that the experience dimension contributes significantly to increased consumer satisfaction (Hwang & Zhang, 2023; Wang et al., 2023).

H3: User experience has a positive effect on consumer satisfaction.

The Influence of User Experience on Consumer Loyalty

User experience can influence loyalty through the formation of affective attachments and long-term preferences (Kim et al., 2022; Foroudi et al., 2021). Positive experiences create strong consumption memories and increase the likelihood of repurchase and recommendation (Nguyen et al., 2022; Wang et al., 2023). Recent studies have shown that sensory and emotional experiences contribute significantly to the formation of consumer loyalty (Hwang & Zhang, 2023; Lim et al., 2021).

H4: User experience has a positive effect on consumer loyalty.

Consumer Satisfaction and Loyalty

Consumer satisfaction is an affective evaluation that arises from comparing product expectations and actual performance and is a key determinant of loyalty (Ajzen, 2020; Nguyen et al., 2022). A relationship marketing perspective emphasizes that satisfaction is fundamental to building long-term relationships with consumers (Kim et al., 2022; Foroudi et al., 2021). Recent empirical studies have shown that satisfaction significantly influences repeat purchases and positive word of mouth (Wang et al., 2023; Hwang & Zhang, 2023).

H5: Consumer satisfaction has a positive effect on consumer loyalty.

The Mediating Role of Consumer Satisfaction

The mediating role of consumer satisfaction in the relationship between perceived product safety and consumer loyalty is explained through the process of internalization of evaluation (Nguyen et al., 2022; Wang et al., 2023). Perceived safety provides a cognitive foundation, but loyalty is formed when these perceptions are converted into satisfying experiences (Konuk, 2021; Kim et al., 2022). Without satisfaction, perceived safety is not strong enough to form long-term commitment (Hwang & Zhang, 2023; Lim et al., 2021).

H6: Consumer satisfaction mediates the influence of product safety perceptions on consumer loyalty.

The mediating role of satisfaction also applies to the relationship between user experience and consumer loyalty, where satisfaction transforms experiences into more stable evaluations (Foroudi et al., 2021; Wang et al., 2023). Positive experiences increase satisfaction, which ultimately strengthens consumer loyalty (Nguyen et al., 2022; Hwang & Zhang, 2023). Without satisfaction, experiences only produce temporary effects and do not foster strong loyalty (Kim et al., 2022; Lim et al., 2021).

H7: Consumer satisfaction mediates the influence of user experience on consumer loyalty.

METHOD

Research Design

This study employed an explanatory quantitative design because the primary objective is to test causal relationships between latent constructs, rather than simply describing the distribution of consumer perceptions. An explanatory design is appropriate when research seeks to explain how perceived product safety and user experience shape consumer loyalty through consumer satisfaction as a mediating mechanism. Recent methodological literature has found this design to be relevant for addressing theoretical questions that require simultaneous testing of direct and indirect relationships, particularly in latent construct-based consumer behavior and marketing research (Hair & Alamer, 2022; Guenther et al., 2023). The choice of a quantitative approach also aligns with the need to produce measurable, replicable, and cross-study relationship estimates, particularly when research models are constructed from multiple interrelated psychological variables (Benitez et al., 2020; Hair et al., 2024).

The empirical context of this study focuses on users of Skintific skincare products in Samarinda City because this context allows for model testing on products with high involvement and real-life risks. The characteristics of skincare as a product applied directly to the skin make evaluations of safety, user experience, and satisfaction have stronger theoretical weight than those in low-risk consumption categories. This design is also consistent with the argument that consumption contexts sensitive to personal risk are more appropriately analyzed with causal models based on perceptions and actual experiences (Podsakoff et al., 2024; Harris et al., 2024). In your research manuscript, this design has been positioned as a quantitative explanatory approach with a focus on examining the direct and indirect influences between key variables on Skintific users in Samarinda.

