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Linking online experience and marketing factors to user loyalty in mobile legends

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Abstract

This study examines the influence of E-Security, Perceived Enjoyment, Online Customer Review, and Social Media Marketing on user loyalty, mediated by satisfaction and trust, among Mobile Legends: Bang Bang users in Samarinda. A quantitative approach was employed using a sample of 135 respondents, analyzed with IBM SPSS 23 and Structural Equation Modeling (SEM) through AMOS 23. Measurement was based on a five-point Likert scale, with validity and reliability tests conducted prior to model estimation and structural fit assessment. The findings indicate that E-Security, Perceived Enjoyment, Online Customer Review, and Social Media Marketing significantly affect Satisfaction. Additionally, E-Security, Perceived Enjoyment, and social media Marketing significantly influence Trust. Online Customer Review has a significant positive effect on Loyalty but shows a negative insignificant relationship with Trust. Meanwhile, E-Security, Perceived Enjoyment, and Social Media Marketing do not significantly affect Loyalty. These results highlight the mediating role of Satisfaction and Trust in shaping user loyalty.

Keywords

E-Security, Online customer review, Perceived enjoyment, Social media marketing, Mobile Legends

Introduction

The rapid advancement of digital technology has transformed the global entertainment industry, particularly through the rise of mobile gaming. Over the past decade, mobile games have become one of the most lucrative segments of the digital economy, driven by increasing smartphone penetration and accessible internet connectivity. In Southeast Asia, one of the most widely played titles is Mobile Legends: Bang Bang (MLBB), a multiplayer online battle arena (MOBA) game with a highly active and loyal user base. In 2023, global mobile gaming revenue surpassed USD 184 billion, while Indonesia contributed approximately USD 1.47 billion with more than 100 million active players, positioning the country among the largest gaming markets in the region [1]. As the user base expands, competition among game developers has intensified, compelling them to focus on strategies that strengthen user engagement and long-term loyalty.

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In mobile gaming, user loyalty is understood as a multidimensional behavioural outcome influenced by psychological, technological, and social factors. Prior studies highlight that loyalty is shaped not only by functional performance but also by emotional attachment and perceived value in digital interactions. One important determinant is electronic security (e-security), which reflects users' perceptions of safety and privacy when engaging with online platforms. When users believe their personal data and digital assets are well-protected, their trust and continuous usage tend to increase. Perceived enjoyment defined as the intrinsic pleasure derived from gaming also plays a central role in shaping user experience and long-term commitment. In addition, online customer reviews (OCR) have emerged as a powerful form of electronic word-of-mouth (e-WOM), influencing user perceptions of credibility, satisfaction, and decision-making. Furthermore, social media marketing (SMM) enables developers to build brand communities, strengthen interactions, and foster attachment through real-time communication.

Despite the popularity of MLBB, sustaining user loyalty remains a challenge, as many players shift between platforms offering similar gaming experiences. This behaviour suggests that existing studies may not fully capture how digital and psychological factors interact in shaping trust, satisfaction, and loyalty. While previous research has examined e-security, enjoyment, or online reviews individually, few have explored their integrated influence within the mobile gaming ecosystem. Most prior works also focus on e-commerce or general mobile applications, leaving a notable gap in understanding experiential digital products such as mobile gameswhere immersion, community bonding, and emotional engagement are more pronounced.

To address these gaps, this study proposes an integrated model that combines digital marketing variables and psychological mechanisms to explain user loyalty. Specifically, it investigates how e-security, perceived enjoyment, online customer reviews, and social media marketing affect user loyalty both directly and indirectly through the mediating roles of trust and satisfaction. Grounded in the Technology Acceptance Model (TAM), Expectation Confirmation Theory (ECT), and Commitment Trust Theory, this model positions trust and satisfaction as central cognitive–affective processes that translate user perceptions into behavioural commitment.

The novelty of this research lies in its application of loyalty formation theory within the context of mobile gaming a rapidly expanding yet underexplored field in digital consumer behaviour. Unlike studies focusing on online shopping or social media platforms, this research is situated within a gaming environment characterized by high interactivity, social identity formation, and emotional immersion. Moreover, the study provides region-specific insights by focusing on MLBB users in Samarinda City, Indonesia, an emerging digital market with high youth participation and intensive social media usage. This localised focus contributes to a more nuanced understanding of digital behaviour in non-metropolitan settings.

