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Unlocking Adoption: Revealing Gamification's Influence on Indonesian Consumer Intentions in E-Commerce.

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Abstract

The rapid expansion of e-commerce in Indonesia and the integration of gamification features to enhance user engagement. Gamification is a strategy used in various industries, including e-commerce, to influence user behavior and foster interaction between consumers and products. The study aims to investigate the influence of social motives on attitudes towards e-commerce applications in the context of gamification. The main objective is to fill a gap in the existing literature by examining the relationship between gamification features and user engagement in e-commerce platforms, specifically in terms of long-term desire to use the platform and participate in word-of-mouth communication. The study employed a quantitative survey questionnaire and collected data from Indonesian consumers using the snowball sampling method. The data was analyzed using partial least squares structural equation modeling (PLS-SEM), and the results indicated that network exposure significantly influences social influence, recognition, and reciprocal benefit. The study found that gamification features, such as rewards, challenges, points, and enjoyment, can enhance user engagement in e-commerce platforms.

Keywords: Gamification, Network Exposure, Attitude, E-Commerce.

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INTRODUCTION

Everything has become simpler and more effective as a result of technological improvements and developments. Using an e-commerce platform to make purchases online is one of the advantages that technology has brought forth. Indonesia stands out among Southeast Asian nations as experiencing the most rapid expansion in e-commerce growth and revenues. According to a recent survey by DataReportal 62,6% of Indonesian internet users have purchased a product or service online in 2022, a 3.3% increase from the previous year (Investment, 2023). This indicates a significant and growing segment of the population embracing e-commerce practices. As digital literacy and access to technology continue to improve across Indonesia, the number of online shoppers is projected to further expand. This trend highlights the evolving consumer experience in the country, with a growing preference for the convenience and accessibility offered by online platforms for purchasing goods and services. To maintain such growth, customer experience becomes an essential factor in modern retailing (Rose et al., 2011).

In pursuit of this objective, marketers have integrated gamification components into e-commerce platforms to maintain customer engagement (Xu et al., 2022). As gamification has a considerable influence on consumer decisions, e-commerce apps are increasingly gamified nowadays (Tobon et al., 2020). Gamification has found application in numerous sectors, such as education, sports, human resources and online marketing, showcasing its versatility across various industries (Tien Minh et al., 2023). Gamification is the use of game dynamics to process programs and platforms in non-traditional ways (Kusumawardani et al., 2023). Over the years, it has been intensely used to cater to customers' needs, deal with attitude changes, and serve as an inspirational draw (Deterding et al., 2011).

Gamification's primary purpose is to influence the behaviour of its users by providing service design and offering a game-like experience (Huotari & Hamari, 2012). The worldwide gamification market doubled its value to $11.94 billion in 2021 and will reach $32 billion by 2025 (Ciuchita et al., 2023; Tsou & Putra, 2023a). Gamification is often seen as an enticing approach to product or brand promotion due to its capacity to foster interaction between the consumer and the product (Sitthipon et al., 2022). Hence, given the enormous potential of technology and online shopping, traditional retailers adapt their sales strategies to sell online (Bhat et al., 2021; Miao et al., 2022).

In essence, gamification is implemented to satisfy users and motivate them so that they would become fixated with the e-commerce platform (Kusumawardani et al., 2023; Yudhoatmojo & Ramadana, 2016). Gamification can also be understood as an elaborate

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mixture between aspects of services and gaming and has been extensively used in marketing to ensure continued use of the platform (Kusumawardani et al., 2023). In the realm of e-commerce, gamification is frequently employed to incentivize customers to make repeat purchases and to cultivate long-term loyalty to the platform (Aparicio et al., 2021). Through the incorporation of game-like elements, including interactive features, reward systems, and challenges, e-commerce platforms seek to cultivate a profound connection between the customer and the brand, while also stimulating repeat purchases (Sitthipon et al., 2022).

Shopee was one of the first online marketplaces in Indonesia that introduced gamification to engage and retain customers (Kusumawardani et al., 2023) The marketplace offered users the opportunity to exchange their points for gift rewards redeemable for merchandise (Tsou & Putra, 2023). On top of motivating users of a marketplace to repurchase products on the platform, gamification also contributes to users' word-of-mouth (L. Wang et al., 2018) Additionally, consumer sentiments towards gamification are linked to repurchase intentions and word-of-mouth marketing (Hsu et al., 2017), which is a thorough assessment that might result in purchase support and behavior.

Despite the widely acknowledged usefulness of gamification in e-commerce contexts, there is a significant gap in comprehending the complex interplay between the social rewards provided by gamification and the underlying buying motivations that impact consumer behavior. This knowledge gap emphasizes the need for additional academic research into how social features inherent in gamified experiences interact with and influence consumers's motivations to engage in retail activities. Against this background, the current study makes a contribution to the existing body of work on gamification by investigating both extrinsic and intrinsic encouragement (Kusumawardani et al., 2023) Nevertheless, there has been a notable lack of extensive research on the integration of shopping motivation, which is inextricably tied to attitudes and customer behavior, within the framework of gamification in e-commerce environments (Sumarliah et al., 2022)

The main objective of this study is to investigate the influence of social and buying motives on attitudes toward e-commerce applications in the setting of gamification. This study will fill a gap in the existing literature and provide valuable insights into the relatively unexplored topic of user involvement and views towards and perceptions of the platform. This study enhances understanding of the impact of gamification on consumer behavior in e-commerce platforms, specifically in terms of the long-term desire to use the platform and participate in word-of-mouth communication. This component is crucial because prior

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research has shown that gamification can improve consumer loyalty and facilitate word-of-mouth promotion (Kim et al., 2020). Hence, the results of this study will empower e-commerce platforms to enhance their applications and enhance their efforts to engage users.

