



Integrating Gamification and TAM to Drive Purchase Intention in E-Commerce

Satria Fajar Ardianto
Beijing Normal University, Beijing, People's Republic of China

ABSTRACT

This paper filled a research gap by integrating gamification and adopting the Technology Acceptance Model (TAM) framework to explore purchase intention among e-commerce users through sales promotion as mediating factors. Gamification, the implementation of game elements in marketing activities, offers an alternative strategy to enhance customer purchase intention. Using a survey method, this study collected 400 valid questionnaires from active e-commerce users in DKI Jakarta who utilize the gamification features. This finding reveal that Perceived Ease of Use and Social Influence positively influence purchase intention. Furthermore, Perceived Usefulness and Perceived Enjoyment positively influence purchase intention through the mediation of Sales Promotion. These findings offer practical guidance for business owners on leveraging gamification to increase purchase intention.

Keywords: Technology Acceptance Model; gamification; purchase intention; sales promotion; e-commerce

INTRODUCTION

A survey by the Indonesian Internet Service Providers Association (APJII) highlighted the most popular e-commerce platforms in the country for 2025. Shopee Indonesia ranked first, followed by Tik Tok Shop, Tokopedia, Lazada, and Blibli. In this competitive landscape, local companies (Tokopedia and Blibli) face intense competition from regional giants like Shopee Tik Tok Shop and Lazada. To thrive amid this rapid market development, Tokopedia must continuously innovate to stand out and deploy effective marketing communication strategies that boost user purchase intention on both its website and mobile app.

One of the marketing communication strategies implemented by Tokopedia to influence people's behavior is applying game elements on their online shopping application (non-game). This concept is also commonly known as gamification. Tobon et al. (2020) say gamification as a process of applying game design elements to non-game contexts, in which the interaction between game mechanics and personal tendencies contribute to a fun and enjoyable experience. Furthermore, Yang et al. (2017), gamification can be analyzed based on the technology acceptance model to predict user acceptance through perceived usefulness, perceived ease of use, social influence dan perceived enjoyment variables. Meanwhile, Hamari et al. (2014), there are various game elements such as points, level, leaderboard, badges, rewards, and progress.

“Tap-Tap Kotak” is an example of gamification implemented by Tokopedia. “Tap-Tap Kotak” utilizes the reward element in its application. The more the users make a transaction through

Tokopedia, the bigger the chance for them to obtain various rewards and offers from Tokopedia. There is also a leader board element on the Tokopedia account, which triggers the users to increase the transaction as many as possible through the TopQuest feature, which is a form of challenge to make a transaction on certain products. When finished, the user will receive a reward. The number of transactions is also done, which influences the membership level.

Implementation of reward and leader board elements on Tokopedia application also acts as one of the sales promotion strategies, since the reward received by the user is in the form of discount, offer, or points to be used for future purchase. Aside from reward and leader board, Tokopedia also applies for sales promotion in a cashback voucher. Cashback vouchers can build awareness on brand and product in consumers' minds and attract consumers' attention, which increases their purchase intention.

With the increasing popularity of games in marketing activities, a new gamification trend has attracted marketers' attention. Nowadays, many companies include game mechanics in their brand applications to effectively and efficiently communicate with consumers. Tam et al. (2024) gamification can play a crucial role in customer relationship management and building customer loyalty. García-Jurado et al. (2019) provides an understanding of the application of gamification in the e-commerce sector. Lee & Jin (2019), gamification is positively related to brand app experiences, influenced by fun and storytelling factors. Then the company is expected to develop technology to interact with customers, attract customers and provide them with unforgettable experiences and pleasures. Harwood & Gary (2015), gamification aims to encourage and provide incentives to customers which will later provide positive relational results to loyalty. Through the expansion of the Technology Acceptance Model (TAM), this research aims to determine, analyze the effect significance and direction of gamification in the marketing context as a sales promotion tool to increase the purchase intention of e-commerce users in Tokopedia. A quantitative approach through surveys is used to determine whether there is empirical evidence that supports the hypothesis of this. Thus, the results of this study can be generalized to the entire population to determine appropriate decisions regarding the implementation of gamification in e-commerce ecosystem.