The main objective of this study is to analyse the influence of e-security, perceived enjoyment, online customer reviews, and social media marketing on user loyalty, mediated by satisfaction and trust. By empirically testing this integrated model, the study seeks to identify the most influential factors in cultivating user loyalty and clarify the mediating roles of trust and satisfaction. The findings are expected to offer theoretical contributions to the literature on digital marketing and consumer psychology, as well as practical implications for mobile game developers and platform managers in enhancing retention strategies.

The urgency of this study is grounded in the growing economic and social significance of mobile gaming within Indonesia's digital ecosystem. Understanding how users develop trust and satisfaction in interactive digital environments is essential for designing sustainable engagement strategies. Ultimately, this study contributes to broader discussions on how integrated digital experiences encourage long-term loyalty in the increasingly competitive mobile gaming industry.

E-security refers to the perceived protection of personal data, financial information, and digital identity in an online environment [2]. In mobile applications, users' trust and continued engagement depend heavily on their perception of platform security. When users believe that the system safeguards their information from unauthorized access or fraud, they are more likely to form positive attitudes toward the platform. Conversely, concerns over privacy breaches and data misuse can significantly reduce users' confidence and intention to remain loyal [3]. In mobile gaming, where players frequently link accounts, purchase virtual items, and store personal data, perceived e-security becomes a central factor shaping trust. Perceived enjoyment is defined as the degree to which using a digital system is perceived to be enjoyable, apart from any performance outcomes [4] [5]. It represents an intrinsic motivational factor that drives user engagement and satisfaction. In mobile gaming contexts, enjoyment arises from interactivity, challenge, and social connection, which enhance emotional engagement and continuous use intention [6]. Previous studies have confirmed that perceived enjoyment strongly predicts user satisfaction, which in turn influences loyalty [7]. The more pleasurable and immersive the gaming experience, the higher the likelihood that users will form affective bonds with the platform and demonstrate long-term commitment.

Online customer reviews, often considered a form of electronic word-of-mouth (e-WOM), provide valuable cues for evaluating a product or service in digital environments. OCRs influence user trust by offering social proof and reducing uncertainty [8]. In the context of mobile gaming, peer reviews and community discussions play a critical role in shaping perceptions of credibility, fairness, and system reliability. Users who perceive reviews as authentic and informative are more likely to develop trust toward the game and its developer. Positive peer feedback can also reinforce satisfaction by validating users' own experiences. Social media marketing refers to the strategic use of social platforms to communicate, promote, and interact with users. For gaming brands like

MLBB, social media channels function not only as promotional tools but also as spaces for community building and co-creation. Engaging content, influencer collaborations, and interactive campaigns strengthen users' sense of belonging and trust in the brand. Furthermore, consistent and value-driven social media interactions foster loyalty by maintaining user engagement beyond the gaming platform itself [9]. When users perceive that a brand actively interacts with its community, they are more likely to develop both cognitive and emotional trust. Trust and satisfaction have been widely recognized as mediating constructs that bridge user perceptions and behavioral outcomes [10]. Trust reflects a user's confidence in the reliability and integrity of the service provider, while satisfaction represents the user's overall affective response to their experience. Empirical studies in e-commerce and mobile applications suggest that satisfaction strengthens the effect of enjoyment and online reviews on loyalty [11]. Whereas trust mediates the impact of e-security and social media marketing on behavioral intention [12].

Drawing on the above literature, the conceptual framework Figure 1 integrates both direct and indirect pathways linking digital experience variables to loyalty. E-security, perceived enjoyment, online customer review, and social media marketing serve as independent variables influencing satisfaction and trust, which in turn determine loyalty toward the Mobile Legends: Bang Bang application.

