



## Transforming the Tourism Experience with Gamification: The Mediating Effect of Customer Engagement on Loyalty

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### ABSTRACT

This study aims to analyze the impact of gamification on tourist loyalty at Dusun Bambu, with customer engagement as a mediating variable. This research adopts a quantitative approach using descriptive and verification methods. The main issue explored is how gamification influences tourist loyalty, both directly and through customer engagement as a mediating factor. Data collection was conducted by distributing questionnaires to a sample of 100 visitors to Dusun Bambu. The collected data were analyzed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method with the assistance of SmartPLS 3.0 software. This study utilizes both primary data obtained from questionnaires and secondary data from relevant literature sources. The findings indicate that gamification has a significant impact on tourist loyalty. Moreover, customer engagement is proven to be a mediating variable that strengthens the relationship between gamification and tourist loyalty. Increased customer engagement through gamification elements leads to a more enjoyable experience, ultimately enhancing loyalty to the destination. These findings are expected to provide insights for tourism managers in designing more effective gamification strategies to improve tourist experiences and loyalty. Additionally, this study can serve as a reference for tourists in evaluating their experiences before visiting a destination.

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## 1. INTRODUCTION

In an era of ever-growing globalization, innovation has become a key driver in maintaining industrial competitiveness and economic growth (Jusuf, 2022). One of the most rapidly evolving sectors is the technology industry, where digital advancements have transformed many aspects of human life (Sima et al., 2020). Innovations in information technology, artificial intelligence, and automation have significantly impacted various industries, including manufacturing, finance, education, and healthcare (Johnson et al., 2022).

According to data from the Ministry of Tourism and Creative Economy, the growth of tourism in Indonesia has shown a significant increase (Antara & Sumarniasih, 2017). Domestic and international tourist movements reached 433.57 million trips, reflecting a 12.57% rise from the previous year. Meanwhile, international tourist arrivals totaled 6.31 million visitors, marking an impressive 196.85% increase compared to the previous year.

To respond to these rapid changes, companies and organizations must quickly adapt to remain relevant and competitive. They not only need to follow technological trends but also create innovative solutions that enhance efficiency and productivity. With the increasing availability of data and the development of analytical technologies, companies have significant opportunities to leverage this information to make better business decisions and optimize their operations (Fenwick Vermeulen, 2015).

One of the emerging strategies that organizations are increasingly adopting is gamification. Gamification involves applying game design elements in non-game contexts to enhance user engagement, motivation, and participation. By incorporating elements such as rewards, leaderboards, challenges, and interactive experiences, organizations can improve user interaction and incentivize desired behaviors (Mauroner, 2019).

Gamification has been successfully implemented in various fields, including education, marketing, employee training, and customer engagement (Treiblmaier et al., 2018). In education, gamified learning platforms have demonstrated effectiveness in increasing student motivation and improving learning outcomes. By integrating elements such as progress tracking, badges, and interactive quizzes, students become more engaged and are encouraged to actively participate in their learning process (Yu et al., 2021).

In business, companies use gamification techniques to boost employee productivity, encourage collaboration, and enhance customer loyalty (Hussain et al., 2018). Employee training programs that incorporate game-like elements, such as point-based rewards and performance tracking, have been shown to increase motivation and learning retention. Similarly, customer engagement strategies that utilize gamification, such as loyalty programs and interactive brand experiences, help businesses maintain strong relationships with their customers and improve brand recognition (AlTuraif et al., 2023).

Similarly, in healthcare, gamification is utilized to promote healthy lifestyles, medication adherence, and patient engagement in treatment programs. Fitness apps, for instance, use gamified elements to encourage users to maintain an active lifestyle by setting challenges and rewarding achievements. Gamification is also integrated into mental health applications to provide users with coping mechanisms, goal-setting tools, and progress tracking to support their well-being (Tran et al., 2022).

Despite its growing popularity, gamification also presents challenges and ethical considerations. While well-designed gamification strategies can be highly effective, poorly implemented systems may lead to unintended consequences such as excessive competition, reduced intrinsic motivation, or data privacy concerns (Hussain et al., 2018).

One of the main concerns is over-reliance on extrinsic rewards, which may diminish intrinsic motivation. If users become overly focused on earning points or badges rather than

genuinely engaging in an activity, the long-term effectiveness of gamification may be compromised. Therefore, it is crucial to strike a balance between extrinsic and intrinsic motivators.