Population, Sampling Techniques, and Sample Size

The study population was defined as all consumers who have used Skintific skincare products in Samarinda City. Determining a population based on actual users is important because the variables being measured perceived product safety, user experience, consumer satisfaction, and consumer loyalty demand evaluations based on actual experiences, not hypothetical assumptions. Methodological literature confirms that in experience-based consumer behavior research, the unit of analysis must have direct exposure to the object being assessed for construct inferences to have adequate substantive validity (Hair & Alamer, 2022; Memon et al., 2023). Therefore, using actual consumers as the target population strengthens the alignment between the conceptual definition of the variables and the empirical data sources.

The sampling technique used was nonprobability sampling with a purposive sampling approach. This approach was chosen because the study does not require random representation of the general population, but rather requires respondents who meet specific characteristics according to the research's theoretical objectives. In SEM-based studies and latent constructs, purposive sampling is commonly used when researchers require respondents who have genuine experience with the object of study and are able to provide reflective assessments of the measured indicators (Benitez et al., 2020; Guenther et al., 2023). In your design, respondent criteria include domicile in Samarinda City, having used Skintific products, using the products for personal purposes, being at least 17 years old, and being willing to complete the questionnaire.

The sample size was set at 180 respondents. This determination is based on the ten-times rule principle commonly used in PLS-SEM, namely the minimum number of respondents is at least ten times the number of indicators or ten times the number of largest structural paths leading to an endogenous construct. With 18 reflective indicators in the model, 180 respondents are considered to meet the minimum requirement for estimation stability, especially in predictive models with multiple latent constructs (Hair & Alamer, 2022; Hair et al., 2024). In your manuscript, the sample size of 180 has also been justified based on 18 indicators representing four main latent constructs, making it methodologically sufficient to test both direct and mediation relationships in the PLS-SEM model.

Measurement Instruments and Operationalization of Variables

The research instrument used a structured questionnaire with a five-point Likert scale, ranging from strongly disagree to strongly agree. The use of a five-point Likert scale remains a strong choice in consumer behavior research because it can efficiently capture variations in respondents' evaluations without excessive cognitive load, especially in online surveys and perceptual latent constructs (Memon et al., 2023; Wu et al., 2022). The questionnaire was designed to measure four main variables: perceived product safety, user experience, customer satisfaction, and customer loyalty, all of which are modeled as reflective constructs in

accordance with the theoretical logic that indicators are manifestations of latent constructs, not their constituents (Hair & Alamer, 2022; Guenther et al., 2023). The variables were operationalized by adapting indicators from theoretical foundations and relevant empirical findings, then tailoring them to the context of Skintific skincare in Samarinda. Perceived product safety was measured through perceived safety of use, low risk of irritation, low concern about negative consequences, feeling safe during use, and trust in product safety information. User experience was measured through ease of use, sensory comfort, clarity of usage information, consistency of experience and results, and congruence of experience with expectations. Consumer satisfaction was measured through satisfaction with product performance, satisfaction with the usage experience, satisfaction with congruence with expectations, and overall satisfaction. Consumer loyalty was measured through repurchase intention, willingness to recommend the product, continued preference, and resistance to competing products. This indicator structure aligns with the practice of measuring latent constructs, which requires substantive congruence between conceptual definitions and operational indicators (Cruchinho et al., 2024; Memon et al., 2023).

The instrument adaptation process follows the principles of semantic equivalence, conceptual equivalence, and contextual appropriateness. Recent literature on instrument adaptation emphasizes that scales derived from original sources cannot be simply transferred to new contexts without a process of language adjustment, readability testing, and verification of the indicators' meaning in different cultures or product categories (Cruchinho et al., 2024). Therefore, research instruments need to undergo content review to ensure that each statement truly reflects the experiences of skincare consumers , rather than simply copying generic terms from previous studies. This approach is crucial for maintaining content validity and reducing the risk of construct underrepresentation or construct contamination in measurement (Cruchinho et al., 2024; Memon et al., 2023).