LITERATURE REVIEW

Gamification

The concept of gaming has been subject to diverse interpretations. It started with relatively generic statements such as the integration of game mechanisms (Hamari, 2013) Subsequently, it changed to become a service design that aims to give users gaming-like experiences in order to affect their behavior (Hamari & Koivisto, 2015) In addition, it broadened the scope of gamification by, rather than confining it just to services, mixing game design ideas into non-game product or services in order to influence the behavior of users in the direction of desired action (Veit & Webster, 2015). Gamification can be used and integrated into various non-game platforms, such as websites, online communities, business services and even marketing campaigns (Hsu et al., 2017b). Applying game features to non-gaming environments, or "gamification," can produce interesting and stimulating experiences that entice customers to engage more fully with the goods or services being provided. Customers are more likely to feel favourably about a company when they are actively involved, which increases brand loyalty and encourages positive word of mouth (Hsu & Chen, 2018). Due to its capacity to produce captivating and inspiring experiences that inspire customers to engage more deeply with goods or services, gamification is an effective strategy for changing specific consumer behavior.

The previous studies employed gamification in various themes: food delivery applications (Mai et al., 2024), learning in organizations (Kaoud & ElBolok, 2023; Luarn et al., 2023; Pardim et al., 2023), healthcare applications (Al-Rayes et al., 2022; Damaševičius et al., 2023), competitive advantage (Friedrich et al., 2020; Gimenez-Fernandez et al., 2021) and e-commerce (Aparicio et al., 2021). Research on gamification in e-commerce within the Southeast Asian Region is limited, as most previous studies have mostly been in China and researched repurchased intention (Zhang & Zhou, 2021). Prior research has not been done in-depth on the gamification influence on social motivation or the immersion of shopping motivation (i.e., hedonic and utilitarian). Gamification has been demonstrated in the past to improve consumer experience and

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raise engagement, but its precise effects on social and shopping motivation are still unclear.

Network Exposure

In the context of gamification, network exposure refers to a user's visibility to one another as well as the number of followers they have within a gaming system (Hamari & Koivisto, 2015). It is linked to the group inside the system and can impact the quantity of social activity the individual engages in. Many users who engage in gamification are critical for attaining any desired behavioral effect, and network exposure can influence people by using a gamification application when other people follow their activities (Kusumawardani et al., 2023). Hamari & Koivisto (2015) argued that network exposure that includes social interaction could result in socially valuable content, further influencing attitudes about the system and its use. Network exposure may also be described as the degree to which users are visible to one another, as well as the number of followers (Kusumawardani et al., 2023; Nivedhitha & Manzoor, 2020).

Gamification often relies on social interaction and network effects to create engaging and motivating experiences for users. Gamification apps can have an impact on people's behaviour, especially when others observe their activity (Lin & Bhattacherjee, 2008) Accordingly, the social influence motivation that are connected with online behavior are related to the networks exposure (Kwon et al., 2014). Gamification networks, particularly e-commerce platforms, can increase engagement by displaying who has the most followers badges, and highest ratings (Kusumawardani et al., 2023). Similarly, the more users a person comes into contact with, the more recognition and reciprocal benefit he or she is likely to get. As a result, network exposure is also partially mediated by social influence in the form of acknowledgement and additional reciprocal benefit (Hamari, 2013; Hamari & Koivisto, 2015; Huotari & Hamari, 2012) Based on the explanation above, this research proposed the following hypothesis:

H1 : Increased network exposure enhances social influence
H2 : Increased network exposure enhances recognition
H3 : Increased network exposure enhances the reciprocal benefit

Social Influence

Social influence is the term used to describe how other people's expectations and opinions affect a person's behavior and decision-making process (Ajzen, 1991). It

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involves the impression of how those who are significant to the individual see the desired behavior and whether they expect the individual to practice it. In gamification, social influence typically pertains to the user's interpretation of how their actions are perceived by other users within the context of utilizing the service. This perception is often shaped by various indicators, such as receiving likes and comments from peers, which serve as tangible manifestations of approval or validation. By observing the responses of their peers, users can gain insight into the effectiveness of their actions in meeting the perceived expectations of the community (Hamari & Koivisto, 2015). Perceptions of social influence have a favorable effect on how people perceive recognition. The more strongly one believes that others expect and approve of particular actions, the more noticeable the effect (Hamari & Koivisto, 2015) Based on the explanation above, this research proposed the following hypothesis:

H4 : Increased social influence enhances recognition

Additionally, in situations when people receive reinforcement and approval from their social networks for maintaining appropriate behavior, the effect of social influence on their propensity to adopt a technological breakthrough becomes noticeably favorable. This phenomenon not only develops a positive attitude toward the adoption of innovation, but it also serves as an important intermediary component in determining (Alfany et al., 2019) Social influence significantly impacts attitudes in gamified marketing (Yang et al., 2017) Based on the explanation above, this research proposed the following hypothesis:

H5 : Increased social influence enhances the attitude

Recognition

Three major components of the social dimension are reciprocal benefit, network exposure, recognition, and social influence (Koivisto & Hamari, 2014). Collectively, these elements shape people's social experiences and interactions in a variety of circumstances, impacting their perceptions, decisions, and behaviors (Alfany et al., 2019) Recognition refers to the social feedback individuals receive for their behavior The social community's acceptance leads to recognition, which may encourage e person to conform with society's expectations in terms of interactions with others (Cheung et al., 2011). explored the gamification mechanism in knowledge-sharing motivation and explained that recognition could be in the form of feedback, rewards, and status. The gamification process in knowledge-sharing motivation and acknowledgment might come in the form of feedback, rewards, and status ratings (Friedrich et al., 2020).