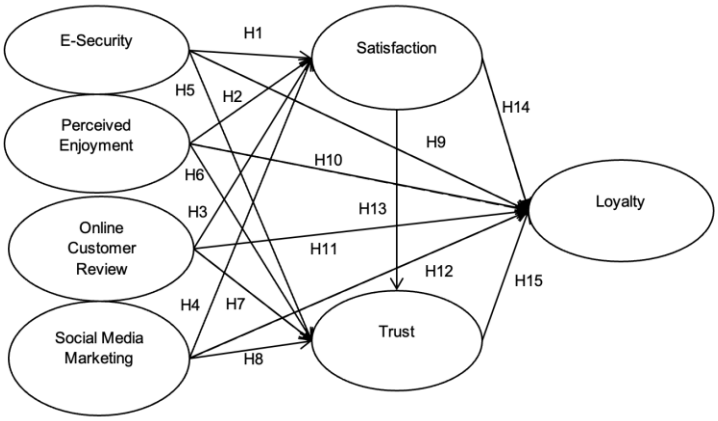

Figure 1. Conceptual framework

Method

The method used in this research is the survey method by interviewing random respondents who happen to be met. This is done so that the interview process can be directed, so the questionnaire guide is held by the researcher. This is a way to provide convenience in the interview process which does not provide a burden to respondents psychologically, it is considered burdensome for respondents when filling out the questionnaire. If respondents feel burdened, it will affect the quality of the data.

This study employed a quantitative, explanatory, and cross-sectional research design aimed at examining the influence of e-security, perceived enjoyment, online customer review, and social media marketing on loyalty through satisfaction and trust

among MLBB users in Samarinda City, Indonesia. The explanatory nature of the study allows for testing causal relationships among latent variables derived from established theoretical frameworks, including the Technology Acceptance Model (TAM) [13], Commitment-Trust Theory of Relationship Marketing [14] and Expectation-Confirmation Theory (ECT) [15]. A partial least squares structural equation modelling (PLS-SEM) approach was chosen due to its suitability for predictive modelling and complex path analysis involving multiple mediating constructs.

The data in this study were obtained using observation or observation techniques, questionnaires and direct interviews with respondents, the data were then analyzed and interpreted through several statistical tests. This was done to draw a research conclusion on the causal correlation of the observed research variables. The data collection technique in this study was to distribute a list of questions in the form of statements using a paper leaflet questionnaire then, distribute the list of questions in the form of an online questionnaire using the services available on Google, namely Google Form.

In this study using 27 indicators and using a multiplier number of 5, so that the number of samples for this study. The number of variables in this study were 7 variables consisting of 4 exogenous variables, 2 intervening variables, and 1 endogenous variable with 27 indicators. Referring to the calculation of the minimum number of samples, the sample in this study was 135 samples. The sampling technique used in this study was Accidental Sampling technique

Results and discussion

Results

1. Measurement model assessment

Because the measurement items in this study were adapted from previously validated instruments, a separate pilot test was not required. Instead, the evaluation of the measurement model was conducted directly using the full sample (n = 135) to provide stronger and more reliable evidence of construct validity and reliability. The results of the outer model assessment indicate that all indicators achieved standardized loading values above the recommended threshold of 0.70, demonstrating adequate indicator reliability. Furthermore, all constructs fulfilled the criteria for internal consistency, with Cronbach's Alpha and Composite Reliability (CR) values exceeding 0.70. Convergent validity was also confirmed, as the Average Variance Extracted (AVE) for each construct was greater than 0.50. These findings collectively confirm that the measurement items are valid and reliable, allowing the structural model to be tested with confidence.

2. Characteristic of responden

The characteristics of respondents will be explained in detail in the Table 1.

Table 1. Responden characteristic

Category		Frequency	Percentage
Gender	Male	113	83.7%
Age	21-25	91	67.4%
Education	Senior High School	100	74.1%
Occupation	Student/Collage	109	80.7%
Monthly Income	< Rp. 3.500.000	125	92.6%
Time average played	1-2 hours per day	44	32.6%
Play with	friends	106	78.5%

Source: Data processed by researcher, 2025

Table 2 presents the respondents' characteristics (n = 135), showing that the sample is predominantly male (83.7%), aged 21–25 years (67.4%), and mostly students with low monthly income (92.6%). Most respondents play 1–2 hours per day and primarily with friends. These findings illustrate that the primary users of Mobile Legends: Bang Bang in Samarinda are young male students with limited income who play the game moderately as a form of social entertainment. This demographic profile supports the relevance of examining factors such as e-security, perceived enjoyment, online customer reviews, and social media marketing in influencing user trust, satisfaction, and loyalty, as these aspects align closely with the behavioural characteristics of this user group.