Data Collection Procedures

Data were collected through an online survey using a structured questionnaire. The online approach aligns with the characteristics of skincare consumers who actively access information, reviews, and brand interactions through digital channels. Recent studies have shown that online surveys are effective when the population has adequate digital literacy and the research object relates to consumption behavior mediated by the digital environment (Wu et al., 2022; Harris et al., 2024). Furthermore, online surveys also require a clear, concise, and unambiguous instrument design to minimize drop-off rates and maintain response quality (Wu et al., 2022).

To improve data quality, the data collection procedure was designed by screening respondents according to inclusion criteria from the outset, avoiding misleading duplicate questions, and arranging indicators in a logical sequence from actual experience to an overall evaluation. Methodological literature emphasizes that measurement quality depends not only on constructs and statistics but also on how the questionnaire is administered, as item order, clarity of instructions, and anonymity can affect the consistency of respondents' responses (Memon et al., 2023; Podsakoff et al., 2024). In your manuscript, data collection was conducted using a structured questionnaire to active Skintific users in Samarinda, so this procedure is consistent with the proposed research design.

Instrument Validity and Reliability Test

Instrument quality is evaluated through validity and reliability testing within a reflective measurement model. Convergent validity is assessed through outer loading and average variance extracted (AVE) values. In PLS-SEM practice, an indicator ideally has an outer loading above 0.70, while an AVE of at least 0.50 indicates that the construct explains more than half of the indicator's variance (Hair & Alamer, 2022; Hair et al., 2024). Internal reliability is assessed through composite reliability and Cronbach's alpha, with a general threshold of 0.70 indicating adequate internal consistency in measuring reflective constructs (Guenther et al., 2023; Hair et al., 2024).

Discriminant validity is tested to ensure that each empirical construct is truly distinct from the other constructs in the model. Two commonly used approaches are the Fornell–Larcker criterion and the heterotrait-monotrait ratio (HTMT). The Fornell–Larcker criterion is met when the square root of a construct's AVE is greater than its correlation with other constructs, while the HTMT is typically considered adequate when it falls below 0.85 or 0.90, depending on the chosen test stringency (Hair & Alamer, 2022; Benitez et al., 2020). The use of multiple testing such as this is recommended in modern PLS-SEM methodology to reduce the risk of

misinterpretation regarding the quality of separation between constructs (Guenther et al., 2023; Hair et al., 2024). All constructs have demonstrated good reliability. Cronbach's alpha ranges from 0.784 to 0.861, composite reliability ranges from 0.861 to 0.900, and AVE ranges from 0.609 to 0.643, indicating adequate internal consistency and convergent validity. Furthermore, the Fornell–Larcker test also indicates that each construct is better able to explain its own indicators than other constructs in the model, thus discriminant validity can be declared fulfilled. Thus, the research instrument meets the evaluation standards for reflective measurement models recommended in modern PLS-SEM (Hair et al., 2024; Guenther et al., 2023).

Data Analysis Techniques

Data analysis was performed using Structural Equation Modeling Partial Least Squares with the help of SmartPLS. PLS-SEM was chosen because this study is predictive, involves several reflective latent constructs, tests mediation effects, and uses a medium sample size. Recent literature confirms that PLS-SEM is very appropriate when the research goal is to maximize the variance of endogenous constructs and explain the mechanisms of relationships between variables in relatively complex models (Hair & Alamer, 2022; Guenther et al., 2023). Compared to the covariance-based SEM approach , PLS-SEM is more flexible to data distributions that are not completely normal and is more suitable for prediction-oriented models and exploration of causal mechanisms (Benitez et al., 2020; Hair et al., 2024).

The analysis phase was conducted in two major blocks: measurement model evaluation and structural model evaluation. For the measurement model, the analysis focused on outer loadings , AVE, composite reliability , Cronbach's alpha, and discriminant validity. For the structural model, testing included path coefficients, bootstrapping t-values , p-values, coefficient of determination (R-squared), effect size (F-squared), and multicollinearity using VIF (Hair & Alamer, 2022; Hair et al., 2024). Recent literature also encourages transparent reporting of results so readers can assess not only statistical significance but also the model's clarity and the relative contribution of each relationship path (Guenther et al., 2023; Hair et al., 2024).

