Smart Techno (Smart Technology, Informatic, and Technopreneurship)
Volume 8, Number 2, 2026 pp. 174-187
E-ISSN : 2541-0679
Open Access: https://lppm.primakara.ac.id/jurnal/index.php/smart-techno/

The Influence of Smart Technology Experience on Satisfaction Mediated by Generation Z Loyalty in Bali's Tourism and Hospitality Industry

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ARTICLE INFO
Article history:
Initial submission
04-03-2026
Received in revised form
09-03-2026
Accepted 16-03-2026
Available online 30-09-2026

Keywords:
Smart technology, User experience, Customer satisfaction, Tourist loyalty, Hospitality

DOI:
https://doi.org/10.59356/smart-techno.v8i2.209

ABSTRAK

This study examines the influence of Smart Technology Experience (STE) on Generation Z satisfaction and loyalty in Bali's tourism and hospitality industry amid the increasing digitalization of service delivery and the growing expectations of young tourists for technology-enabled experiences. Using a quantitative explanatory design, data were collected through a survey of Generation Z respondents who had used smart technology-based tourism and hospitality services in Bali. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to test both the direct relationships among variables and the mediating role of satisfaction. The findings show that STE has a positive and significant effect on satisfaction, and satisfaction has a positive and significant effect on loyalty. STE also exerts a direct positive effect on loyalty, indicating that Generation Z loyalty is shaped not only through evaluative satisfaction but also through the perceived value of the technology experience itself. In addition, satisfaction partially mediates the relationship between STE and loyalty. These findings suggest that tourism and hospitality providers in Bali need to design smart technology experiences that are seamless, relevant, and supportive of service quality in order to strengthen satisfaction and foster loyalty among Generation Z travelers.

1. INTRODUCTION

The development of smart technologies such as artificial intelligence (AI), Internet of Things (IoT), mobile applications, and automation-based digital services has fundamentally transformed the tourism and hospitality industry. Smart technology is no longer positioned merely as an operational support tool as an operational support tool, but rather as an integral part of creating a personalized, efficient, and user experience-oriented travel experience (Yap et al., 2025; Wisnawa et al., 2023; Wisnawa et al., 2025). This transformation is increasingly relevant in the context of Generation Z, known as the digital native generation with high levels of expectations for technology-based services (Stylos et al., 2021; Seyfi et al., 2024).

Generation Z, who were born between 1995-2010, have unique characteristics in interacting with technology, particularly in the context of tourism and hospitality. Various Scopus studies show that Generation Z assesses travel experiences based on the ease of use of technology, personalization of services, and seamless digital integration with conventional services (Alnawafleh et al., 2025; Kim & Han, 2022). In this context, Smart Technology Experience becomes an important determinant that shapes post-use satisfaction and behavior, including loyalty and intent to reuse services (Dianawati et al., 2024; Serra-Cantallops et al., 2018).

The Scopus literature also confirms that Generation Z's satisfaction with smart technology in hospitality and tourism is multidimensional, including functional, emotional, and immersive experience aspects (Mandal et al., 2024; Zhu et al., 2025). This satisfaction further plays a key role in building loyalty, both in the form of return intent and electronic word-of-mouth (eWOM) (Serra-Cantallops et al., 2018). Thus, the relationship between Smart Technology Experience, Satisfaction, and Loyalty is a central issue in technology-based tourism research.

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Nevertheless, the results of the Scopus literature synthesis show that most research related to Generation Z and smart technology in the tourism and hospitality industry is still concentrated in the context of Europe and East Asia, while empirical studies in other global tourism destinations are still relatively limited (Toboso-Gómez et al., 2025). In fact, the literature also emphasizes that cultural context and destination characteristics have a significant role in shaping users' perceptions of experience, satisfaction, and loyalty to smart technology (Marozzo et al., 2024; Rossi et al., 2025).

In this context, Bali is a strategic and scientifically relevant research location. Bali is known as one of the major international tourism destinations, with strong characteristics of cultural experiences, human interaction (high-touch hospitality), as well as the increasingly intensive adoption of smart technology in the tourism and hospitality sectors. The combination of cultural values, emotional experiences, and the implementation of smart technology makes Bali a rich empirical context to examine how Generation Z forms satisfaction and loyalty through technological experiences. This is in line with the Scopus literature that highlights the importance of a balance between high-tech and high-touch in creating an optimal hospitality experience for Generation Z (Rossi et al., 2025; Seyfi et al., 2024).

Theoretically, the relationship between technology experience, satisfaction, and loyalty is explained through the perspective of experience-based theory and value-based satisfaction framework. The smart tourism literature emphasizes that Generation Z's satisfaction is not only shaped by the functional benefits of technology, but also by the emotional dimensions, pleasure, and experiential engagement that result from interaction with smart technology (Mandal et al., 2024; Zhu et al., 2025). This satisfaction further plays a key determinant of loyalty, which is reflected in the intention to return and recommendations through electronic word-of-mouth (Serra-Cantallops et al., 2018).

