

Analysis of the Influence of. Ewom Gamification and Augmented Reality on Consumer. Loyalty on the Bukalapak Application in Indonesia

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ABSTRACT

This research investigates how electronic word of mouth (E-WOM), gamification elements, and augmented reality features impact user loyalty within the Bukalapak application in Indonesia. A total of 115 individuals participated in this study, selected through purposive sampling technique under non probability sampling method. Data analysis was conducted multiple linear regression, all statistical procedures performed SPSS Statistics version 30. The validity of all research indicators was confirmed through statistical testing. Furthermore, the classical assumption tests indicated that the dataset followed a normal distribution and showed no signs of multicollinearity. Ultimately, the analysis demonstrated that each of the three independent variables E-WOM, gamification, and augmented reality exerts a positive effect on consumer loyalty.

Keywords: Consumer Loyalty, E-Wom, Gamification, Augmented Reality

1. INTRODUCTION

In recent years, Indonesia e-commerce sector has experienced significant growth. Data from Internet Service Providers Association indicates a steady annual increase in internet penetration, rising from 64.8% in 2022 to an estimated 79.5% by 2024. This upward trend in internet access aligns with projections showing that the number of e-commerce users across the country is expected to keep rising from 2024 through 2027.

Table 1. E-commerce user projections

No	Year	Value
1	2022	178,94
2	2023	196,47
3	2024	208,55
4	2025	221,05
5	2026	233,55
6	2027	244,67

Source: <https://goodstats.id>

If you look at this data, e-commerce users in 2022 are 178.94 million users, until 2025, the number e-commerce users currently in Indonesia is around 221.05 million users and is predicted to continue to increase, until 2027. As one of the well-known e-commerce platforms, Bukalapak takes advantage of this condition to further develop its services and expand its network of use, but of course in Indonesia e-commerce is not only Bukalapak, with other competitors such as Tokopedia, Shopee, and Lazada, and very tight competition between each competitor, Bukalapak faces quite tough challenges, one of which is in terms of maintaining customer loyalty. According to data in October 2024, Bukalapak is in 5th position with an average number of visits of 3,500,000 million visits.

Table 2. Number of visitors to Indonesia E-commerce (October 2024)

No	E-Commerce Name	Value
1	Shopee	128.600.000
2	Tokopedia	73.400.000
3	Lazada	38.100.000

No	E-Commerce Name	Value
4	Blibli	22.700.000
5	Bukalapak	3.500.000

Source: <https://databoks>

The noticeable decline in user visits presents a significant challenge for Bukalapak, as it may reflect a weakening in consumer loyalty essential factor for the long term succes of any e-commerce platform. This study aims to examine how electronic word of mouth (e-WOM), gamification features, and augmented reality contribute to consumer loyalty within the Bukalapak platform in Indonesia. Given the increasingly competitive e-commerce landscape, understanding how interactive technologies can be leveraged to retain users is crucial. Enhancing consumer loyalty not only supports sustained engagement but also plays vital role in ensuring platform's future growth. In light of these considerations, the researcher is motivated to explore the impact of e-WOM, gamification, and augmented reality on user loyalty in Bukalapak, with the study titled: "An Analysis of the Influence of E-WOM, Gamification, and Augmented Reality on Consumer Loyalty on the Bukalapak Platform in Indonesia".

2. HIPOTHESIS FORMULATIONI

2.1. *Influence e-WOM on Consumer Loyalty*

Elektronik Word of Mouth (e-WOM) refers to informal, technology-enabled communication in which consumers share their experiences regarding a product or service (Prayogo & Kusumawardhani, 2016, as cited in Utama & Giantari, 2020). In essence, e-WOM involves individuals conveying opinions, reviews, or feedback about goods or services they have used—typically via digital platforms. (Cheung & Thadani, 2012), in their study "The Impact of Electronic Word-of-Mouth Communication: A Literature Analysis and Integrative Model," emphasize the significant role e-WOM plays in influencing consumer behavior. Their findings suggest that user-generated content and peer recommendations hold more persuasive power than traditional marketing messages, especially in online settings. Positive electronic reviews can enhance consumer trust and have been shown to encourage not only purchase intention but also long-term loyalty to brands. These insights support the assumption that e-WOM contributes meaningfully to the development of consumer loyalty. Based the literature review, the following hypothesis is proposed:

H1: (e-WOM) has a positive and significant effect on consumer loyalty.

2.2 *The Influence of Gamification on Consumer Loyalty*

Gamification is integration of game design elements into non-gaming contexts to enhance user engagement (Deterding et al., 2011, as cited in Wood & Reiners, 2014). Essentially, gamification leverages game mechanics to incentivize and motivate users to engage in desired behaviors. According to Werbach and Hunter 2012, as cited in (da Paixão & Dias E Cordeiro, 2021), gamification is employed to enhance user interaction and satisfaction by incorporating systems typical of games. A study by (Hamari et al., 2014) "Does Gamification Work? A Literature Review of Empirical Studies on Gamification" explores the use of gamification across various sectors, including digital platforms, with a focus on increasing user participation and motivation. The research concludes that the effective application of gamification elements, such as point systems, challenges, and rewards, can significantly influence consumer behavior. Properly designed gamification strategies have been found to not only boost user interaction but also foster long-term engagement with the platform. These results suggest that gamification can be a key factor in driving consumer loyalty. From these insights, the folowing hypothesis is proposed for this study:

H2: Gamification has positive and significant effect on consumer loyalty.