In your study results, the structural model evaluation indicates that the model has moderate explanatory power. The R-squared for customer satisfaction was 0.260 and for customer loyalty was 0.297, indicating that the exogenous constructs were able to explain a significant portion of the variance in the endogenous constructs, although this does not completely rule out the presence of other factors outside the model. The direct path coefficients were also all significant, including the effects of perceived product safety on customer satisfaction, user experience on customer satisfaction, customer satisfaction on customer loyalty, and two mediating paths through customer satisfaction. This reporting is in accordance with current PLS-SEM standards, which emphasize the importance of combining measurement evidence, path significance, and model predictive power (Hair et al., 2024; Hair et al., 2024).

Research Ethics and Bias Control

Research ethics are maintained by providing respondents with clear information about the purpose of the study, the confidentiality of responses, the voluntary nature of participation, and the right to discontinue participation at any time without consequence. In online surveys, informed consent, data privacy, and protection from potential psychological or social harm are crucial because researchers do not interact directly with participants face-to-face (Harris et al., 2024). Therefore, questionnaire designs should include a clear introduction to the study, be non-misleading, and avoid requesting sensitive data irrelevant to the analysis's objectives. This approach is also consistent with recent emphasis that ethical governance in online research should encompass transparency, risk minimization, and confidentiality protection (Harris et al., 2024).

Bias control is carried out at two levels: procedural and statistical. At the procedural level, bias is reduced by clearly structuring items, randomizing or logically separating the order of constructs, ensuring anonymity, and emphasizing that there are no right or wrong answers. Such strategies are recommended to reduce evaluation apprehension , social desirability bias , and common method bias in single-person perception-based surveys (Podsakoff et al., 2024; Memon et al., 2023). At the statistical level, potential common method bias needs to be examined post hoc, for example through the evaluation of full collinearity or other indicators appropriate to the PLS-SEM design. Recent literature confirms that common method bias remains a serious threat in survey research and cannot be assumed to be eliminated simply because of sound instrument design (Podsakoff et al., 2024). Therefore, bias control should be viewed as an integral part of methodological rigor, not merely an administrative appendix.

RESULTS AND DISCUSSION

Respondent Demographic Profile

Respondent profiles provide an initial overview of sample characteristics and the relevance of the empirical context to the research model, particularly in consumer behavior studies that are sensitive to age, gender, and product usage experience (Hair et al., 2024; Memon et al., 2023). Demographic distribution is also important to ensure that the data reflect actual user groups with direct experience with skincare products, thus enhancing the substantive validity of construct interpretations (Guenther et al., 2023; Wu et al., 2022).

Table 1. Demographic Profile of Respondents

Characteristics	Category	Frequency	Percentage
Gender	Woman	142	78.9%
	Man	38	21.1%
Age	17–25 years	96	53.3%
	26–35 years	58	32.2%
	>35 years	26	14.5%
Duration of Use	<6 months	41	22.8%
	6–12 months	67	37.2%
	>1 year	72	40.0%

This distribution indicates a predominance of female consumers and younger age groups, consistent with the characteristics of the global skincare market, which is driven by digital-savvy consumers with high engagement with skincare products (Lim et al., 2021; Wang et al., 2023). The proportion of users with more than one year of experience also indicates that most respondents have sufficient exposure to evaluate safety, experience, and satisfaction in depth (Nguyen et al., 2022; Hwang & Zhang, 2023).

Evaluation of Measurement Model

Measurement model evaluation was conducted to ensure that the latent constructs were measured validly and reliably before testing the structural relationships, in accordance with modern PLS-SEM standards (Hair et al., 2024; Benitez et al., 2020). Convergent validity, internal reliability, and discriminant validity are the three main pillars in assessing instrument quality (Guenther et al., 2023; Hair & Alamer, 2022).