Previous studies have also confirmed that the experience of using smart technology can have a direct influence on loyalty, in addition to through satisfaction mechanisms (Alnawafleh et al., 2025). This shows that the technology experience itself has become part of the value proposition evaluated by Generation Z in choosing and maintaining a preference for tourism and hospitality services.

Although studies on Generation Z and smart technology in the tourism and hospitality industry continue to grow, the synthesis of the Scopus literature shows that there is an inequality in the geographical context of the study. Most empirical studies still focus on the European and East Asian regions, while research on other global tourism destinations is still relatively limited (Toboso-Gómez et al., 2025). In fact, the literature also emphasizes that cultural context and destination characteristics greatly influence how Generation Z shapes perceptions of experience, satisfaction, and loyalty to smart technology (Marozzo et al., 2024; Rossi et al., 2025).

In this context, Bali as an international tourism destination with a strong cultural character, high-touch hospitality-based service interaction, and the wider adoption of smart technology in the tourism and hospitality sectors, offers a relevant and strategic empirical context. The study in Bali allowed testing the relationship between Smart Technology Experience, Satisfaction, and Loyalty in a destination environment that demands a balance between modern technology and cultural experience, as highlighted in the smart hospitality literature (Seyfi et al., 2024; Rossi et al., 2025).

To answer these problems, this study adopts a quantitative approach with the Partial Least Squares–Structural Equation Modeling (PLS-SEM) method. The research model was designed to test the influence of Smart Technology Experience on Generation Z Satisfaction and Loyalty, as well as the role of Satisfaction as a mediating variable. This approach was chosen because it is suitable for analyzing causal relationships between latent constructs and providing strong predictive capabilities in the context of technology user behavior (Yap et al., 2025).

Thus, this study does not position Bali as a geographical limitation, but rather as a contextual contribution that expands the empirical understanding of Generation Z behavior in

tourism destinations with a global and culture-based character. This study aims to analyze the influence of Smart Technology Experience on Generation Z Satisfaction and Loyalty in the tourism and hospitality industry in Bali, so that it is expected to make a theoretical contribution to the development of smart tourism literature as well as practical implications for destination managers and hospitality industry players.

2. LITERATURE REVIEW

Smart Technology in the Tourism and Hospitality Industry

Recent research shows that the implementation of smart technology in the tourism and hospitality industry has evolved from just service automation to the creation of experience-based value co-creation. A systematic study by Yap et al. (2025) confirms that smart tourism technologies, including AI, IoT, mobile applications, and immersive technologies, contribute significantly to tourist satisfaction through increased efficiency, convenience, and quality of service interactions. However, the effectiveness of such technology depends largely on how the technology is integrated with the context of the service and the characteristics of the user.

In the context of hospitality, Kim and Han (2022) and Dianawati et al. (2024) show that smart hotel technologies have a positive impact on satisfaction and loyalty when users have adequate technology readiness and experience benefits firsthand. These findings confirm that user experience is a key construct in evaluating the success of smart technology, beyond just the adoption of the technology itself.

Generation Z and the Smart Technology Experience

Generation Z is positioned in the literature as the first generation to fully grow up in a digital environment, so it has a different evaluation pattern towards technology-based services. Stylos et al. (2021) and Seyfi et al. (2024) affirm that Generation Z assesses tourism and hospitality services not only by the end result, but by the quality of the technological interaction experience they experience throughout the service journey.

Empirical studies show that Generation Z highly values personalized, intuitive, and seamless technology experiences, yet remains sensitive to experiences that feel too mechanical or technologically redundant (Rossi et al., 2025). Mandal et al. (2024) and Zhu et al. (2025) reinforce this view by showing that technology-based immersive experiences can increase satisfaction and return intent, as long as they are able to create emotional engagement and not just a novelty effect.

Satisfaction as an Evaluative Mechanism in Smart Tourism

Satisfaction in the context of smart tourism is understood as a multidimensional construct that includes cognitive, affective, and emotional evaluation of experiences. Serra-Cantallops et al. (2018) show that experiential satisfaction has a central role in driving loyalty and eWOM in tourism services. Recent literature confirms that in the context of Generation Z, satisfaction is increasingly influenced by emotional experiences and experiential value, not just by the quality of functional services (Mandal et al., 2024; Yap et al., 2025).

However, some studies still treat satisfaction as the final outcome, without explicitly examining its role as a mediating mechanism between technology experience and loyalty. This shows an opportunity to deepen our understanding of how satisfaction works as a psychological link in Generation Z's behavioral models.

Loyalty in the Context of Smart Technology

Loyalty in smart tourism research is generally operationalized through the intention to return to visit, preference for service providers, and digital recommendations. Alnawafleh et al. (2025) show that positive technological experiences can directly shape loyalty, especially in young tourists who view technology as part of their identity and lifestyle.

However, the literature also notes that Generation Z's loyalty is more dynamic and contextual than previous generations. The Toboso-Gómez et al. (2025) study confirms that

Generation Z's loyalty is strongly influenced by the suitability of experiences with personal values and the context of the destination, so that research results in one region cannot necessarily be generalized to other contexts without additional empirical testing.