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Feedback can be employed for maximizing the peer effects of social motivations by creating opportunities for mutual acknowledgment, which can manifest as badges, place ranking, or a rating system (Kusumawardani et al., 2023) The most often used reward type in gamification is badges, which may communicate a sense of expertise and acknowledgment for underlying performance, making them a social motivation (Shepperd, 2001). A respectable status can be achieved once an individual has a collection of points, badges, ranking positions, and specific roles that they have, which demonstrate their competence and gain a reputation within their social group (Friedrich et al., 2020; Kusumawardani et al., 2023). Recognition as an extrinsic motivator yields numerous favorable consequences, such as increased satisfaction within the framework or structure (Hamari & Koivisto, 2015). Based on the explanation above, this research proposed the following hypothesis:

H6 : Increased recognition enhances the reciprocal benefit

Besides, recognition has also been linked to positive attitudes towards the service (Hamari, 2013; Hamari & Koivisto, 2015). Moreover, when an individual receives recognition, he or she will have a desire to recognize others reciprocally within a service, which increases social interaction even more (Hamari, 2013; Kusumawardani et al., 2023). Based on the explanation above, this research proposed the following hypothesis:

H7 : Increased recognition enhances the attitude

Reciprocal Benefit

Reciprocity, which entails receiving and contributing in a manner that the community values, is critical for rewarding users to engage in gamified behaviors (Kusumawardani et al., 2023). Reciprocal benefits included how often people trust them to gain benefits by sharing information (Silic et al., 2020). When considering the fairness of social exchange, individuals are more inclined to share their experiences if they perceive that they will benefit from their actions in return. (Hamari, 2013). This exchange of sharing and receiving is driven by the expectation of mutual advantage, where individuals engage in reciprocity to maximize their gains within the social framework (Koivisto & Hamari, 2014). Past research showed that the reciprocal benefit is a strong predictor of attitude (Hamari & Koivisto, 2015). Reciprocal benefits influence attitude by accentuating it, and the attitude effect on behavior should be increased (Kusumawardani

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et al., 2023; Liska et al., 1984). Based on the explanation above, this research proposed the following hypothesis:

H8 : Increased reciprocal benefit enhances the attitude

Attitude

In the gamification context, an attitude refers to the overall assessment of the system's performance, whether favorable or unfavorable (Ajzen, 1991). Gamification is likely to impact people's attitudes and behavior because of the rewards system in the gamification process, such as points, badges, and levels (Shepperd, 2001). A previous study stated that when gamification is implemented for marketing purposes, customers will be more engaged and have a positive attitude toward the brands (Yang et al., 2017). The delight and entertainment gained from participating in gamification processes are widely regarded as important influences on attitudes toward these systems. Furthermore, the perceived usefulness of gamification and its potential to exert social influence help to promote a positive attitude toward the system (Kusumawardani et al., 2023). Gamification's combination of enjoyment, utility, and social impact helps to shape consumers's opinions towards it positively (Yang et al., 2017).

Numerous research has established a substantial correlation between attitude and intention to use (Hamari, 2013; Hamari & Koivisto, 2015) Consumers' attitudes and the likelihood of purchase affect spreading the word-of-mouth (Yüksel & Durmaz, 2016). The gamification mechanism on the website has been used as the fundamental approach to improve the attitude and affect the continued use and intention to spread word of mouth (Hsu et al., 2017b) Specifically, when individuals see the outcomes of their actions to be beneficial, they will consider the behavior to be favorable. To summarize, an e-commerce platform may adopt a specific attitude, which ultimately leads to a particular behavior, such as a continued intention to use the platform and the propagation of positive word-of-mouth. Based on the explanation above, this research proposed the following hypothesis:

H9 : A positive attitude will enhance continued intention

H10 : A positive attitude will enhance the spreading of word of mouth

Behavioural Intention (Continued to Use Intention and Spreading word of mouth)

When people are motivated and have a positive attitude or positive emotion toward something, then it will lead to behavioral intention (Casaló et al., 2021;

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Kusumawardani et al., 2023; Kusumawardani & Putri, 2020). Continued use intention is heavily affected by many factors, such as quality of operation, quality of information, quality of the system (Gao et al., 2015; Ramayah et al., 2010; Song et al., 2023) as well as ease of use and usefulness of the system (Flavián et al., 2022; Lee et al., 2019). According to the expectation-confirmation model theory, a customer's level of satisfaction with a product or service influences their willingness to continue using it (Thong et al., 2006).

On the other side, word of mouth substantially influences the purchasing decision (Keaveney, 1995). According to research, people regard word-of-mouth communication as a means of satisfying their emotional requirements (Consiglio et al., 2018). Word-of-mouth creates cognitive impacts by increasing customer awareness of a business or product (East et al., 2017). Word-of-mouth may have a significant impact on society, making it an important aspect in business (Kim & Son, 2009). Ultimately, once the desired behaviour has been accomplished, both individuals will persist in their goal and engage in positive word-of-mouth, resulting in the projected growth and sustainability of the firm. This study suggests that the implementation of gamification in the e-commerce application will result in positive user behavior towards the platform.