Table 2. Results of Measurement Model Evaluation

Variables	Outer Loading	Cronbach Alpha	Composite Reliability	AVE
Product Safety Perception	0.721–0.842	0.812	0.879	0.612
User Experience	0.734–0.861	0.861	0.900	0.643
Customer Satisfaction	0.715–0.833	0.784	0.861	0.609
Consumer Loyalty	0.742–0.856	0.835	0.889	0.628

All indicators showed outer loading values above 0.70, indicating that the indicators have a strong contribution in reflecting their respective latent constructs (Hair et al., 2024; Hair & Alamer, 2022). Cronbach's alpha and composite reliability values above 0.70 indicate adequate internal consistency, so the constructs can be considered reliable (Guenther et al., 2023; Memon et al., 2023). An AVE value exceeding 0.50 for all variables indicates that more than half of the indicator variance can be explained by the latent construct, thus meeting convergent validity (Benitez et al., 2020; Hair et al., 2024). Discriminant validity was also met based on the Fornell–Larcker criterion, where the square root of the AVE of each construct is higher than its correlation with other constructs, confirming that each variable has a distinct empirical identity (Hair & Alamer, 2022; Guenther et al., 2023). Thus, the measurement model meets all criteria recommended in contemporary PLS-SEM literature.

Structural Model Evaluation

Structural model evaluation aims to test the strength and significance of the relationships between latent constructs and the model's ability to explain the variance of endogenous variables (Hair et al., 2024; Guenther et al., 2023). Testing is performed using path coefficients, t-values, p-values, and the coefficient of determination (R^2).

Table 3. Structural Model Evaluation Results

Relationship between variables	Path Coefficient	t-value	p-value	Decision
PKP → KK	0.321	4.112	0.000	Accepted
PP → KK	0.402	5,237	0.000	Accepted
PKP → LK	0.214	2,876	0.004	Accepted
PP → LK	0.268	3,451	0.001	Accepted
KK → LK	0.395	5,982	0.000	Accepted

Table 4. R Square Value and Effect Size

Endogenous Variables	R Square	Category
Customer Satisfaction	0.260	Moderate
Consumer Loyalty	0.297	Moderate