Research Gap

Based on the synthesis of the state of the art Scopus literature, there are several research gaps relevant to this study. First, although the relationship between smart technology, satisfaction, and loyalty has been extensively researched, experience-based approaches (Smart Technology Experience) are still relatively limited to being comprehensively tested as a key construct in Generation Z's behavioral models (Yap et al., 2025; Rossi et al., 2025).

Second, the Scopus literature shows a geographical bias, where most empirical studies have been conducted in the European and East Asian regions, while other international tourism destinations with strong cultural characters are still underrepresented (Toboso-Gómez et al., 2025). In fact, Marozzo et al. (2024) and Rossi et al. (2025) emphasize that the cultural context and character of the destination play an important role in shaping experience, satisfaction, and loyalty to smart technology.

Third, there is still limited research that explicitly examines the role of satisfaction mediation in the relationship between Smart Technology Experience and Generation Z Loyalty in the context of experiential and culture-based tourism destinations.

Based on this gap, this study positions itself to fill the literature gap by testing the relationship model between Smart Technology Experience, Satisfaction, and Loyalty of Generation Z in the context of Bali as an international tourism destination, thereby making an empirical and contextual contribution to the development of smart tourism and hospitality literature.

Conceptual Framework and Hypothesis

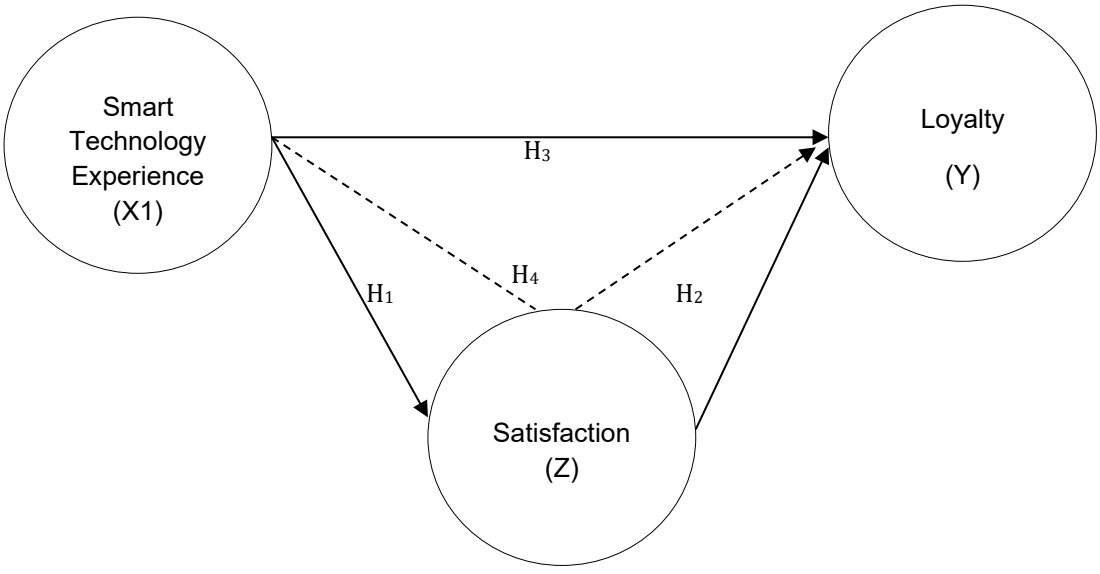


Figure 1. Conceptual Framework and Hypothesis

The image represents a conceptual model of mediation in the context of smart tourism and hospitality, where Smart Technology Experience (X1) is positioned as an exogenous variable that affects Satisfaction (Z) as a mediator variable, and Loyalty (Y) as an endogenous variable. This structure shows two paths of loyalty formation: (1) the indirect path through satisfaction (X1 → Z → Y) which emphasizes that the experience of technology shapes affective evaluation first before driving loyalty, and (2) the direct path (X1 → Y) which affirms that the quality of the technological experience can trigger loyalty without having to rely entirely

on satisfaction as the only explanatory mechanism in the experience of Generation Z travelers in tourism and hospitality services (Seyfi et al., 2024; Yap et al., 2025; Rossi et al., 2025).

Based on this model, the research hypothesis is formulated as follows: H1 states that Smart Technology Experience has a positive effect on satisfaction, because easy, relevant, and fun technology experiences serve as experience values that reinforce the positive evaluation of young tourists as digital natives (Stylos et al., 2021; Kim & Han, 2022; Dianawati et al., 2024). H2 states that satisfaction has a positive effect on loyalty, because satisfaction is a comprehensive assessment of service experience that drives repeat intent and recommendations, especially in increasingly digitized services (Serra-Cantallops et al., 2018; Mandal et al., 2024; Toboso-Gómez et al., 2025). H3 states that Smart Technology Experience has a direct positive effect on loyalty, because technological experiences can create attachment and behavioral preferences through experiential value, even when evaluative mechanisms (satisfaction) are not yet the only determinant (Alnawafleh et al., 2025; Yap et al., 2025; Zhu et al., 2025). Furthermore, the study also examined the role of satisfaction mediation, which assumes that technological experiences increase loyalty indirectly through satisfaction formation, so that the X1–Y relationship is explained through direct and indirect pathways simultaneously in the smart tourism and hospitality ecosystem (Serra-Cantallops et al., 2018; Kim & Han, 2022; Seyfi et al., 2024).