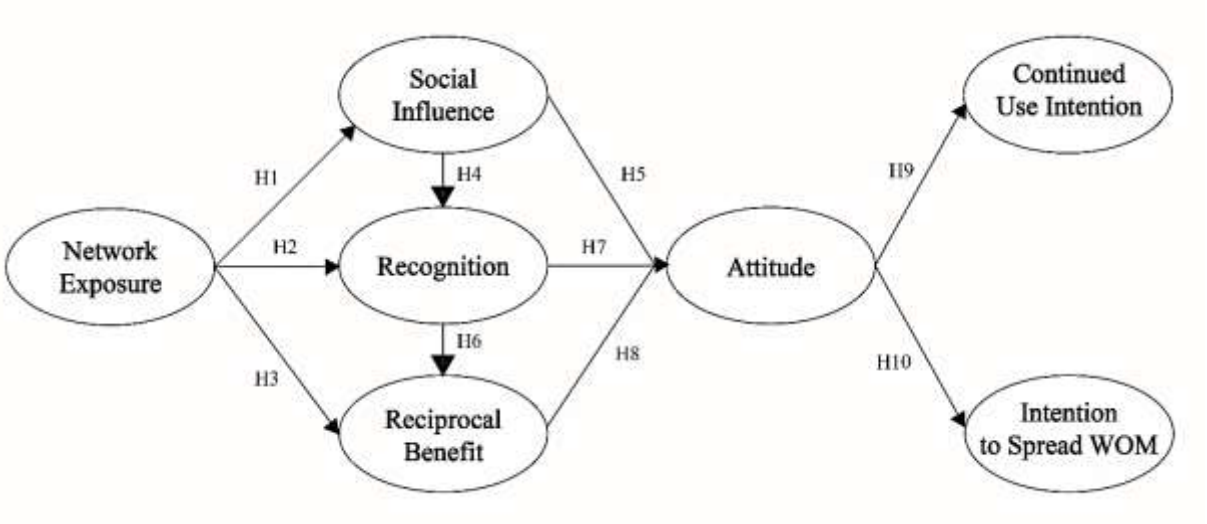


Figure 1. Research Framework

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RESEARCH METHODOLOGY

Research Design, Measurement and Scaling

This study investigates any potential relationships between the recommended parameters using adequate and relevant data. The present study has collected cross-sectional data (Qing et al., 2023). through a structured questionnaire. This study employs a quantitative survey questionnaire to examine the previously listed hypotheses. When testing the potential connection between the specified variables and constructs, a questionnaire survey is an effective research strategy representing the participants' perceptions (Salkind, 2021). Each construct used to measure things in this study was mostly derived from previous research. Some measures were slightly modified to better suit the specific context of gamification in the e-commerce platform.

Each latent construct was measured using an assortment of indicators in this investigation. This research employed the Likert scale to quantify the magnitude of the respondent's reaction (1 for strongly disagree and 4 for strongly agree). The measuring items are mostly designed by Hamari and Koivisto (2013) for social motivations, including network exposure, social influence, recognition, and reciprocal benefit. For the dependent variables (attitude, continued use intention, and intention to spread word of mouth), the item measurements were taken (Koivisto & Hamari (2014).

Sample and Data Collection

Shopee Games is Indonesia's most popular gamification feature, and Shopee is popular on mobile apps (Kusumawardani et al., 2023). This feature allows customers to earn points, cash, and gift rewards by playing various Shopee Games (Tsou & Putra, 2023). This feature offers players games with plenty of prizes and manageable game levels, making it the first of its sort in Indonesia. The effectiveness of Indonesia's gamification strategy can be ascertained by looking at the popularity of the Shopee Games within the Shopee Indonesia application (Kusumawardani et al., 2023). Gamification aspects are employed to ascertain the characteristics that contribute to customer engagement with the features of Shopee Games and to evaluate the effectiveness of gamification. The majority of Shopee games incorporate a minimum of four gamification features, namely rewards, challenges, points, and enjoyment.

Data collection utilized the snowball sampling method (SSM) because the sample coverage covered all regions in Indonesia, so the researcher anticipated difficulty in creating a representative sample of the research population (Cohen & Arieli, 2011; M.-Y.

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Wang et al., 2023). SSM is the most effective method to access hidden and hard-to-reach populations (Petersen & Valdez, 2005; Raifman et al., 2022; Satyam et al., 2022). SSM is a sampling technique in which existing study subjects recruit future subjects from among their acquaintances (Cheng et al., 2022; Leighton et al., 2021; Satyam et al., 2022). This method selects a person for the research subject, and others are reached through this person (Biernacki & Waldorf, 1981; Leighton et al., 2021).

We distributed the online survey link to Indonesian consumers using academic private networks and social media platforms including WhatsApp, Facebook, Instagram, Twitter, and Telegram. The data were collected using Google Forms and a variety of social media platforms and instant messaging services to disseminate the questionnaire. This study employs an online questionnaire due to its efficiency and cost reduction. We urged them to participate and share the link with others. A total of 410 samples were gathered during December 2023 – February 2024. A negative response to the question "Do you use Shopee and play Shopee games?" discarded 26 samples and left 384 for analysis. Table 1 displays the demographics of respondents.

This analysis also incorporates secondary data from previous studies, publications, and websites to supplement the findings. After gathering the data, it is assessed and analyzed using partial least squares structural equation modeling (PLS-SEM) and the statistical technique in this work, with SmartPLS serving as the statistical tool.

Multicollinearity Test

According to Kock, (2015) common method bias in PLS-SEM is caused by the measurement methods used (i.e. Likert-type scales) and can be identified by looking at the multicollinearity test (Henseler et al., 2015). For the structural model's independent constructs, the multicollinearity test is used to determine whether there are strong relationships between them (inner model) (Podsakoff et al., 2003). This test identifies possible concerns if there is a significant correlation between an external variable's dimension and the endogenous variable. The multicollinearity test in PLS-SEM can be examined through the variance inflation factor (VIF), and the value must be less than 10, which is the level of concern for collinearity (Hair et al., 2019).