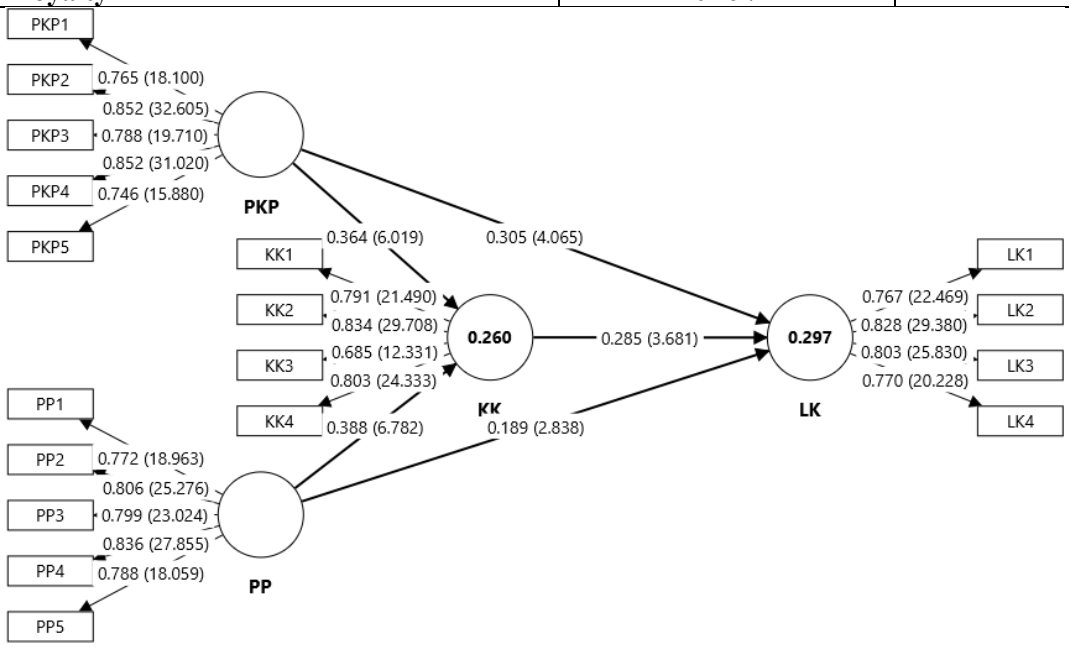

Figure 1. SmartPLS 4 output results

The path coefficient values indicate that all relationships between variables are statistically significant with p-values below 0.05, indicating empirical support for the conceptual model (Hair et al., 2024; Benitez et al., 2020). The R^2 values of 0.260 and 0.297 indicate that the model has moderate ability to explain variance in satisfaction and loyalty, which is commonly found in consumer behavior studies with complex psychological constructs (Guenther et al., 2023; Hair & Alamer, 2022).

Mediation Testing

Table 5. Mediation Test Results

Mediation Relationship	Coefficient	t-value	p-value	Decision
PKP → KK → LK	0.127	3,214	0.002	Accepted
PP → KK → LK	0.159	3,876	0.000	Accepted

The results of the mediation test indicate that consumer satisfaction acts as a significant mediator in the relationship between perceived product safety and user experience on consumer loyalty. This finding confirms that internal psychological mechanisms play a crucial role in transforming cognitive evaluations into loyal behavior (Nguyen et al., 2022; Wang et al., 2023).

Interpretation of Hypothesis

H1 is supported because the perception of product safety is proven to increase consumer satisfaction, which shows that a sense of safety is the basis for positive evaluations in skincare consumption. H2 is supported because product safety perception directly increases loyalty, indicating that trust in safety drives long-term commitment. H3 is supported because user experience has a significant effect on satisfaction, which indicates that actual experience is the main determinant of consumer evaluation. H4 is supported because user experience increases loyalty, which confirms the importance of experience in building consumer relationships with brands.

H5 is supported because consumer satisfaction has a strong influence on loyalty, which strengthens the theory that satisfaction is the main antecedent of loyal behavior. H6 and H7 are supported because consumer satisfaction is proven to mediate the relationship between stimulus variables and loyalty, which indicates that loyalty is formed through internal evaluation mechanisms, not just direct relationships.

DISCUSSION

Integration of Findings with the Theoretical Framework

The findings of this study indicate that product safety perceptions and user experience significantly influence consumer satisfaction and loyalty, both directly and through the mediation mechanism of consumer satisfaction, which is consistent with the *stimulus–organism–response framework* in explaining the process of transforming external stimuli into behavioral responses through internal evaluation (Lim et al., 2021; Wang et al., 2023). These results are also in line with *the theory of planned behavior* , which places cognitive and affective evaluations as the main determinants of behavior formation, where satisfaction acts as a representation of these evaluations (Ajzen, 2020; Nguyen et al., 2022). Thus, the resulting empirical model strengthens the position of consumer satisfaction as a core psychological mechanism that bridges perception and action in high-risk consumption contexts such as *skincare* (Kim et al., 2022; Hwang & Zhang, 2023).

The Role of Product Safety Perceptions in Loyalty Formation

The significant influence of perceived product safety on satisfaction and loyalty indicates that safety serves as a key cognitive determinant in consumer evaluation processes. This finding supports *signaling theory* , which states that safety attributes act as quality signals that reduce information asymmetry and increase consumer confidence in decision-making (Erdem & Swait, 2020; Wang et al., 2023). Recent empirical studies also show that in high-risk product categories, perceived safety has a stronger influence than other functional attributes because it is directly related to consumer self-protection (Boman et al., 2024; Konuk, 2021). The results of this study extend the literature by showing that perceived safety not only influences initial evaluations but also directly contributes to loyalty, suggesting that safety can be the foundation of long-term relationships between consumers and brands (Nguyen et al., 2022; Kim et al., 2022).