3. METHODS

Types and Approaches to Research

This study uses a quantitative approach with an explanatory research method, which aims to explain the causal relationship between the variables of Smart Technology Experience, Satisfaction, and Loyalty of Generation Z in the context of the tourism and hospitality industry. This approach was chosen because it is suitable for testing theoretical models and hypotheses that have been formulated based on literature reviews related to smart technology and Generation Z behavior.

Population and Research Sample

The population in this study is Generation Z, namely individuals born between 1995–2010, who have experience using tourism and/or hospitality services based on smart technology, such as digital applications, smart reservation systems, automated services, or AI and IoT-based technologies.

The sampling technique used in this study was non-probability sampling with a purposive sampling approach. Respondents were selected based on the following criteria: (1) belonging to the Generation Z age group, and (2) having used tourism or hospitality services that implement smart technology. The questionnaire was distributed online to reach respondents who matched these criteria, and participation was limited to individuals with relevant service experience in the Bali tourism and hospitality context.

The study did not target the general population randomly; instead, it specifically focused on eligible respondents whose experiences were relevant to the research objectives. The geographical scope of the study covered the Bali tourism and hospitality context, as reflected in the respondents' reported service experiences.

The sample size was determined based on the recommendations of the Partial Least Squares–Structural Equation Modeling (PLS-SEM) approach. Considering the number of indicators and structural paths in the research model, a minimum of 200 respondents was considered sufficient to produce stable and reliable parameter estimates.

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Data Collection Techniques

Data were collected using a structured questionnaire distributed online. The research instrument was developed based on indicators adapted from previous relevant studies and has been tested for validity and reliability. Each statement is measured using a five-point Likert scale, ranging from: 1=strongly disagree to 5=strongly agree.

Operational Variables and Definitions

This research involves three main variables, namely:

1. Smart Technology Experience as an independent variable,
2. Satisfaction as a mediating variable, and
3. Loyalty as a dependent variable.

All variables were measured using a reflective measurement model, as the indicators used reflected the latent construct measured.

Data Analysis Techniques

Data analysis in this study was carried out using the Partial Least Squares–Structural Equation Modeling (PLS-SEM) method with the help of SmartPLS software. The PLS-SEM method was chosen because it is able to analyze complex structural models, does not require normal data distribution, and is suitable for use in exploratory and predictive research with medium sample sizes (Furandantin, 2018). The stages of data analysis include two main stages, namely (Hair, Risher, et al., 2019):

1. Evaluation of Measurement Model, Evaluation of the measurement model was carried out to test the validity and reliability of the research construct, which included:
   a. Convergent validity, which is assessed through *outer loading* values and *Average Variance Extracted (AVE)*,
   b. Discriminant validity, which is tested using *the Heterotrait-Monotrait Ratio (HTMT)* value,
   c. Construct reliability, which is evaluated through *Cronbach's Alpha* and *Composite Reliability (CR) values*.

   The indicator is declared valid and reliable if it meets the recommended value criteria in the PLS-SEM analysis.
2. Structural Model Evaluation, Structural model evaluation aims to test the relationship between latent variables and research hypotheses. Testing is carried out through:
   a. Path coefficient analysis,
   b. R-square value (R^2) to assess the predictive ability of the model,
   c. Effect size (f^2) to measure the contribution of each independent variable,
   d. Predictive relevance (Q^2) to assess the predictive relevance of the model.
   e. The significance test was carried out using a bootstrapping procedure with 5,000 resampling, so that *t-statistics* and *p-values were obtained*.

   In addition, testing the Satisfaction mediation effect was carried out by analyzing the indirect influence between Smart Technology Experience and Loyalty through bootstrapping procedures.

4. RESULTS AND DISCUSSION

Evaluation of Measurement Model

The evaluation of the measurement model was carried out to test the validity and reliability of the research constructs, which included Smart Technology Experience, Satisfaction, and Loyalty. The results of the convergent validity test showed that all indicators had *an outer loading* value above the recommended minimum limit, which was 0.70 (table 1). In addition, the *Average Variance Extracted* (AVE) value for each construct also shows a value above 0.50, so it can be concluded that the entire construct meets the convergent validity criteria (Hair, 2021).

Furthermore, the reliability of the construct was tested using Cronbach's Alpha and Composite Reliability (CR) values. The results of the analysis showed that the entire construct had Cronbach's Alpha and Composite Reliability values that exceeded the minimum limit of 0.70. Thus, all constructs in this study were declared reliable and consistent in measuring the latent variables studied (Hair, Risher, et al., 2019b).