TAM is a theory first introduced by Fred Davis in 1986 (Gefen & Larsen, 2017; Wu & Chen, 2017). TAM theory explained that the existence of specific dimensions in information technology acceptance could easily influence how information technology is accepted. In the final model that Venkatesh dan Fred Davis proposed in 1996, the factors that affect using a system in technology acceptance are perceived ease of use and perceived usefulness. Thus, Yang et al. (2017) add social influence and perceived enjoyment which also explain consumers' intention to involve with technology acceptance that affect the shift in consumers' attitude towards a particular brand. Perceived of usefulness is the level of trust in using a unique system that will increase the work performance; thus, the prospective new user will consider using the new technology for its benefit. Perceived usefulness can be measured using indicators as follow: work more quickly, job performance, increase productivity, effectiveness, makes job easier, and useful (Venkatesh et al., 2003; Azhar et al.2023). Perceived ease of use is defined as the extent to how someone who trusts the use of new technology will be free from any extra effort in obtaining the information they want (Davis, 1989; Kamase, 2012). Meaning, the system needs to be easy to apply to avoid the extra effort considered burdensome in using the newly developing technology. Perceived ease of use can be measured using

indicators as follow: easy of learn, controllable, clear and understandable, flexible, easy to become skillful, and ease to use (Venkatesh et al. 2003; Azhar et al. 2023).

The consistent relationship between perceived usefulness and purchase intention has been validated by various previous studies (Zhang et al., 2019; Wang et al., 2021). Specifically, Ventre & Kolbe (2020) emphasized that in the context of online shopping (e-commerce), perceived usefulness acts as a primary driver shaping consumer preferences. This occurs because consumers tend to be rational; they evaluate the extent to which a technology or product can simplify the shopping process, which ultimately directly increases their intention to make a purchase. So, this study hypothesis:

H1: Perceived usefulness positively and significantly affect purchase intention.

Previous studies, such as those by Vishwakarma et al. (2020), Erdmann et al. (2023), and Nguyen et al. (2025), acknowledge that consumers' prior experiences with technology can positively influence their trust in online platforms and their willingness to engage in technology-driven shopping. These studies demonstrate that technological experience directly enhances perceived ease of use (PEOU) and perceived usefulness. Furthermore, PEOU has been confirmed to have a favorable relationship with consumers' technology adoption (Liang et al., 2019) and to directly drive purchase intentions (Wang et al., 2021). So, this study hypothesizes:

H2: Perceived ease of use positively and significantly affect purchase intention.

The TAM framework used to explain gamification includes, perceived usefulness and perceived ease of use. As there are many criticisms for the development of TAM theory, this study adds factors of social influence and perceived enjoyment. Yang et al. (2017) show that perceived usefulness has a positive and significant effect on intention to use and consumer attitudes towards a brand in the context of gamification. While perceived ease of use does not have a significant effect on intention to use and brand attitudes on gamification. While social influence also has no effect on intention to use, it does have a positive influence on brand attitudes to consumers. Furthermore, perceived enjoyment has a significant positive effect on intention to use also on brand attitudes. Intention to engage itself in fact has a positive influence on consumer attitudes towards a brand.

Social Influence is the impact of society on the user (Yang et al., 2017). According to Wang & Chou (2014), social influence refers to how others influence someone's behavioral decision. In this research, social influence is defined as the extent to how someone perceives that their surroundings in society, whether it is friend or family, can influence their behavior. So, the hypothesis of this study is:

H3: Social Influence positively and significantly affect purchase intention.

Perceived enjoyment represents the hedonic value of a system shown by happiness and interest, which creates an exciting experience for the consumers. Perceived enjoyment is defined as the enjoyment experienced by the user (Yang et al., 2017). Juniwati (2015) argues that perceived enjoyment is a condition wherein using a particular system can be considered enjoyable. The indicators are fun, exciting, and interesting. Hofacker et al. (2016); Kian et al. (2017) stated that the right experience and enjoyment can lead to an increase in the effectiveness of mobile gamification marketing. Competitive nature and comfort are inherent

factors when playing games, because they can affect the cognitive and affective aspects of players. Hence, this study hypothesis:

H4: Perceived enjoyment positively and significantly affect purchase intention.