Data Analysis and Technique Tool

The data for this study was entered and organized using Excel 2010. SPSS software was used to provide a demographic overview for the participants. This

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assessment used PLS-SEM software to assess both the measurement and structural model (Qing et al., 2023).The data for this study were analyzed using PLS-SEM. PLS-SEM was chosen for a variety of reasons. PLS-SEM is particularly useful for extremely complicated prediction models with non-normal data, formative measured constructs, and small sample sizes (Hair et al., 2017; Kusumawardani et al., 2023). This makes it preferable to co-variance-based SEM. Predictions are based on an analysis of numerous factors. As a result, the use of PLS-SEM with Smart-PLS is warranted in this study because of the predictive value it provides. In addition, Smart-PLS was chosen over AMOS because it can return results from both a sophisticated measurement and a structural model at once. Moreover, it can estimate path models using latent variables. PLS-SEM can include information from each level of an attribute to show the characters as a full image in the overall model (Hair et al., 2017).

ANALYSIS AND RESULT

Demographic Profile

The demographic information of the respondents is shown in Table 1. It shows that a total of 384 respondents, 59,89 % were female and 40,10% were male. A total of 47,91% were aged 18-25, 32.29% were students. those between the ages of 18 and 25 indicating that Indonesia's more young citizens are keen to use more about e-commerce. 68,48% were under graduates, 48.7% had used Shopee for 2-3 years and 44,79% had used Shopee for 4-5 times per week.

Table 1. Demographics Information and Respondent (N=384)

Variables	Categories	Frequency (N)	%
Gender	Male	154	40,10
	Female	230	59,89
Age	<18	15	3,90
	18-25	184	47,91
	26-30	117	30,46
	31-40	48	12,5
	41-50	20	5,20
Ocuppation	Students	124	32,29

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	Business Employee	115	29,94
	Government Staff	54	14,06
	Self-Employed	29	7,55
	Professional	47	12,23
	Other	62	16,14
Education	High School Graduates	25	6,51
	Junior School Graduate	12	3,125
	Undergraduate	263	68,48
	Postgraduates	50	13,02
	PhD/Doctoral	34	8,85
Using Experience	< 1 years	6	1,56
	1-2 years	187	48,7
	2-3 years	165	42,96
	>3 years	26	6,7
Using Frequency	<1 time per week	94	24,47
	2-3 times per week	114	29,68
	4-5 times per week	172	44,79
	>6 times per week	4	1,04

Measurement Model

The measurement model was initially evaluated in this study by applying confirmatory factor analysis (CFA) to assess the latent constructs' reliability and validity. Reliability was determined by composite reliability (CR) and Cronbach's alpha scores (Qing et al., 2023). In Table 2, all values of Cronbach's alpha as well as CR are above

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the threshold point of 0.7, indicating sufficient reflective constructs' reliability for the research (Hair, Hult, Ringle, Sartsted, et al., 2021; Qing et al., 2023). Furthermore, ''convergent validity'' was established based on ''factor loadings'' and average variance extracted, in short, AVE scores. If the factor loading values show below 0.7 and AVE scores greater than 0.6 provide evidence regarding a construct's convergent validity (Hair et al., 2021; Qing et al., 2023).

Table 2. Measurement and Items

Construct	Item Codes	Item Loading	Cronbach's Alpha	CR	AVE
Network Exposure (Hamari & Koivisto, 2013)			**0,926**	**0,941**	**0,722**
My friends admire me as I progress to a higher level on the gamified shopping app.		0.819			
On the gamified e-commerce application, I have numerous friends who track my engagements closely.		0.826			
Lots of folks keep tabs on my actions on the gamified e-commerce platform.		0.818			
I'm following numerous individuals on the gamified e-commerce platform.		0.765			
I've got a bunch of buddies on the gamified e-commerce app.		0.776			
Social Influence (Hamari & Koivisto, 2013)			**0.850**	**0.898**	**0.808**
If my friends find winning in the gamified e-commerce application enjoyable, then I will participate as well.		0.853			
My friends would consider the idea of using a gamified e-		0.899			

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commerce application to be favorable.				
Individuals whom I value would motivate me to utilize gamified e-commerce applications.	0.818			
Those who impact my perspectives would suggest gamified e-commerce applications.	0.765			
People who hold significance in my life would have a favorable opinion of me utilizing gamified e-commerce applications.	0.923			
Recognition (Hamari & Koivisto, 2013)		**0.924**	**0.956**	**0,907**
I experience satisfaction when my accomplishments within the gamified e-commerce application are acknowledged.	0.949			
I enjoy it when fellow users of the gamified e-commerce application comment on and like my accomplishments.	0.877			
I appreciate it when my peers on the gamified e-commerce application take note of my exercise reports.	0.843			
Reciprocal Benefit (Hamari & Koivisto, 2013)		**0.927**	**0.949**	**0.823**
I find that being part of the gamified e-commerce	0.916			

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application community can benefit everyone involved.				
I believe that my involvement in the gamified e-commerce application community can be beneficial for both myself and others.	0.825			
I believe that engaging in the gamified e-commerce application community boosts my motivation to work out.	0.856			
The community within the gamified e-commerce application motivates me to engage in exercise.	0.851			
I believe that my involvement in the gamified e-commerce application community can benefit both myself and others.	0.843			
Attitude (Hamari & Koivisto, 2013)		**0,934**	**0.958**	**0.769**
I think using the gamified e-commerce application is a great idea	0.866			
I consider using the gamified e-commerce application to be advantageous.	0.827			
I believe that using the gamified e-commerce application is a wise decision.	0.840			
I find using the gamified e-commerce application to be a beneficial experience.	0.861			

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I believe using the gamified e-commerce application is a smart choice.	0.885			
Continue To Use Intention (Koivisto & Hamari, 2014)		**0.945**	**0.956**	**0.833**
I think it's a great idea to use the gamified e-commerce application.	0.892			
I consider using the gamified e-commerce application to be advantageous.	0.908			
I consider using the gamified e-commerce application to be a smart choice.	0.911			
I find using the gamified e-commerce application to be a beneficial experience.	0.856			
I consider using the gamified e-commerce application to be a prudent decision.	0.872			
Intention To WOM (Hamari & Koivisto, 2013)		0.918	0.932	0.781
I would suggest the gamified e-commerce app to my friends.	0.866			
I would suggest the gamified e-commerce app to my family	0.912			
I would suggest the gamified e-commerce app to anyone who seeks my advice	0.876			
I will direct my acquaintances to the gamified e-commerce application.	0.810			