Table 1. Convergent Validity and Construct Reliability Test Results

Variable	Indicators	Outer Loading	Cronbach's Alpha	Composite Reliability	AVE
Smart Technology Experience	X1	0,798	0,889	0,918	0,692
	X2	0,846			
	X3	0,827			
	X4	0,841			
	X5	0,847			
Satisfaction	Z1	0.818	0,843	0,895	0,680
	Z2	0.847			
	Z3	0.784			
	Z4	0.847			
Loyalty Intention	Y1	0.835	0,878	0,916	0,733
	Y2	0.833			
	Y3	0.880			
	Y4	0.875			

General criteria:

- Outer loading ≥ 0.70
- Cronbach's Alpha ≥ 0.70
- Composite Reliability ≥ 0.70
- AVE ≥ 0.50

Discriminating Validity Test

The results of the discriminant validity test using HTMT showed that the value between Satisfaction and Loyalty Intention was at the borderline level. However, HTMT values that are close to the threshold are still acceptable, especially for conceptually adjacent constructs of attitudes and behavioral intentions (Hair, Black, et al., 2019). In addition, the Fornell–Larcker criteria remained met and the overall AVE value was above 0.50 (Table 2), which indicates that each construct is able to adequately explain the variance of its indicators (Fornell & Larcker, 1981). Theoretically, Satisfaction represents affective evaluation, while Loyalty Intention reflects future behavioral intentions, so that even though they are highly correlated, the two constructs are still conceptually distinguishable (Oliver, 1999).

Table 2. Results of the Discriminant Validity Test (HTMT) and Fornell Larcker

HTMT_Variable	STE	Satisfaction	Loyalty
Smart Technology Experience	-		
Satisfaction	0,776	-	
Loyalty Intention	0,830	0,903	-
Fornel Larcker_Variable	**STE**	**Satisfaction**	**Loyalty**
Smart Technology Experience	0,832	0,825	0,735
Satisfaction		0,673	0,777
Loyalty Intention			0,856

HTMT < 0.85 (tight) or < 0.90 (loose)

Multicollinearity Test

The multicollinearity test was carried out by looking at the value of the Variance Inflation Factor (VIF) at each relationship between constructs in the structural model. The results of the analysis showed that the entire VIF value (Table 3) was below the maximum limit of 3.3 (Hair, Black, et al., 2019). Thus, it can be concluded that there is no problem of multicollinearity between independent variables in this research model.

Table 3. Value of Variance Inflation Factor (VIF) .

Relationship Between Variables	VIF
Smart Technology Experience → Satisfaction	1,000
Smart Technology Experience → Loyalty	1,827

Satisfaction → Loyalty	1,827

VIF Criteria:

- VIF < 3.3 (ideal) or < 5 (still accepted)

Structural Model Evaluation

Structural model evaluation was carried out to test the causal relationship between latent variables and test the research hypothesis. The test was conducted using a bootstrapping procedure with 5,000 resamples (Table 4).

The test results show that Smart Technology Experience has a positive and significant effect on Satisfaction. A positive path coefficient value shows that the better Generation Z's experience in using smart technology, the higher the level of satisfaction felt.

Furthermore, the results of the analysis also show that Satisfaction has a positive and significant effect on Loyalty. These findings indicate that a high level of satisfaction with smart technology-based tourism and hospitality services encourages Generation Z to have loyal intentions, both in the form of reuse and recommendations to other parties.

In addition, Smart Technology Experience has also been proven to have a positive and significant effect on Loyalty. This shows that the first-hand experience of using smart technology not only affects loyalty through satisfaction, but also has a direct influence on the loyal intentions of Generation Z.

Table 4. Structural Model Test Results (Path Coefficient) .

Hipotesis	Relationship	Path Coefficient (β)	t-statistic	p-value	Decision
H1	STE to Satisfaction	0.677	7,416	0,000	Accepted
H2	Satisfaction to Loyalty	0,514	5,713	0,000	Accepted
H3	STE to Loyalty	0.390	12,605	0,000	Accepted

Significance criteria:

- t-statistic > 1.96
- p-value < 0.05

Coefficient of Determination (R^2)

The value of the determination coefficient (R^2) is used to assess the predictive ability of the model. The results of the analysis show that the Smart Technology Experience variable is able to explain the variation in Satisfaction at a moderate level (Table 5). Meanwhile, the combination of the variables Smart Technology Experience and Satisfaction is able to explain the variation in Loyalty with a moderate to strong level of explanation.

These findings show that the research model has adequate predictive power in explaining the behavior of Generation Z in the tourism and hospitality industry based on smart technology.

Table 5. Value of Coefficient of Determination (R^2)

Variable endogenous	R^2
Satisfaction	0,453
Loyalty Intention	0,688

General interpretation:

- 0.75 = Strong
- 0.50 = moderate
- 0.25 = weak

Effect Size (f^2)

Effect size (f^2) analysis was carried out to measure the amount of contribution of each independent variable to the dependent variable. The test results show that the influence of Smart Technology Experience on Satisfaction is in the medium category (Table 6). The effect of Satisfaction on Loyalty also showed a significant effect size, while the direct influence of Smart Technology Experience on Loyalty was in the small to medium category.