Increased productivity and technology development urge companies to find a new way in adapting marketing strategy. The marketing strategy is done by applying new technology, which is integrating gamification concept in sales promotion to influence consumers' purchase intention on an e-commerce platform. Many companies utilize gamification as a marketing strategy through a game or by applying competitive activities as engagement, brand loyalty, and brand awareness in increasing marketing effectiveness. Sales promotion is an essential element in a marketing campaign, which is generally short-term and planned to encourage consumers' purchase activity on certain product or service to be faster and bigger in number. (Kotler & Keller, 2016). Sales promotion is an acceleration tool designed to fasten the selling process and to maximize the sales volume by distributing additional incentive. Belch & Belch (2017) divide sales promotion into two categories, which are Consumer-oriented promotions and Trade-oriented promotions. Therefore, the hypotheses proposed in this study are:

H5: Perceived usefulness positively and significantly affect sales promotion.

H6: Perceived ease of use positively and significantly affect sales promotion.

H7: Social Influence positively and significantly affect sales promotion.

H8: Perceived enjoyment positively and significantly affect sales promotion.

In today's fiercely competitive e-commerce marketplace, marketers heavily rely on various promotional strategies to attract and retain consumers (Tong et al., 2022). Prior research has demonstrated that these promotional incentives play a critical role in shaping online shopping behavior (Ye & Zhang, 2014). More recently, Pham et al. (2025) highlighted that integrating promotional activities within digital marketing frameworks is essential for effectively stimulating and accelerating consumers' buying interest. In the e-commerce platforms, sales promotions exert a significant impact on the sales performance of online businesses (Huang & Zhao, 2023). Based on these insights, the following hypothesis is proposed:

H9: Sales promotion positively and significantly affect to purchase intention.

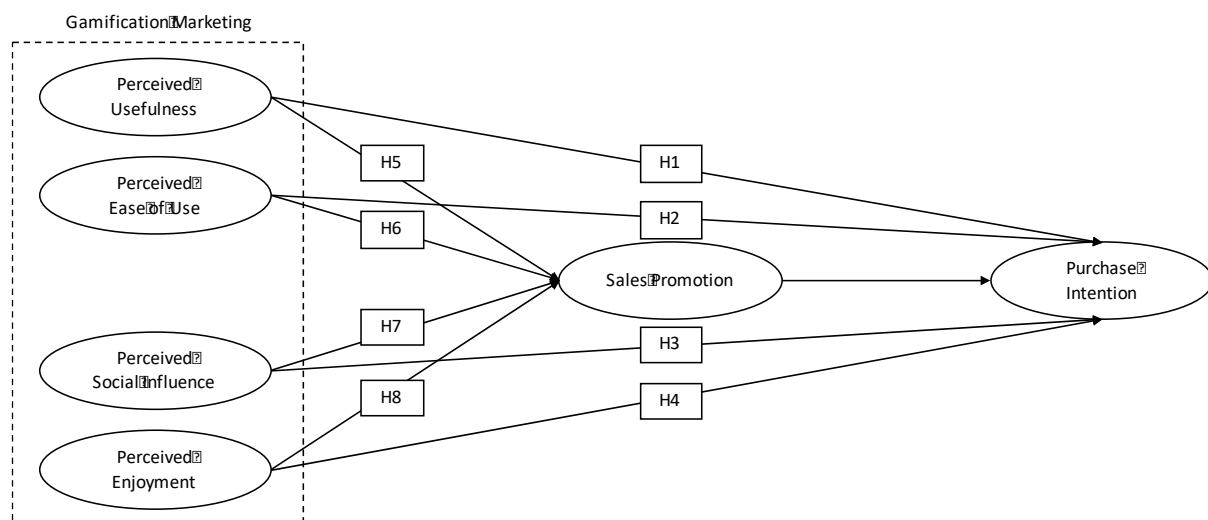


Figure 1. Research Model

METHOD

This research utilizes the positivistic paradigm through the quantitative method. This research is included in the survey research type about the collection method since it utilizes questionnaires to collect primary data. The measurement items of Perceived Usefulness (X1) and Perceived Ease of Use are adapted from Venkatesh et al. (2003); Azhar et al. (2023); Social Influence (X3) is adapted from Yang et al. (2017), and Perceived Enjoyment (X4) is adapted from Juniwati (2015). Meanwhile, purchase intention (Y) is adapted from Wang et al. (2021) and sales promotion (Z) is adapted from Belch & Belch (2017). Respondents' answers in this research are measured using Likert scale with intervals as follow: 1 = Strongly Disagree, 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree.