Another challenge is data security and privacy. Many gamification systems collect user data to personalize experiences and track progress. However, improper handling of this data can lead to security breaches and ethical concerns. Organizations must ensure that user information is protected and used responsibly (Daghestani *et al.*, 2020).

Additionally, gamification can lead to unhealthy competition if not designed thoughtfully. Overemphasizing leaderboards and rankings can create stress and anxiety, particularly in educational and workplace environments. To mitigate these risks, gamification strategies should focus on collaboration, progress-based rewards, and personalized challenges rather than purely competitive elements (AlTuraif *et al.*, 2023).

Gamification is a powerful strategy that has demonstrated significant benefits across various industries, including education, business, and healthcare. By leveraging game mechanics to enhance motivation, engagement, and behavioral change, organizations can drive innovation and achieve their strategic goals. However, careful planning and ethical considerations are essential to avoid potential drawbacks and ensure sustainable outcomes. As technology advances, the future of gamification holds exciting possibilities, promising even greater opportunities for businesses and individuals alike.

## 2. LITERATURE REVIEW

Gamification refers to the application of game design elements in non-gaming contexts to enhance engagement and motivation (Jacob *et al.*, 2022). According to Blohm and Leimester Hussain *et al.* (2018), gamification is defined as "the strategy of applying game design to upgrading non-game elements such as brand values, product/service values, or brand equity." In other words, gamification is a method that incorporates game design principles to enhance non-game aspects, including brand reputation, product or service value, and brand trust. According to AlTuraif *et al.* (2023), gamification is defined as "the use of game mechanics and experience design to digitally engage and motivate people to achieve their goals." This means that gamification involves the application of game elements and experience design in a digital environment to encourage and motivate individuals to reach their objectives.

According to Treiblmaier *et al.* (2018), gamification is described as "a tool that uses games in routine activities and in nonplayful environments, making them more fun and motivating. In this way, it takes advantage of their psychological predisposition to participate in games and fosters the desired behaviors in users." This means that gamification integrates game elements into daily activities, even in less engaging environments, to enhance enjoyment and motivation. By leveraging individuals' psychological inclination to engage in games, this approach encourages and reinforces desired behaviors among users.

According to Koivisto and Hamari (2019), gamification consists of several key dynamics, including rewards, which serve as incentives to encourage repeated behavior, and feedback, which provides individuals with insights into their performance for future improvement. Time plays a role in structuring events, while rules and goals define the framework within which actions take place. The narrative helps create a coherent storyline that enhances engagement, and the potential for loss introduces risk, motivating individuals to take actions that prevent undesirable outcomes. According to Kotler and Keller (Maimunah, 2019:61), loyalty is a deep commitment to the decision to repurchase a product.

According to Yim *et al.* (2008), customer loyalty stems from psychological processes and is reflected in behavior, incorporating both attitudinal and behavioral aspects. In service

marketing research, brand loyalty intention measures a customer's willingness to share positive feedback, recommend the brand, and plan future purchases. According to other literature, customer loyalty is defined as a customer's attitude toward the intention to repurchase the same product (Jones and Taylor (2007)). Consumers actively participate in community activities by seeking information, responding to questions, offering advice, and sharing experiences (Chen et al. 2018).

Consumer engagement is the key competitive factor in social commerce, directly influencing community sustainability and growth through member participation defines customer engagement as organizational interactions encompassing psychological, cognitive, emotional, and behavioral aspects (Chen et al., 2018). Then, customer engagement as the level of individual participation and the relationship between offerings and organizational operations (Vivek et al., 2012). Consumer involvement as the interest consumers have in acquiring, consuming, and providing goods, services, or concepts (Vinerean & Opreana, 2021).

Consumer involvement plays a crucial role in social commerce, directly impacting community sustainability and growth. Active participation, including information-seeking, advising, and experience-sharing, influences engagement. Customer involvement encompasses psychological, cognitive, emotional, and behavioral aspects, reflecting interest in acquiring, using, and providing goods, services, or ideas, which significantly shape community dynamics and social commerce. Research by Hussain et al. (2018) indicates that gamification has a positive and significant impact on loyalty, mediated by customer involvement. This suggests that customer engagement plays a crucial role in strengthening the relationship between gamification and loyalty.