These results indicate that Satisfaction plays an important role in explaining Generation Z's loyalty to smart technology-based services.

Table 6. Effect Size (f^2) Test Results .

Relationship	f^2	Category
STE → Satisfaction	0,827	Large
STE → Loyalty	0,267	Medium
Satisfaction → Loyalty	0,464	Large

* Interpretation of f^2:
- 0.02 = small
- 0.15 = moderate
- 0.35 = large

Predictive Relevance (Q^2)

The predictive relevance value (Q^2) for endogenous variables shows a positive value (Table 7). This indicates that the research model has good predictive capabilities, as well as being relevant in predicting Generation Z's satisfaction and loyalty in the context of smart technology-based tourism and hospitality.

Table 7. Predictive Relevance (Q^2) Test Results .

Variable Endogen	Q^2
Satisfaction	0,301
Loyalty Intention	0,494

* $Q^2 > 0$ shows the model has predictive relevance

Satisfaction Mediation Test

The mediation effect test was conducted to determine the role of Satisfaction in mediating the relationship between Smart Technology Experience and Loyalty (Table 8). The results of the indirect effects test showed that the Smart Technology Experience → Satisfaction → Loyalty pathway had a significant effect. Thus, Satisfaction has been proven to play a role as a mediating variable in the relationship.

Based on the significance of direct and indirect influences, the results of the study show that Satisfaction acts as a partial mediation, where Smart Technology Experience still has a direct influence on Loyalty even through Satisfaction.

Table 8. Satisfaction Mediation Test Results

Hubungan Mediasi	Indirect Effect	t-statistic	p-value	VAF	Jenis Mediasi
H4. STE → Satisfaction → Loyalty	0,348	6,657	0,00	47,10%	Parsial

* Mediation tested through **bootstrapping (5,000 resampling)**

DISCUSSION

This study aims to analyze the influence of Smart Technology Experience on Generation Z Satisfaction and Loyalty in the context of the tourism and hospitality industry. The results of the study show that the experience of using smart technology has a significant role in shaping the satisfaction and loyalty of Generation Z, both directly and through satisfaction mediation mechanisms. These findings strengthen and expand the understanding that has been put forward in the Scopus literature regarding Generation Z's behavior towards smart technology in the hospitality and tourism sectors.

The Influence of Smart Technology Experience on Generation Z Satisfaction

The results indicate that STE has a positive and significant effect on Generation Z satisfaction (Seyfi, 2024). From an experience-based perspective, technological experiences

perceived as seamless, user-friendly, and relevant to user needs constitute an important source of value that shapes affective evaluations in the form of satisfaction (Yap, 2025; Kim & Han, 2022). In this sense, smart technology becomes part of the overall “experience product” through which Generation Z evaluates service quality more broadly (Dianawati, 2024; Yap, 2025; Wisnawa et al., 2023; Wisnawa et al., 2025).

This finding suggests that, for Generation Z as digital natives, satisfaction is increasingly shaped by experiences that combine functional efficiency with emotional engagement (Stylos, 2021; Seyfi, 2024). Prior smart tourism studies show that young travelers value not only convenience, but also enjoyment, immersion, and meaningful interaction with technology-enabled services (Mandal, 2024; Zhu, 2025). In Bali, however, the contribution of smart technology to satisfaction depends on how well it aligns with the destination’s high-touch hospitality culture. Smart technology is therefore most effective when it supports service flow, responsiveness, and personalization without replacing the warmth, attentiveness, and cultural authenticity conveyed through interpersonal service encounters. Accordingly, satisfaction is more likely to emerge when technology enhances the service journey while preserving the relational and experience-centered values that define Balinese hospitality (Rossi, 2025; Marozzo, 2024).

The Effect of Satisfaction on Generation Z's Loyalty

The findings show that satisfaction has a positive and significant effect on Generation Z's loyalty. Conceptually, this is consistent with the view that satisfaction is an evaluative mechanism that drives post-use behavioral intentions, including repeat visits and digital recommendations (Serra-Cantallops, 2018). In the context of smart technology-based services, satisfaction acts as an "experience validation" that strengthens preferences for service providers, especially when the perceived experience is in line with the digital expectations of Generation Z (Yap, 2025; Dianawati, 2024). Thus, satisfaction is not only a psychological outcome, but also a trigger for the formation of relevant loyalty in the digital tourism ecosystem (Serra-Cantallops, 2018; Kim & Han, 2022).

Furthermore, the literature emphasizes that Generation Z loyalty is dynamic and is strongly influenced by the suitability of experiences with personal values and the context of the destination (Toboso-Gómez, 2025). These findings reinforce the argument that when satisfaction is formed through meaningful technological experiences, Generation Z tends to show loyalty as a continuation of experiences that are considered valuable and worth sharing (Serra-Cantallops, 2018; Mandal, 2024). From a smart tourism perspective, the satisfaction triggered by engaging and personalized technological experiences can facilitate loyalty through affective as well as social channels as Generation Z views digital experiences as part of their identity and communication (Stylos, 2021; Seyfi, 2024).