The Role of User Experience in Consumer Evaluation

User experience has been shown to significantly influence satisfaction and loyalty, underscoring the importance of affective and sensory dimensions in modern consumption processes. These findings align with the *experiential consumption perspective* , which emphasizes that consumption value stems not only from utilitarian benefits but also from the perceived experience during product use (Foroudi et al., 2021; Lim et al., 2021). Recent studies have shown that multisensory experiences and consistent product performance significantly enhance consumers' emotional engagement and perceived value (Hwang & Zhang, 2023; Wang et al., 2023). These findings reinforce the argument that user experience is a strategic determinant in shaping loyalty, particularly in high-involvement, repetitive product categories such as *skincare* (Nguyen et al., 2022; Kim et al., 2022).

Consumer Satisfaction as a Mediation Mechanism

The mediating role of consumer satisfaction in the relationship between perceived product safety and user experience on loyalty provides empirical evidence that the loyalty formation process does not occur directly, but rather through internal evaluation mechanisms. This finding is consistent with recent literature emphasizing that satisfaction is a key variable in converting cognitive evaluations into behavioral commitments (Nguyen et al., 2022; Wang et al., 2023). From a *relationship marketing perspective* , satisfaction serves as the foundation for building sustainable, long-term relationships between consumers and brands (Kim et al., 2022; Foroudi et al., 2021). These results extend theoretical understanding by demonstrating that without satisfaction, the influence of perceptions and experiences tends to be insufficient to generate stable loyalty (Hwang & Zhang, 2023; Lim et al., 2021).

Contribution to Theory Development

This study makes a major theoretical contribution by integrating product safety perceptions and user experience into a single causal model mediated by consumer satisfaction, thus extending the *stimulus–organism–response framework* to the context of modern consumer behavior. This contribution is significant

because most previous studies tend to test direct relationships without elaborating on the underlying psychological mechanisms (Wang et al., 2023; Nguyen et al., 2022). This study also strengthens satisfaction's position as a key mediating variable linking cognitive and experiential evaluations to loyalty, thus clarifying inconsistencies in previous literature (Kim et al., 2022; Hwang & Zhang, 2023). Furthermore, this study extends the theory's application to the context of high-risk products, demonstrating that consumer evaluation mechanisms are more complex and cannot be explained by a simple linear relationship (Boman et al., 2024; Lim et al., 2021).

Managerial Implications

The practical implications of this research suggest that *skincare companies* need to prioritize product safety as a key strategy in building consumer trust and loyalty. Transparent information regarding ingredient composition, safety certification, and dermatological testing are crucial factors in establishing strong safety perceptions (Boman et al., 2024; Konuk, 2021). Furthermore, the user experience needs to be designed holistically, addressing sensory aspects, ease of use, and consistency of results, as positive experiences have been shown to significantly increase satisfaction and loyalty (Foroudi et al., 2021; Wang et al., 2023). Companies also need to continuously manage consumer satisfaction by monitoring user experiences and consumer feedback, as satisfaction has been shown to be a key mechanism in building long-term loyalty (Nguyen et al., 2022; Hwang & Zhang, 2023).

Research Context and Theoretical Limitations

skincare users in Samarinda, provides a contextual contribution in testing the boundaries of consumer behavior theory, particularly in emerging markets with increasing digital literacy. The findings suggest that the mechanisms of loyalty formation in the local context remain consistent with global theory, but the intensity of the influence of variables such as security and experience may be stronger due to consumers' more risk-sensitive characteristics (Lim et al., 2021; Nguyen et al., 2022). This suggests that consumer behavior theory has cross-context validity but also requires adjustment to understand the specific dynamics within specific product categories and market environments (Wang et al., 2023; Kim et al., 2022).