The level of engagement depends on five key factors. First, collaboration between consumers and companies involves shared interaction and participation in product or service development through information exchange and feedback. Second, marketing strategies consist of planned actions to introduce products, strengthen brand image, and achieve a competitive advantage. Third, user experience includes all interactions and perceptions consumers have when using a product or service. Fourth, promotions implemented by companies involve various efforts such as advertising, sales promotions, and social media activities to increase awareness, interest, and purchases (Onofrei et al., 2022).

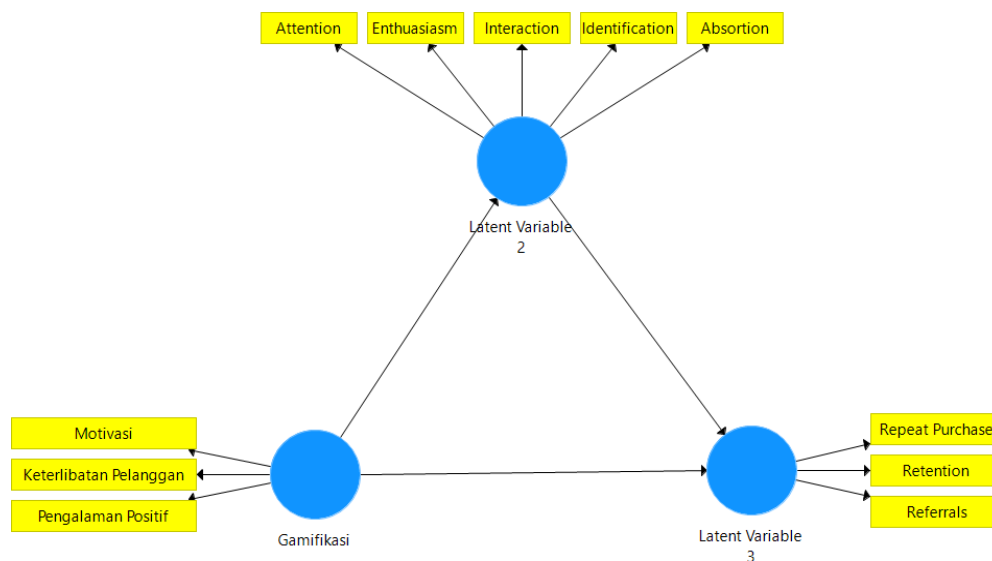
The author selected these indicators to comprehensively evaluate customer engagement, starting from initial attention, followed by emerging enthusiasm, active interaction, self-identification with the product, service, or brand, and ultimately, deep absorption. This combination of indicators provides a more complete and thorough understanding of the level of customer engagement in consuming or using a particular product, service, or brand.

### 3. METHODS

This study employs a quantitative research method, which involves investigating a specific population or sample. Sampling techniques are generally conducted randomly, data collection utilizes research instruments, and data analysis is quantitative or statistical in nature, aiming to test predetermined hypotheses. This study examines the impact of Gamification (X1) on Loyalty (Y), with Customer Involvement (Z) as a moderating or intervening variable. Using a verificative approach, it tests hypotheses to determine significant relationships between variables, providing a clearer understanding of the research object. This study adopts a quantitative approach utilizing Structural Equation Modeling (SEM) with the assistance of Partial Least Square (PLS) software for data analysis see **Figure 1**. SEM is an advanced statistical method that allows for the simultaneous examination of complex relationships between latent variables, which would be difficult to analyze using

simple linear regression. SEM integrates factor analysis to measure abstract concepts and multiple equation modeling to assess dependency relationships among variables. SEM-PLS is particularly suitable for this research as it enables the evaluation of intricate relationships while accommodating small sample sizes and handling reflective and formative measurement models effectively (Albahri *et al.*, 2021).

Descriptive analysis is used to illustrate the research objectives, focusing on findings related to Website Personality, Website Quality, Hedonic Shopping Motivation, and Online Impulse Buying while also describing respondent characteristics. This process involves classifying responses using an ordinal scale to rank answers for each indicator and variable based on questionnaire data. The total score for each variable or indicator is then calculated by summing the scores from all respondents, followed by determining the average score. Finally, the respondent answers are analyzed using descriptive statistics, such as frequency distribution, which are presented in tables or graphs using Excel software.