The Direct Influence of Smart Technology Experience on Loyalty

Beyond its effect on satisfaction, the findings also confirm that STE has a direct effect on loyalty. Theoretically, this suggests that technological experience may function as a form of experiential value strong enough to foster loyal intentions, even when satisfaction is not the sole determinant of future behavioral commitment (Alnawafleh, 2025; Yap, 2025). The technology-driven hospitality literature further indicates that young travelers are more likely to develop attachment to service providers when technology offers convenience, control, and a sense of modern relevance consistent with their digital lifestyles (Kim & Han, 2022; Dianawati, 2024). In this respect, technology should be understood not merely as a supporting facility, but as part of the broader value proposition capable of shaping behavioral preferences and commitment (Alnawafleh, 2025; Yap, 2025).

In the context of Bali, this direct effect is particularly important because the destination is characterized by a strong experiential orientation and high expectations of personalized service. However, the contribution of smart technology to loyalty depends not only on its sophistication, but also on how well it aligns with Bali’s distinctive high-touch hospitality culture

(Rossi, 2025; Seyfi, 2024). Smart technology is therefore most likely to strengthen loyalty when it complements rather than replaces interpersonal service encounters. By improving personalization, service integration, responsiveness, and ease of access, technology can enrich the travel experience, while frontline staff continue to deliver the warmth, attentiveness, and cultural authenticity that define Balinese hospitality. Accordingly, loyalty is more likely to develop when technology enhances the overall service experience without diminishing the relational values that visitors associate with hospitality in Bali (Marozzo, 2024; Alnawafleh, 2025).

The Role of Satisfaction Mediation in Smart Technology Experience and Loyalty Relationships

Taken together, the direct effects of STE on satisfaction and loyalty provide a basis for understanding the mediating role of satisfaction in this relationship. The mediation analysis showed that satisfaction partially mediates the relationship between STE and loyalty. Conceptually, partial mediation indicates the presence of two complementary pathways through which loyalty is formed: an indirect pathway through affective evaluation in the form of satisfaction, and a direct pathway through the experiential value of the technology itself (Serra-Cantallops, 2018; Alnawafleh, 2025). These findings are consistent with the smart tourism literature, which positions satisfaction as a key psychological mechanism while also recognizing that highly valued technological experiences may generate behavioral preference without relying exclusively on satisfaction as the sole intervening factor (Yap, 2025; Kim & Han, 2022).

From a smart tourism consumer behavior perspective, satisfaction may be understood as a comprehensive evaluation of the functional, emotional, and immersive benefits generated by STE (Mandal, 2024; Zhu, 2025). When STE provides consistent ease, comfort, and emotional engagement, satisfaction reinforces and stabilizes loyal intentions over time (Serra-Cantallops, 2018; Mandal, 2024). At the same time, because Generation Z tends to be highly adaptive to innovation, technological experiences perceived as superior and relevant may also foster loyalty directly, as an attachment to the quality of the digital experience itself (Stylos, 2021; Alnawafleh, 2025).

In the context of Bali, however, this pattern of partial mediation should be understood in relation to the destination's distinctive high-touch hospitality culture. The role of smart technology is not simply to introduce efficiency or digital sophistication, but to support service encounters in ways that remain compatible with the warmth, attentiveness, and cultural authenticity expected in Balinese hospitality (Rossi, 2025; Marozzo, 2024). In this sense, satisfaction is more likely to mediate the STE loyalty relationship when technology enhances service flow, personalization, and responsiveness while preserving meaningful interpersonal interaction. Likewise, the direct effect of STE on loyalty may emerge when visitors perceive that digital convenience strengthens, rather than diminishes, the relational and experience-oriented qualities of the hospitality encounter. Thus, in Bali, loyalty is reinforced not only because technology performs well, but because it is integrated in a way that complements the high-touch character of the destination experience (Yap, 2025; Seyfi, 2024).

Theoretical Contributions

Theoretically, this study strengthens the literature on smart tourism and hospitality by affirming STE as the main antecedent of satisfaction and loyalty in Generation Z, thereby deepening an experience-based approach in explaining the behavior of technology users in tourism services (Yap, 2025; Seyfi, 2024). Another important contribution is the affirmation that satisfaction serves as a significant but not exclusive mediation mechanism; that is, Generation Z loyalty can be formed through the affective path (satisfaction) and the direct experiential value path (Serra-Cantallops, 2018; Alnawafleh, 2025). These findings enrich the understanding that in Generation Z, quality technology experiences can be a "core value" that directly directs loyal intent, in line with the character of those who value services through meaningful digital interaction experiences (Stylos, 2021; Mandal, 2024).