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I will speak positively about the gamified e-commerce application to others.	0.832			

All factor loadings of this research represent the associations between items and constructs, were greater than the intention level of 0.7 and AVE, which represents the degree of variance in the items, explained by latent constructs, values were above the suggested level of 0.6, proves adequate convergent validity score recommended by (Hair, Hult, Ringle, Sartsted, et al., 2021; Qing et al., 2023). Next, the researchers assessed Cronbach's a and composite reliability (CR) of the constructs. CR is the ratio of a scale's estimated actual score variance to its total variance, whereas AVE is a measure of the latent variable component score's reliability (Tsou & Putra, 2023). These results were more than the acceptable CR score of 0.7 (Fornell & Larcker, 1981) Table 2 shows that both indices exceed 0.7 requirement for all construct, demonstrating acceptable internal consistency and dependability.

Table 3. Discriminant Validity (Fornell-Lecker Criterion)

Variables	ATT	CUI	IW	NE	RB	REC	SI
Attitude	**0.876**						
Continued to Use Intention	0.782	0.905					
Intention to WOM	0.765	0.828	0.865				
Network Exposure	0.653	0.709	0.728	0.848			
Reciprocal Benefit	0.561	0.633	0.655	0.712	0.907		
Recognition	0.790	0.723	0.620	0.730	0.765	0.952	
Social Influence	0.652	0.712	0.751	0.711	0.734	0.722	0.918
Notes: The diagonal elements) in bold are the square root of the AVE. Values below the diagonal elements are the inter-construct correlation (Fornell-Lecker Criterion)							

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Subsequently, discriminant validity, which implies how much one construct is distinct from another construct, was assessed based on Fornell-Larcker criterion and HTMT (heterotrait-monotrait) ratio of correlation (Qing et al., 2023). The Fornell-Larcker Criterion (Fornell & Larcker, 1981) criterion on Table 3 is used to analyse the discriminant validity by examining the square roots of AVE, which were all greater than correlations with other components The square root of AVE, shown by the diagonal numbers, was larger than the off-diagonal elements in the respective rows and columns, indicating that the study possessed acceptable discriminant validity (Hair et al., 2017; Kusumawardani et al., 2023).

Table 4. Discriminant Validity Heterotroit-Monotrait (HTMT) ratio.

Variables	ATT	CUI	IWOM	NE	RB	REC	SI
Attitude							
Continued to Use Intention	0.134						
Intention to WOM	0.147	0.180					
Network Exposure	0.348	0.273	0.368				
Reciprocal Benefit	0.092	0.159	0.275	0.334			
Recognition	0.181	0.326	0.310	0.361	0.548		
Social Influence	0.422	0.448	0.480	0.622	0.463	0.572	

Moreover, all the HTMT values should be below 0.85 to establish discriminant validity (Henseler et al., 2015). Table 4, shows that all components have HTMT values below 0.85, indicating discriminant validity in this research.

Structured Model

The researchers utilized Partial Least Squares Structural Equation Modelling (PLS-SEM) to quantify the “structural model” and evaluate the hypothesized relationships. The criteria for structural model assessment (inner model) found by using SEM-PLS are (1) R-square for dependent construct and (2) bootstrapping procedure (t-value >1.96 and

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significant level 5 5%) to find out the significant value (Hamid et al., 2024). The structural model or inner model is evaluated by looking at the percentage of variance described by looking at the value of R Square and the value of Q^2 for the dependent latent construct.

Firstly, the existing model's explanatory power was assessed using R^2 values. In this study, R^2 measures a predictor's power to explain the outcome construct (Hair et al., 2017). According to Hair et al. (2017), R Square's rule of thumb value categories is 0.75 which is categorized as vital, 0.50 is classified as moderate and 0.25 is categorized as weak. The rule of thumb value for Q2 > 0 indicates that the model has predictive relevance, and the rule of thumb value for Q2 < 0 indicates that the model has less predictive relevance (Hair, Hult, Ringle, Sarstedt, et al., 2021; Hamid et al., 2024).

Table 5. Coefficients of Determined (R^2)

	R – Square	Adjusted R – Square
Continued Use Intention (CUI)	0.588	0.560
Intention to Spread Positive WOM (IW)	0.423	0.393
Social Influence (S1)	0.735	0.616
Recognition (RE)	0.784	0.640
Reciprocal Benefit	0.720	0.637
Attitude (ATT)	0.654	0.502

From the analysis (Table 5), it is found that the R Square value for the continued use intention construct is 0.588 and the intention to spread positive WOM construct is 0.423, which means that the variability of continued use intention and intention to spread positive WOM, which can be explained by the variables of attitude in the model amounts to 58.8% and 42.3% and they are included in the moderate model category. Furthermore, the R Square value for the social influence construct is 0.735, the recognition construct is 0.784 and the reciprocal benefit construct is 0.720, which means that the variability of social influence, recognition, and reciprocal benefit, which can be explained by the variables of network exposure in the model amounts to 73.5%, 78.4%, and 72% and they are included in the vital model category. It is found that the R Square value for the attitude construct is 0.654 which means that the variability of attitude, which can be explained by

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the variables of social influence, reciprocal benefit, and recognition in the model amounts to 65.4% and it is included in the moderate model category.