**Figure 1.** Research Design.

Outer model analysis in Partial Least Square (PLS) evaluates the relationship between latent variables and their indicators to assess validity and reliability. It includes four key indicators: Convergent Validity, which ensures strong correlations among indicators (outer loadings > 0.7, AVE > 0.5); Discriminant Validity, which confirms each construct is distinct (square root of AVE > inter-construct correlation); Composite Reliability, measuring internal consistency (CR > 0.7); and Cronbach's Alpha, assessing reliability ( $\alpha > 0.6$ ).

#### 4. RESULTS AND DISCUSSION

This section presents respondent feedback on the Gamification variable, which consists of three indicators: motivation, user engagement, and positive experience. To give a clearer understanding of the data for each indicator, a detailed breakdown is provided as shown in **Table 1**.

Based on the survey results presented in **Table 1**, respondents' feedback on the motivation indicator shows that the highest score comes from 53% of respondents who stated they were interested, while 30% expressed being very interested. This indicates that visitors are attracted to the attractions provided by Dusun Bambu, motivating them to visit, try the available rides, and engage in activities at the destination. This aligns with Primalia (2018),

who states that the main factor influencing visitors to a tourist destination is the availability of engaging activities that allow them to spend their time meaningfully.

**Table 1.** Respondents responses on “I feel interested in the attraction at wisata dusun bamboo”.

Response	Score	Frequency	Actual Score	Percentage (%)
Strongly Disinterested	1	1	1	1%
Disinterested	2	1	2	1%
Somewhat Interested	3	15	45	15%
Interested	4	53	212	53%
Strongly Interested	5	30	150	30%
<b>Total</b>		<b>100</b>	<b>410</b>	<b>100%</b>

Meanwhile, 15% of respondents stated they were moderately interested, indicating some hesitation regarding the attractions provided at Dusun Bambu, which may be due to individual preferences. Some visitors may be motivated to try the attractions, while others visit simply to enjoy the facilities. Sinambela (2021), as cited in NativeIndonesia.com, supports this by stating that attractions are a significant factor in tourists' plans to visit a destination, although for some, they are not the primary reason for their visit.

On the other hand, 1% of respondents stated they were not interested, and another 1% were very uninterested in the attractions. This suggests that some visitors are indifferent to the available attractions due to a mismatch between their expectations and the experience. Meanwhile, tourist attractions can positively impact visit intention, certain facilities may not significantly influence visitors, indicating that unmet expectations can reduce interest in a destination (Zhang et al., 2022).

Based on the survey results presented in **Table 2**, respondents' feedback on user engagement indicates that 46% of visitors reported being engaged, while 9% stated they were highly engaged. This suggests that visitors at Dusun Bambu actively follow the operational mechanisms of the attractions, enhancing their comfort and overall experience by adhering to established rules. Mechanisms involve the steps and procedures implemented to ensure a smooth operation, providing visitors with a structured and enjoyable experience (Elshaer & Marzouk, 2024).

Meanwhile, 31% of respondents indicated moderate engagement, reflecting varying attitudes among visitors. Some actively participate in the mechanisms of the attractions, while others show less involvement. Visitor engagement levels can differ, with some fully immersing themselves in the experience while others remain passive (Blumental & Gjerald, 2022).

Additionally, 7% of respondents reported being disengaged, and another 7% stated they were highly disengaged. This suggests that certain visitors at Dusun Bambu do not feel involved in the operational aspects of the attractions. The importance of balancing strict regulations with an enjoyable experience. Overly rigid enforcement may reduce a destination's appeal, while excessive flexibility could impact sustainability and safety (Naylor et al., 2023).

**Table 2.** Respondents responses on “I feel interested in the attraction at wisata dusun bamboo”.

Response	Score	Frequency	Actual Score	Percentage (%)
Strongly Disinterested	1	7	7	7%
Disinterested	2	7	14	7%
Somewhat Interested	3	31	93	31%
Interested	4	46	184	46%
Strongly Interested	5	9	45	9%
<b>Total</b>		<b>100</b>	<b>343</b>	<b>100%</b>

**Table 3.** Respondents responses on “I feel interested in the attraction at wisata dusun bamboo”.

Response	Score	Frequency	Actual Score	Percentage (%)
Strongly Disinterested	1	0	0	0%
Disinterested	2	2	4	2%
Somewhat Interested	3	14	42	14%
Interested	4	42	168	42%
Strongly Interested	5	42	210	42%
<b>Total</b>		<b>100</b>	<b>424</b>	<b>100%</b>

Based on the survey results presented in Table 3, respondents' feedback on the positive experience indicator shows that 42% found their visit enjoyable, while another 42% described it as very enjoyable. This indicates that visitors provided positive feedback, suggesting they thoroughly enjoyed their time at Dusun Bambu. According to [Felix and Rembulan \(2023\)](#), positive experiences enhance satisfaction, which can lead to even more fulfilling future experiences.