2.3 *The Influence of Augmented Reality on Consumer Loyalty*

Augmented Reality (AR) is technology that blends the physical and virtual worlds, enabling users to view computer-generated virtual elements integrated into their real-world environment through digital devices. Azuma (1997) in(Wirayudi Aditama et al., 2019) defines AR as technology that enhances real world with virtual objects, providing an immersive experience that merges the physical and digital realms. In context of ecommerce, (Lovendra, n.d.) notes that AR can significantly enhance consumer engagement by allowing users to virtually try products before making a purchase. This immersive service is believed to improve the overall customer experience, influence buying decisions, and foster brand loyalty. A study by (Nur Addin et al., 2024) titled "Analysis of the Use of Augmented Reality at Ikea," explores the impact of AR in the retail industry, demonstrating that AR technology enhances the interaction between

consumers and products by delivering a more realistic and enriched shopping experience. It also helps reduce consumer uncertainty, leading to increased satisfaction and confidence in their purchasing choices. These findings underscore the potential of AR to boost consumer loyalty on e-commerce platforms by offering interactive and engaging product visualizations. Based on the evidence presented, the following hypothesis is proposed for this study:

H3: Augmented Reality has a positive and significant effect on consumer loyalty.”

3. RESEARCH METHODS

This study employs a quantitative research approach with associative method. According to (Rahmadi 2011, as cited in (Ayu, n.d.), quantitative research involves the use of numerical data to obtain information about the research subject. In contrast, associative research seeks to identify relationships between two or more variables. The goal of this approach is to develop useful theories that can explain, predict, and control various phenomena (Ahmad et al., 2019). Target population this research consists of Indonesian individuals aged 18 and above who have made purchases on the Bukalapak platform. The sample size is determined according to the guidelines set by Hair et al. 2010, as cited in Kaewsaeng-on et al., 2022), which recommend calculating the minimum sample size using the formula: (Number indicators + Number variables) $\times$ (5 to 10 times). Given that the study examines 17 indicators and 4 variables, the minimum sample size is calculated as $(17 + 4) \times 5 = 105$. However, the researcher collected data from 115 respondents and chose to include all responses to enhance the reliability and accuracy of the research findings. Thus, the final sample size for this study is 115 respondents. Data were gathered via online questionnaires distributed through social media platforms, including WhatsApp and Instagram.

4. RESULTS AND DISCUSSION

4.1 Multiple Linear Regression Analysis

Table 3 Multiple linear regression test

Type	Unstandardized coefficients		standardized coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	4,329	3,121		1,387	,168
E-wom(X1)	,290	,092	,260	3,136	,002
Gamification (X2)	,388	,080	,421	4,849	<,001
AR(X3)	,168	,080	,169	2,093	,039

a. Dependen Variabel: Consumer Loyalty

Based the results of SPSS processing, linear equations obtained are as follows:

$$Y = 4.329 + 0.290X_1 + 0.388X_2 + 0.168X_3$$

The constant value of 4.329 indicates that when all independent variables, namely E-WOM (X1), Gamification (X2), and Augmented Reality (X3), are set to zero, value of the dependent variabel, Consumer Loyalty (Y), will be 4.329. The regression coefficient for E-WOM (X1) is 0.290. This suggests that for every 1% increase in E-WOM, consumer loyalty on Bukalapak is expected to rise by 0.290, assuming other independent variables remain unchanged. Positive value of this coefficient indicates a direct, positive relationship between E-WOM and consumer loyalty. For the Gamification variable (X2), the regression coefficient is 0.388. This means that a 1% increase in Gamification is anticipated to lead to a 0.388 increase in consumer loyalty on Bukalapak, provided other variables are constant. The positive coefficient suggests a positive correlation between Gamification and consumer loyalty. The regression coefficient for Augmented Reality (X3) is 0.168. This implies that a 1% increase in Augmented Reality usage would contribute to a 0.168 rise in consumer loyalty, assuming the other factors do not change. The positive sign indicates a one-directional, positive relationship between Augmented Reality and consumer loyalty.

4.2 F Test

Table 4. Test results F

Type	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	1823,277	3	607,759	39,920	<.001b
Residual	1689,905	111	15,224		
Total	3513,183	114			
a. Dependent Variable: Consumer Loyalty					
b. Predictor: (Constan), AugmentedReality, E-wom, Gamification					

Based the table above, it can observed that the calculated F-value (Fcal) of 39.920 is greater than the critical F-value (F table) of 2.69. Additionally, significance value (sig) is 0.001, which is less than the threshold of 0.05. Therefore, it can be concluded that the three independent variables E-WOM (X1), Gamification (X2), and Augmented Reality (X3) have a statistically significant effect on consumer loyalty (Y) when considered together

4.3 R2 Determination Coefficient Test

Table 5. R2 determination test results

Type	R	R Square	Adjusted Squarei	RStd. Error of the Estimate
1	,720 _a	,519	,506	3,902
a. Predictors: (Constant), AugmentedReality, E-wom, Gamification				

“On the table above, calculated F-value (Fcal) of 39.920 exceeds the critical F-value (F table) of 2.69. Additionally, the significant value (sig) 0.001, which is smaller than the 0.05 threshold. Therefore, it can be concluded that the three independent variables E-WOM (X1), Gamification (X2), and Augmented Reality (X3) have a statistically significant effect on consumer loyalty (Y) when assessed together.”