Table 6. Predictive Relevance (Q^2)

	Q2 Predict	RSME	MAE
Continued Use Intention (CUI)	0.253	0.863	0.645
Intention to Spread Positive WOM (IW)	0.190	0.985	0.752
Social Influence (S1)	0.345	0.916	0.718
Recognition (RE)	0.380	0.965	0.685
Reciprocal Benefit	0.211	0.987	0.664
Attitude (ATT)	0.102	0.502	0.630

For the Q^2 value, the continued use intention construct is 0.253 > 0, the intention to spread positive WOM construct is 0.190, the social influence construct is 0.345 > 0, the recognition construct is 0.380, the reciprocal benefit construct is 0.211 and the attitude construct is 0.102. All the construct value were positive and indicating that the construcs have predictive relevance.

Table 7. Inner VIF Values

Variables	Continued use Intention	Intention to Spread WOM	Attitude	Reciprocal Benefit	Recognition	Social Influence
Attitude	1.000	1.000				
Network Exposure				2.224	1.876	1.000
Recognition			5.812	2.224		
Social Influence			4.852		1.876	
Reciprocal Benefit			4.656			

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Furthermore, this study also found that VIF values in Table 7 for all the constructs were below 10, signifying no issues of multicollinearity.

Hypotheses Testing (Direct Effect)

Significant values are determined by analyzing the path coefficient from test results using PLS and bootstrapping procedures (Table 8). Seven out of nine causal effects tests showed statistically significant results, as the p-value is less than 0.5, and the T-statistics are more than 1.96.

Table 8. Hypothesis Testing (Direct Effect) via Bootstrapping

Hypothesis	Examined Relationship	Coefficients	t-value	p-value	Supported Hypothesis
H1	Network Exposure → Social Influences	0.250	4.572	0.000	Supported
H2	Network Exposure → Recognition	0.216	4.394	0.000	Supported
H3	Network Exposure → Reciprocal Benefit	0.337	4.964	0.000	Supported
H4	Social Influence → Recognition	0.154	3.718	0.001	Supported
H5	Sosial Influence →Attitude	0.165	3.477	0.000	Supported
H6	Recognition → Reciprocal Benefit	0.089	1.870	0.262	Rejected
H7	Recognition → Attitude	0.050	0.740	0.185	Rejected
H8	Reciprocal Benefit → Attitude	0.385	1.644	0.001	Supported
H9	Attitude → Continue to Use Intention	0.445	6.224	0.000	Supported
H10	Attitude → Intention Spreading WOM	0.348	5.716	0.000	Supported

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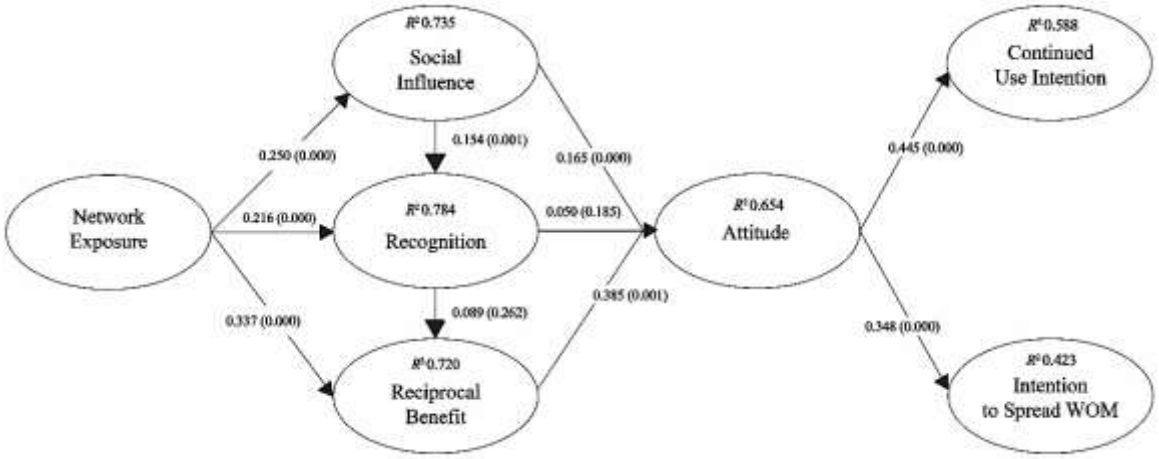


Figure 2. PLS Analysis Result for The Research Model

This study found that network exposure positively and significantly related to all social motivations, which are social influence (β = 0.250; *p* < 0.05), recognition (β = 0.216; *p* < 0.05), reciprocal benefit (β = 0.337; *p* < 0.05), in support of H1-H3. Moreover, social influences positively and significantly affect recognition (β = 0.154; *p* < 0.05) and attitude (β = 0.165; *p* < 0.05); thus H4 and H5 are supported. It found that the reciprocal benefit positively and significantly affects attitude (β = 0.385; *p* < 0.05). In contrast, recognition doesn't significantly affect reciprocal benefit (β = 0.089; *p* > 0.05) and attitude (β = 0.050; *p* > 0.05). Lastly, as predicted, the attitude was found to be a significant predictor of both the intention to continue using the service (β = 0.445; *p* < 0.05) and the intention to spread positive WOM (β = 0.348; *p* < 0.05), in support H9 and H10.

DISCUSSION

Currently, the concept of gamification is one of the popular marketing strategies applied in various e-commerce products and services. Gamification has been implemented by incorporating game elements that persuasively increase user engagement, motivation, and participation. Despite the widespread adoption of gamification techniques across various industries, there remains a noticeable gap in research when it comes to its application within the e-commerce sector, particularly in cases where both social motivations and values are integrated (Kusumawardani et al.,

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2023). This suggests that there is limited understanding or exploration of how gamification can be effectively leveraged to enhance the online shopping experience by simultaneously addressing social factors that drive consumer behavior and delivering tangible value to shoppers.