Discussion

1. Hypothesis Testing

The results of the hypotheses have the aim of knowing whether a hypotheses that has been made in this study can be proven or not, therefore the data that has been collected in accordance with the number of samples that have been determined is then carried out statistical tests with the help of statistical analysis tools, namely AMOS 23 software. In this study there are 15 hypotheses, the results of the hypotheses test there are 10 hypotheses can be said to be significant, because they have values that are in accordance with the t-table requirements, which are above 1.96, thus the hypotheses can be declared acceptable or significant. Meanwhile, there are 5 hypotheses declared insignificant, because they do not meet the t-table requirement, which has a value of less than 1.96, so the hypotheses cannot be accepted or insignificant. The results of the hypotheses test can be seen in Table 2 and Figure 1.

Tabel 2. Hypothesis testing results

Hypotheses	Variable Relationship	Coefficient Path Stand.	C.R.	Probability Value	Description
H1	X1 - Y1	0.233	2.018	0.044	Significant
H2	X2 - Y1	0.857	4.398	0.000	Significant
H3	X3 -Y1	0.219	3.178	0.001	Significant
H4	X4 - Y1	0.306	1.984	0.047	Significant
H5	X1 - Y2	0.545	4.289	0.000	Significant
H6	X2 - Y2	0.842	2.645	0.008	Significant
H7	X3 - Y2	-0.015	-.182	0.856	Negative Not Significant
H8	X4 - Y2	0.382	2.621	0.009	Significant
H9	X1 - Y3	0.004	.021	0.983	NotSignificant

H10	X2 - Y3	-0.209	-.690	0.490	Negative Not Significant
H11	X3 - Y3	0.280	3.231	0.001	Significant
H12	X4 - Y3	0.226	1.409	0.159	Not Significant
H13	Y1 - Y2	0.319	2.253	0.024	Significant
H14	Y1 - Y3	0.143	1.016	0.310	Not Significant
H15	Y2 - Y3	0.493	2.264	0.024	Significant

Source: Data processed by researcher, 2025

The results of this study demonstrate that e-security, perceived enjoyment, online customer review, and social media marketing significantly influence satisfaction among users. Among these factors, perceived enjoyment has the strongest impact, indicating that users' emotional experience and enjoyment are central in determining their satisfaction with the application. This finding aligns with previous studies that highlight the importance of hedonic value and playfulness in shaping positive user experiences in mobile applications. Meanwhile, e-security and social media marketing also play significant roles, suggesting that trust in data protection and interactive marketing content contribute to user satisfaction.

In terms of trust, the results show that e-security, perceived enjoyment, and social media marketing have significant positive effects, while online customer review does not. This suggests that user trust is built more on personal experience and system reliability than on the opinions of other users. The strong influence of e-security underscores that users' confidence in transaction safety and privacy protection is a critical determinant of trust. Furthermore, social media marketing enhances trust by strengthening user-brand engagement and transparency through interactive content.

Regarding loyalty, only online customer review demonstrates a significant positive effect, while other direct relationships (e-security, perceived enjoyment, and social media marketing) are not significant. This indicates that loyalty in the context of mobile gaming applications is heavily influenced by social proof and peer recommendations rather than by individual user experiences alone. Additionally, satisfaction significantly influences trust, and trust significantly influences loyalty, confirming the mediating role of trust in the model. The absence of a direct relationship between satisfaction and loyalty suggests that while users may be satisfied with the service, loyalty emerges primarily when satisfaction translates into a deeper sense of trust.

Overall, these findings emphasize that trust serves as the key bridge between user experience and long-term loyalty. Developers and marketers should therefore focus on maintaining system security, enhancing user enjoyment, and fostering interactive communication to build trust and sustain loyalty among application users.