The significance of the Balinese context also strengthens the contextual contribution of research, especially in answering the geographical bias that is still dominant in the study of Generation Z and smart technology (Toboso-Gómez, 2025). The literature confirms that destination culture and character influence the way tourists shape experiences, satisfaction, and loyalty, so model testing on international tourism destinations with strong cultural characteristics is important to expand the external validity of findings (Marozzo, 2024; Rossi, 2025). By placing Bali as an empirical context, this study shows that the integration of high-tech and high-touch can shape the dynamics of technological experiences that are typical of Generation Z, while enriching the smart tourism discourse in destinations that not only rely on technology, but also the power of cultural and hospitality experiences (Seyfi, 2024; Rossi, 2025).

Practical Implications

The finding that STE has a strong effect on satisfaction and also has a direct influence on loyalty requires tourism-hospitality business actors in Bali to position technology as *an experience enabler*, not just an additional feature (Yap et al., 2025; Alnawafleh et al., 2025). In practical terms, technology investment needs to be directed at the quality of the end-to-end experience from *pre-trip* (information search, booking, communication), *on-site* (check-in, room service, facility access), to *post-trip* (feedback, after-sales service, customer community) so that technology truly enhances the perception of value and generates positive evaluations (Kim & Han, 2022; Mandal et al., 2024). Because Generation Z assesses services through high standards of digital experience, implementation priorities should emphasize convenience, speed, personal relevance, and consistency across service channels so that satisfaction is stable (Stylos et al., 2021; Dianawati et al., 2024).

The results of partial mediation imply that management is not enough to only pursue *the wow effect* of technology, but must also manage satisfaction as a lever for loyalty through service quality control and *data-driven service recovery* (Serra-Cantallops et al., 2018; Yap et al., 2025). Therefore, companies need to make satisfaction indicators at digital touchpoints an operational KPI for example, monitoring friction in the ordering and check-in process, system reliability, and assistance responsiveness as small improvements to the technology experience can have a big impact on loyalty (Kim & Han, 2022; Alnawafleh et al., 2025). In addition, because Generation Z loyalty is also strong in the form of *electronic word-of-mouth*, service providers need to design technology experiences that are easy to share (shareable) and provide room for customer participation, so that loyalty emerges not only as a repeat visit, but also a digital recommendation that expands the impact of marketing (Serra-Cantallops et al., 2018; Toboso-Gómez et al., 2025).

At the destination level, these findings strengthen the urgency of integrating the smart tourism ecosystem in Bali through collaboration between hotels, attractions, transportation, and destination managers so that the digital experience of tourists is not fragmented (Seyfi et al., 2024; Rossi et al., 2025). The practice can be realized through service interoperability and consistency of experience standards (e.g. information integration, service access, and customer support across providers), so that STE is perceived as a complete destination experience and contributes to loyalty to Bali as a destination, not just to one provider (Marozzo et al., 2024; Rossi et al., 2025). However, because Bali is a destination with a strong cultural character, technology implementation strategies must still balance *high-tech* with *high-touch* so that technology enriches not replaces the value of hospitality and the authenticity of the experience (Seyfi et al., 2024; Marozzo et al., 2024).

For developers and technology solution providers, these results provide direction that system design should be oriented towards experience design and engagement, not just process automation (Zhu et al., 2025; Mandal et al., 2024). Effective implementation requires repeated testing based on Generation Z user behavior and the alignment of features with the context of tourism-hospitality services, so that technology is able to deliver experience value that directly triggers loyalty while strengthening satisfaction (Stylos et al., 2021; Yap et al.,

2025). Thus, the study's main practical recommendation is to focus digital transformation on the quality of STE that is consistent, integrated, and relevant to Generation Z's consumption style as the direct and indirect pathways found suggest that the right technology experience can be the "motor" of loyalty in Bali's tourism and hospitality industry (Alnawafleh et al., 2025; Serra-Cantallops et al., 2018).

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5. CONCLUSION

This study concludes that Generation Z's Smart Technology Experience (STE) in Bali's tourism and hospitality services is a key factor in enhancing satisfaction. The satisfaction generated through technology experience subsequently plays a significant role in strengthening loyalty, both in the form of revisit intention and recommendation behavior. In addition, STE also exerts a direct influence on loyalty, indicating that the quality of the technology experience may foster behavioral attachment without necessarily being preceded by satisfaction as the sole evaluative pathway. These findings confirm that satisfaction partially mediates the relationship between STE and loyalty, suggesting that Generation Z loyalty is formed through both direct and indirect mechanisms. Importantly, in the context of Bali, these findings also imply that the effectiveness of smart technology depends not only on its functional quality, but also on how well it aligns with the destination's high-touch hospitality culture. Smart technology is therefore most valuable when it supports service efficiency, responsiveness, and personalization without diminishing the warmth, attentiveness, and cultural authenticity that characterize Balinese hospitality. Overall, the study confirms that STE enhances satisfaction, satisfaction strengthens loyalty, STE directly influences loyalty, and satisfaction functions as a reinforcing mechanism through which technology experience contributes to loyalty in Bali's tourism and hospitality context.

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