4.4 Hypothesis test t

Table 6. Results of the t test

Type		Unstandardize Coefficient		Standardize Coefficient t		Sig.
		B	Std. Error	Beta		
1	(Constant)	4,329	3,121		1,387	,168
	E-wom(X1)	,290	,092	,260	3,136	,002
	Gamification (X2)	,388	,080	,421	4,849	<,001
	AR(X3)	,168	,080	,169	2,093	,039
a. Dependen Variabel: Consumer Loyalty						

iBased the results obtained in tablei above, it can be concluded as follows:

H1: Influence of E-WOM Variables on Consumer Loyalty

The t-value for E-WOM (3.136) is greater than the critical t-value (1.98157). The significance value (0.002) is smaller than 0.05, so the hypothesis (H0) is rejected, and H1 accepted. This suggests that E-WOM has a positive influence on consumer loyalty.

H2: Influence of Gamification Variables on Consumer Loyalty

The t-value for Gamification (4.849) greater than the critical t-value (1.98157). The significance value (0.001) is also smaller than 0.05, leading rejection of the hypothesis (H0) and accepted of H1. This indicates that gamification has positive influence on consumer loyalty.

H3: Influence of Augmented Reality Variables on Consumer Loyalty

The t-value for Augmented Reality (2.093) is greater than the critical t-value (1.98157). The significance value (0.039) less than 0.05, leading to the rejection of H0 and acceptance of H1. Thus, augmented reality also has a positive influence on consumer loyalty.

5. DISCUSSION

5.1 The Influence of e-WOM on Consumer Loyalty on Bukalapak Applications in Indonesia

The statistical test on the E-WOM (X1) variable shows that the calculated t-value is greater than the t-table value, with a significance value below 0.05. The multiple linear regression analysis reveals that E-WOM contributes to a 29% increase in consumer loyalty. This suggests that the more positive reviews and recommendations shared by consumers, the more likely they are to remain loyal to the Bukalapak app. Finding aligns with study by (Rizkyta & Farida, 2024), which showed that E-WOM positively influenced consumer loyalty through satisfaction as an intervening variable. Therefore, it can be concluded that E-WOM positively impacts consumer loyalty on Bukalapak in Indonesia.

5.2 The Effect of Gamification on Consumer Loyalty on Bukalapak Applications in Indonesia

The statistical test on the Gamification (X2) variable also shows that the calculated t-value exceeds the t-table value, with a significant value smaller than 0.05. The regression analysis indicates that gamification increases consumer loyalty by 38.8%. This demonstrates that game element, such as levels, badges, rewards, points, and leaderboards, play a significant role in enhancing consumer loyalty to the platform. This is consistent with the study by (Soetandio et al., n.d.), which found that gamification significantly On Online Impulsive Buying. Thus, it can be concluded that gamification positively affects consumer loyalty on the Bukalapak platform.

5.3 The Influence of Augmented Reality on Consumer Loyalty on the Bukalapak Application in Indonesia

For the Augmented Reality (X3) variable, the statistical test show the calculated t-value is greater than the t-table, with significance value less than 0.05. The regression analysis confirms that AR contributes to a 16.8% increase in consumer loyalty. This demonstrates that technological features like AR can enhance consumer loyalty to the platform. These findings are in line with (Olanda et al., 2025), who studied the influence of AR on marketing performance and found a positive impact. Therefore, it can be concluded that AR positively influences consumer loyalty on the Bukalapak app in Indonesia.”

6. CONCLUSION

This study to examine impact (E-WOM), Gamification, and Augmented Reality on Consumer Loyalty in the Bukalapak Application in Indonesia. The research involved a sample of 115 participants, all of whom were Indonesian citizens aged 18 and above, had the Bukalapak app installed, and had made purchases through it. The findings suggest that E-WOM, Gamification, and Augmented Reality all have a positive effect on consumer loyalty in the Bukalapak Application in Indonesia. Results this study are expected to serve as a valuable reference or inspiration for e-commerce platforms in Indonesia, particularly Bukalapak, to enhance consumer comfort and satisfaction by fostering positive services such as beneficial reviews (E-WOM), incorporating elements that strengthen consumer engagement through gamification, and implementing technologies like Augmented Reality to offer a superior shopping experience. Furthermore, it is hoped that future research on this topic will explore additional aspects, such as the influence of Sustainability Awareness, Chatbot Effectiveness, Personalized Push Notifications, and other factors, to gain a deeper understanding of the various elements that influence Consumer Loyalty.

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