Meanwhile, 14% of respondents reported that their experience was moderately enjoyable. This reflects varying perceptions among visitors—some felt their experience was sufficiently pleasant, while others believed it could have been better. Creating truly exceptional experiences offers opportunities to enhance services and facilities, ensuring more visitors have highly enjoyable and memorable moments.

On the other hand, 2% of respondents found their visit very unpleasant. This suggests that some visitors left Dusun Bambu feeling unsatisfied. According to [Mitra \(2024\)](#), disappointment arises when expectations do not align with reality, leading to dissatisfaction.

**Table 4** presents the percentage calculation of the total score for the Gamification variable, which is 84.5%, placing it in the "highly experienced" category. This indicates that Gamification in Dusun Bambu Tourism is perceived as an engaging experience, particularly in terms of motivation. It sparks curiosity and provides visitors with new experiences when trying out various attractions, making them more interested in participating. Before enjoying their chosen attractions, visitors must follow the safety procedures established by the staff to minimize unwanted incidents. This adherence to safety protocols contributes to a new experience in visitor security, enhancing their overall enjoyment and satisfaction.

A noticeable difference was observed between the initial survey and the final questionnaire results. Initially, a statement under the positive experience indicator indicated that respondents were satisfied with the enjoyable experience of riding the attractions at Dusun Bambu. However, in the initial survey, most respondents answered "no," suggesting

dissatisfaction and a lack of enjoyable experiences. This phenomenon became the basis of this study. Meanwhile, in the final questionnaire, the response shifted to "highly experienced," indicating a positive perception of the experience.

This change can be attributed to differences in the rating scales used. The initial survey utilized the scale: "Highly Inexperienced, Inexperienced, Moderately Experienced, Experienced, and Highly Experienced." Additionally, variations in the number of respondents influenced the final results. The researcher also refined and added statements in each indicator, allowing respondents to better evaluate their experiences. An initial survey helps identify needs and issues, followed by brainstorming to address real-world challenges (Bender-Salazar, 2023).

Specifically, in the positive experience indicator, the initial survey highlighted visitor dissatisfaction and less enjoyable experiences. However, field observations revealed that visitors rated their experiences as excellent, feeling highly satisfied and gaining positive memories when experiencing Dusun Bambu's attractions. According to Bender-Salazar, (2023), creating truly exceptional experiences presents opportunities to enhance services and facilities, ensuring more visitors have enjoyable and unforgettable experiences.

**Table 4.** Recapitulation of Respondents responses on gamification.

NO	Indicator	Item	Actual Score	Ideal Score	%	Criteria
1	Motivation	1	410	500	82	Experience
2	User Engagement	1	343	500	68,60	Experience
3	Positive experiercer	1	424	500	84,90	Very Experience
<b>Total</b>		<b>3</b>	<b>1177</b>	<b>1500</b>	<b>84,5</b>	Very Experience