2. Direct effect

A direct relationship occurs between the variable SE-Security (X1), Perceived Enjoyment (X2), Online Customer Review (X3), and variable Product Variety (X4). An explanation of the direct relationship can be seen in the Table 3:

Table 3. Direct effect results

No.	Direct Relationship	Coefficient Correlation
1	E-Security - Loyalty	0.004
2	Perceived Enjoyment - Loyalty	-0.209
3	Online Customer Review - Loyalty	0.280
4	Social Media Marketing - Loyalty	0.226
	TOTAL	0.301

Source: Data processed by researcher, 2025

The analysis shows that the total correlation between the independent variables and loyalty among Mobile Legends: Bang Bang users in Samarinda is 0.301, indicating a moderate relationship. Among all variables, online customer review (r = 0.280) has the strongest positive correlation, suggesting that players' loyalty is largely influenced by the opinions, experiences, and recommendations of other users. This shows that Mobile Legends players tend to rely on peer feedback before deciding to continue playing or supporting the game. social media marketing (r = 0.226) also has a positive relationship, meaning that interactive campaigns and engaging social content by the game's developer help maintain user interest and community involvement.

On the other hand, e-security (r = 0.004) shows a very weak relationship with loyalty, indicating that while users expect the game to be secure, it is not a main factor affecting their continued engagement. Perceived Enjoyment (r = –0.209) even shows a negative relationship, implying that players who play mainly for fun may not develop strong loyalty, as their *motivation* is based more on short-term entertainment rather than long-term attachment. Overall, these results indicate that for Mobile Legends: Bang Bang players in Samarinda, social interaction and peer influence (through reviews and social media) play a greater role in fostering loyalty than technical or experiential factors. Therefore, developers and marketers should focus on strengthening community engagement and user interaction to sustain player loyalty.

3. Total effect results

In this study, there is a total influence between the relationship between E-Security (X1), Perceived Enjoyment (X2), Online Customer Review (X3), and Social Media Marketing (X4) on Loyalty (Y3) through Satisfaction (Y1) and Trust (Y2). The results of the total effect can be seen in the Table 4:

Table 4. Total effect results

No.	Variable Indirect Relationship	Coefficient Correlation
1	Direct Effect	0.301
2	Indirect Effect	1.352
	Total Effect	1.653

Source: Data processed by researcher, 2025

The analysis shows that the direct effect of the independent variables on loyalty is 0.301, while the indirect effect through satisfaction and trust is 1.352, resulting in a total effect of 1.653. This indicates that the indirect influence is much stronger, meaning users' loyalty is shaped more by their satisfaction and trust than by direct experiences or marketing efforts. In the context of Mobile Legends: Bang

Bang users in Samarinda City, this suggests that players become loyal not only because of game features or promotions, but because they feel satisfied with the gameplay and trust the platform's security, fairness, and community environment. Therefore, maintaining high satisfaction and building strong trust are essential strategies for sustaining long-term player loyalty.

Conclusion

The findings of this study reveal that the development of user loyalty toward mobile gaming applications is primarily driven by indirect effects mediated through satisfaction and trust. While the direct influence of E-Security, Perceived Enjoyment, Online Customer Review, and Social Media Marketing on loyalty is relatively modest, their indirect impact through these mediators is substantially stronger, indicating that users' emotional and psychological responses play a critical role in sustaining engagement. Specifically, satisfaction and trust serve as essential mechanisms that transform positive user perceptions into long-term loyalty.

In the context of Mobile Legends: Bang Bang users in Samarinda City, the results highlight that players' loyalty is not solely shaped by gameplay enjoyment or promotional activities but rather by their overall satisfaction and confidence in the platform's reliability, fairness, and community interaction. These findings suggest that developers and marketers should focus on enhancing user satisfaction through consistent service quality and strengthening trust by ensuring system security, transparent communication, and community integrity. By prioritizing these relational factors, the application can foster sustainable user loyalty and maintain its competitive position in the rapidly evolving mobile gaming market.

Although this study provides valuable insights, it is not without limitations. The research was limited to Mobile Legends: Bang Bang users in Samarinda City, which may restrict the generalizability of the findings to other regions or gaming contexts. Future studies could expand the geographical scope or compare multiple mobile gaming applications to obtain broader perspectives. Additionally, this study employed a quantitative cross-sectional design; thus, future research could adopt a longitudinal or mixed-method approach to better understand the dynamic process of trust and loyalty formation over time. It is also recommended to include additional variables such as game quality, user engagement, or community belongingness to provide a more comprehensive understanding of loyalty determinants in digital gaming environments.

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