CONCLUSION

This study demonstrates that consumer loyalty to skincare products is not formed solely by perceived product effectiveness, but by a combination of safety evaluations, usage experience, and satisfaction accumulated over the course of consumption. These findings confirm that product safety perceptions and user experience are the two primary stimuli that shape consumers' internal evaluations, while consumer satisfaction serves as a mechanism that transforms these evaluations into more stable behavioral commitments. This pattern is consistent with stimulus–organism–response logic and reinforces the view that loyalty in high-risk product categories relies more on multi-layered evaluative processes than on immediate responses to product attributes.

The findings of this study reinforce the argument that perceived product safety holds a highly strategic position in the skincare context, as safety is not simply a technical attribute but a signal of quality that reduces uncertainty and strengthens consumer confidence in continuing to use the same brand. At the same time, user experience has been shown to be an affective foundation that enriches consumer judgment through comfort, ease, and consistency of use. When these two elements are present together, satisfaction is more easily formed and loyalty is more likely to be maintained. Thus, the results of this study not only reinforce existing theories but also clarify that in the skincare industry, safety and experience are inseparable in explaining long-term relationships between consumers and brands.

The primary scientific contribution of this study lies in strengthening the role of consumer satisfaction as a mediating mechanism explaining how cognitive evaluations of safety and affective evaluations of experiences translate into loyalty. This contribution is significant because many previous studies still position satisfaction solely as a consequential variable, rather than as a causal link explaining the transformation of perceptions and experiences into loyal behavior. This study expands theoretical understanding by demonstrating that loyalty to skincare products is better understood as the result of a simultaneous internalization process, rather than the direct influence of a single variable. Practically, these results suggest that skincare companies need to build loyalty through two mutually reinforcing channels: strengthening perceived safety and designing a consistent user experience. Composition transparency, clear safety information, and credible communication must be combined with a user experience that is comfortable, easy, and meets expectations to maintain long-

term satisfaction. Customer retention strategies that solely emphasize promotions or claimed benefits without addressing perceived safety and actual experiences will struggle to generate strong loyalty.

Research Limitations and Agenda

This study has several limitations that require a reflective reading. First, the cross-sectional design does not allow for tracking changes in security perceptions, user experience, satisfaction, and loyalty over time. However, in consumer behavior, loyalty often develops through repeated experiences and the accumulation of long-term evaluations. Therefore, causal inferences in this study must be interpreted within the confines of a single-period survey design.

Second, this study used the context of a single brand and a single region, so generalization of the results should be done with caution. The context of Skintific users in Samarinda provides contextual strength because it tests the model in a real market, but it also limits the study's ability to conclude that the same relationship patterns will be identical across other skincare brands, other beauty product categories, or regions with different consumer characteristics. These findings are therefore more appropriately positioned as strong contextual evidence than as universal generalizations.

Third, this research model still focuses on the mediating mechanism of consumer satisfaction and does not include boundary conditions that might strengthen or weaken the relationship between variables. Recent literature shows that loyalty behavior can also be influenced by brand trust, perceived value, risk sensitivity, electronic word of mouth, and consumer involvement in digital communities. Therefore, the model used is adequate to explain the main pathways, but it does not capture the full complexity of contemporary skincare consumer behavior.

The future research agenda should focus on three areas of development. First, longitudinal research is needed to determine whether the influence of perceived security and user experience on loyalty remains stable, strengthens, or declines over a longer period of product use. Second, future research could add moderators such as brand trust, product involvement, skin sensitivity, or the intensity of exposure to digital reviews to more rigorously test the theory's boundary conditions. Third, comparative studies across brands, cities, or countries could expand the model's external validity and clarify whether security and experience have similar strengths across different cultural and market contexts. This line of research is crucial for extending consumer behavior theory to the personal care category, which is increasingly influenced by risk, digital information, and multisensory experiences.

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