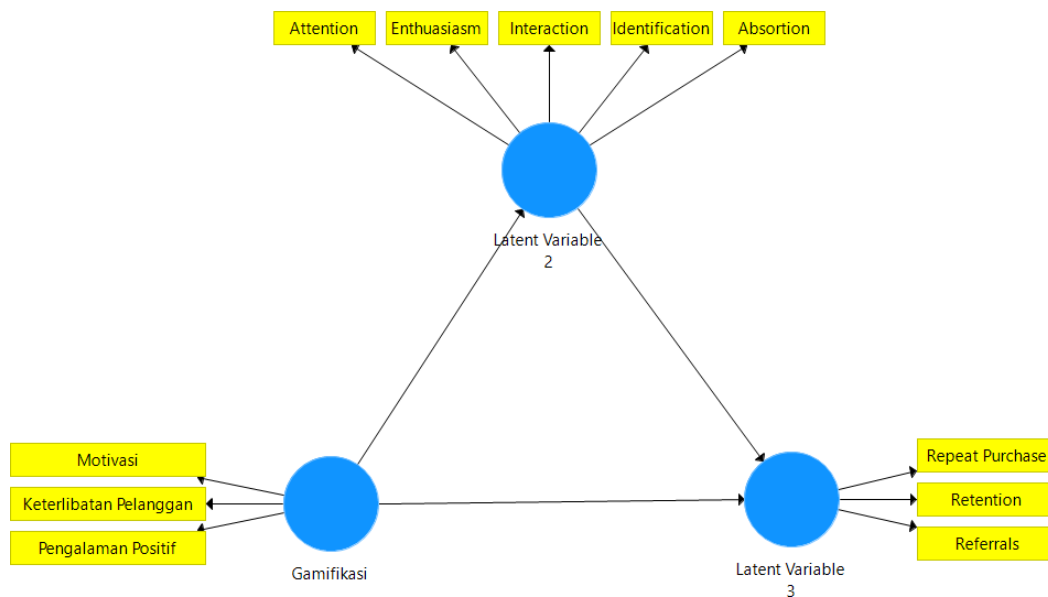
The survey results in **Table 5** show that 36% of respondents stated they were certain, and 28% were very certain about revisiting Dusun Bambu, indicating their satisfaction with the facilities and experiences provided. This aligns with Damanik and Yusuf (2022), who stated that visitor satisfaction increases the likelihood of repeat visits. Additionally, 29% of respondents were somewhat certain, suggesting that other factors influence their decision, as explained by Chaturvedi et al. (2024), who noted that satisfaction can impact revisit intentions. Meanwhile, 7% of respondents were uncertain about returning, reflecting dissatisfaction with their experience, which is consistent with Dipta & Cantika (2020), who argued that dissatisfaction arises from unpleasant experiences.

Based on **Table 5**, each statement item in the indicators of all variables has an Outer Loadings value  $>0.7$ . However, two indicators do not meet this requirement but still exceed 0.5, making them acceptable. This confirms that all indicators are valid and suitable for further analysis. The Outer loading values in the Convergent Validity test can also be observed in **Figure 2**, where arrows from each variable point to the statement indicators. Additionally, construct validity can be assessed using the Average Variance Extracted (AVE), which must be  $>0.5$  for a good model. A higher AVE value indicates a stronger ability of the latent variable to represent the actual data scores.

**Table 5.** Recapitulation of Respondents responses on gamification.

Response	Score	Frequency	Actual Score	Percentage (%)
Strongly Uncertain	1	0	0	0%
Uncertain	2	7	14	7%
Moderately certain	3	29	87	29%
certain	4	36	144	36%

Strongly certain	5	28	140	28%
<b>Total</b>		<b>100</b>	<b>385</b>	<b>100%</b>



**Figure 2.** Convergent validity (Outer Loading)

## 5. CONCLUSION

The study reveals that Gamification at Dusun Bambu enhances visitor engagement, with positive experiences being the most appreciated aspect, while customer involvement remains a challenge due to unclear attraction guidelines. Visitor loyalty is strong, particularly regarding recommendations, though retention is lower due to initial negative perceptions. Immersive experiences, such as scenic beauty and interactive activities, contribute to engagement, though some visitors experience unmet expectations. Gamification directly boosts customer involvement, strengthening loyalty by fostering emotional connections with the destination. The findings highlight that Gamification does not directly impact loyalty but does so through customer involvement, emphasizing its role as a key strategy to enhance visitor satisfaction, encourage repeat visits, and generate stronger word-of-mouth recommendations.

To enhance visitor engagement at Dusun Bambu, it is recommended that guidance on attraction mechanisms be improved by providing accessible digital and physical manuals, along with well-trained staff to assist visitors. In terms of loyalty, focusing on service quality, actively monitoring online reviews, and showcasing unique experiences can strengthen visitor retention. For customer involvement, maintaining a consistent and captivating theme with immersive visual and audio elements, as well as creating visually appealing photo spots, can enhance visitor identification with the destination. Additionally, since customer involvement has a stronger impact on loyalty than gamification, implementing a reward-based program where visitors earn points for participation and purchases can encourage repeat visits and deeper engagement with Dusun Bambu.

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