The existing body of research on gamification in the e-commerce industry has predominantly examined social motivations in isolation, rather than exploring its combined effects comprehensively. This limited focus has resulted in a fragmented understanding of how gamification strategies can effectively leverage both social motivations to enhance the online shopping experience. Therefore, on a theoretical level, this research contributes to the literature by developing and empirically analyzing a theoretical framework informed by user attitudes about the importance of social motivations in e-commerce applications.

The result indicated that out of ten hypotheses, eight were supported, while two were rejected. The study revealed that social motives, particularly those related to social influence are a strong indicator of how users perceive gamification and their intention to continue using and recommending the service. The social effects (65,4%) has a bigger effect on the attitude of the game, which is in line with the previous study (Hamari & Koivisto, 2015). The study found that network exposure significantly influences social influence, recognition, and reciprocal benefit. This finding is consistent with a prior study on gamification's social drive (Hamari et al., 2013). The study found that increased exposure to other users in the network leads to greater involvement in the gaming system. As a result, as the network grows, so does the likelihood of recognition and exposure to more social influence. However, the study found a limited correlation between network exposure to recognition and reciprocal benefits. The study suggests that the quality of connections with other users has a greater impact on recognition and reciprocal benefits than network size.

This study also explored the link between reciprocal benefit recognition and attitude. This study found that recognition did not positively correlate with reciprocal benefit. While recognition might seem like a straightforward way to enhance user engagement and foster a sense of reciprocity, its impact may not always be as significant as expected in influencing reciprocal benefit. In some cases, users may become overwhelmed by excessive recognition or rewards within the gamified system. If every small action triggers a recognition event, it can diminish the perceived value of the recognition and lead to desensitization. Users may begin to ignore or devalue the recognition, reducing its potential to influence reciprocal behavior.

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The type of recognition offered may not align with the incentives that drive reciprocal behavior in the context of e-commerce gamification. For example, users may be more motivated by tangible rewards such as discounts or exclusive offers rather than abstract forms of recognition like badges or virtual trophies. If the recognition offered does not sufficiently motivate users to reciprocate, its impact on reciprocal benefits may be limited. The overall design and implementation of the gamification elements might not have effectively integrated recognition into the user experience. If the gamification mechanics are poorly designed or overly intrusive, users may not perceive recognition as a significant motivator or may even find it annoying or insincere.

Similarly, the hypothesis for the reciprocal benefit to attitude was also supported. Reciprocal benefit in e-commerce gamification positively influences attitudes by enhancing user experience, building trust and loyalty, increasing motivation and engagement, eliciting positive emotional responses, and encouraging word-of-mouth promotion. By offering rewards or incentives, e-commerce platforms demonstrate value for users' engagement, fostering a sense of appreciation and satisfaction. This leads to higher levels of interaction, exploration, and ultimately, more conversions. Satisfied users are more likely to share their positive experiences, contributing to organic growth and a favorable reputation for the platform. Overall, reciprocal benefit creates a mutually beneficial relationship between users and e-commerce platforms, driving positive attitudes and business success. The interaction among users or players to get feedback is crucial in creating a positive attitude to gamification (Hamari et al., 2013).

In line with prior studies on gamification (Hamari et al., 2013; Hamari & Koivisto, 2015; Yang et al., 2017). The study found that an individual's attitude towards a gamification service significantly predicts their intention to continue using it and suggest it to others. This highlights the importance of attitudes in understanding behavioral intentions. Furthermore, an attitude like positive impact by using gamification will trigger word of mouth; people tend to suggest to their inner circle the positive things that happened to them (Kusumawardani et al., 2023). Favorable attitudes towards gamification in e-commerce platforms can lead to increased usage and favorable word-of-mouth among users.

THEORITICAL AND MANAGEMENT IMPLICATION

This study examines how network exposure affects the intention to use and propagate word of mouth, including social influence, reciprocal benefit, recognition, and attitude. Based on the analysis, this study concludes that network exposure significantly

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influences social influence, recognition and reciprocal benefit. Exposure to the gamified system leads to increased perceived benefits, peer recognition, and social influence. This study discovered that social influence features can positively impact app attitudes, leading to increased usage and word-of-mouth recommendations. The researchers suggest that future study should focus on the importance of social influence in gamified e-commerce apps.

This study's findings can assist e-commerce apps in recognizing the significance of gaming on their platform. This study found that gamification can increase users' exposure to the platform's network. Recognizing and valuing the value of social connection is becoming increasingly important in today's society. Instead of just having a personal relationship with the vendor, an e-commerce platform may feature community forums (Christian Franklin et al., 2014)The more interaction happens among users, then the more recognition and reciprocal benefit will be gained. Hence, the higher the reciprocity among users, the more collective the group will become (Belanche et al., 2019).This will encourage other users to play more often (Kusumawardani et al., 2023).After they get a positive thing by playing the game on the platform, they will continue to use the platform in the future, and in addition, it will increase sales (Hamari & Koivisto, 2015; Kusumawardani et al., 2023).

LIMITATIONS

The study's shortcomings serve as a guideline for future research. First, this study relied on self-reported online surveys. Respondents who are actively involved with the service may be more likely to participate in linked activities, thus impacting the findings. The results may not reflect the perspectives and intentions of less engaged service users. Thus, this study recommends that future research include the real use of statistics and relevant trials to strengthen the topic's robustness.

This study suggests that future research could include other variables such as purchase intention, customer loyalty, and customer satisfaction through gamification to quantify the continuous use of word of mouth. Future research could utilize an experimental approach to investigate gamification in e-commerce. This research study evaluates the framework in the context of Indonesia's e-commerce market. Future studies can look into e-commerce platforms using Gamification in many countries, not just Indonesia.

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