RESULT

The respondents in this research are obtained by distributing questionnaires among the e-commerce active users within DKI Jakarta and use the gamification feature. Aside from that, the age of respondents spans between 21-37 years old, with a minimum level of education is high school graduates. Comprehensive questionnaires distributed are 500 questionnaires with 400 responded questionnaires that can be processed.

Table 1. Typologies of Political Parties (9 pt, bold)

Code	Factor Loadings	AVE	CR	Remarks
PU1	0.919	0.851	0.944	Valid
PU2	0.896			Valid
PU3	0.952			Valid
PEOU2	0.884	0.790	0.882	Valid
PEOU3	0.894			Valid
SI1	0.787	0.582	0.847	Valid
SI2	0.787			Valid
SI3	0.816			Valid
SI4	0.653			Valid
PE1	0.822	0.574	0.841	Valid
PE2	0.853			Valid
PE3	0.689			Valid
PE4	0.647			Valid
SP1	0.687	0.562	0.883	Valid
SP2	0.758			Valid
SP4	0.787			Valid
SP5	0.741			Valid
SP6	0.923			Valid
SP7	0.568			Valid
PI1	0.833	0.682	0.939	Valid
PI2	0.899			Valid
PI3	0.575			Valid
PI5	0.925			Valid
PI6	0.556			Valid

Based on the validity and reliability test that has been done, 29 out of 32 items on the questionnaire statement declared as valid, which fulfill the requirements of factor loading ≥ 0.50 . Meanwhile, all the research variables are declared reliable since they fulfill the requirements of C.R. ≥ 0.70 and AVE ≥ 0.50 .

As a result of the respondents' characteristics in this research, the research findings stated that 226 male respondents amounted to 56.5% and 174 female respondents amounting to 43.5% of the respondents.

Table 2. Characteristics of Respondents

			Gender		Cumulative Value
			Male	Female	
Age	20 - 25 years	Amount	66	58	124
		Percent	16.5%	14.5%	31.0%
	26 - 31 years	Amount	87	64	151
		Percent	21.8%	160%	37.8%
	32 - 37 years	Amount	73	52	125
		Percent	18.3%	13.0%	31.3%
TOTAL		Amount	226	174	400
		Percent	56.5%	43.5%	100.0%

Most respondents in this research come from the category of the male within the age of 26-31 years old, which amounts to 87 respondents (21.8%), then followed by the category of the female within the same age group, which amounts to 64 respondents (16%). Thus, this research is dominated by the opinion of male respondents within the age of 26-31 years old. Then, referring to Table 2, we find that the respondents are dominated by the age group of 26-31 years old, whether on male or female respondents. Thus, this research will only further discuss the characteristics of male and female respondents within the age of 26-31.

Based on Confirmatory Factor Analysis, the number of indicators left after elimination is 13 indicators out of 6 variables studied. Perceived usefulness is the first variable eliminated from 3 into two indicators. Perceived ease of use also has three indicators which then be eliminated into two indicators. Social influence has four indicators which are eliminated into two indicators. Perceived enjoyment also has four indicators and, after elimination becoming two indicators. There is also a sales promotion variable with seven indicators that are then eliminated into three indicators and the purchase intention variable, which has 11 indicators and then eliminated into two indicators.

Table 3. Result of Confirmatory Factor Analysis

Criteria	Result	Index	Interpretation
CMIN(P)	0.057	≥ 0.05	Valid
RMSEA	0.030	≤ 0.080	Valid
RFI	0.935	≥ 0.90	Valid
NFI	0.964	≥ 0.90	Valid
CFI	0.990	≥ 0.90	Valid
IFI	0.990	≥ 0.90	Valid

The structural equation model (SEM) test is carried out after the confirmatory factor analysis test. Based on the calculation result done by the researcher using AMOS software, hence the results of SEM in this research are as follow:

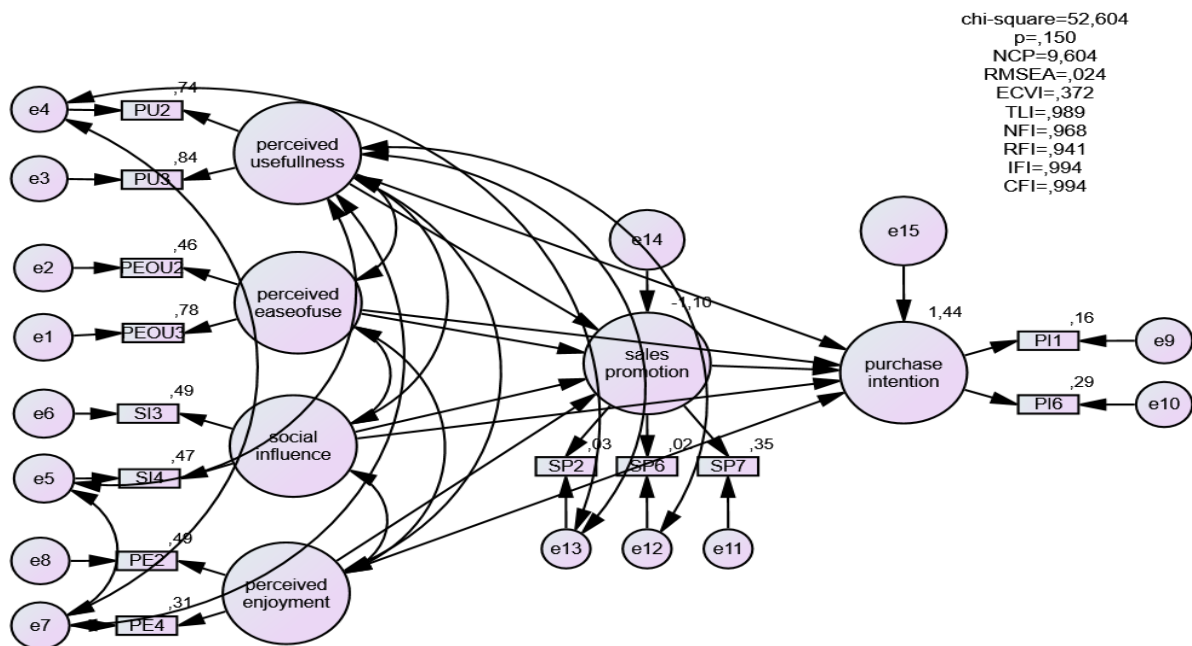


Figure 2. Confirmatory Factor Analysis

Related to the Structural Model Analysis, it is found that the model fulfills the 'fit' criterion. It can be defined with the value of calculation result that fulfills the criteria of structural model feasibility, which presented as follow:

Table 4. The goodness of Fit Criterion Test Result

Criteria	Result	Index	Model Evaluation
CMIN(P)	0.150	≥ 0.05	Good
RMSEA	0.024	≤ 0.08	Good
GFI	0.981	≥ 0.90	Good
AGFI	0.959	≥ 0.90	Good
CMIN/df	1.223	≤ 2.00	Good
TLI	0.989	≥ 0.90	Good
RFI	0.941	≥ 0.90	Good
NFI	0.968	≥ 0.90	Good
CFI	0.994	≥ 0.90	Good
IFI	0.994	≥ 0.90	Good

Hypothesis testing is done using the t-value with a significance level of 0.05. The T-value in the AMOS program constitutes the Critical Ratio (c.r) value on Regression Weight from the fit

model. If the value of Critical Ratio (c.r) ≥ 1.967 or probability value (P) ≤ 0.05 , then H_0 is rejected, and the research hypothesis (H_a) is accepted.

Table 5. Table of Hypothesis Test Results

			Estimate	S.E.	C.R.	P	Hypothesis Support
Perceived usefulness	→	Purchase Intention	-.038	.025	-1.503	.133	No
Perceived ease of use	→	Purchase intention	.284	.087	3.266	.001	Yes
Social Influence	→	Purchase intention	.527	.101	5.229	***	Yes
Perceived Enjoyment	→	Purchase intention	.169	.122	1.382	.167	No
Perceived usefulness	→	Sales promotion	-.240	.094	-2.541	.011	Yes
Perceived ease of use	→	Sales promotion	-1.063	.700	-1.518	.129	No
Social influence	→	Sales promotion	-1.624	.983	-1.625	.098	No
Perceived enjoyment	→	Sales promotion	3.419	1.702	2.009	.045	Yes

Moreover, the researcher also analyzes the magnitude of direct effect from each variable (standardized direct effects) as well as the indirect one (standardized indirect effects) along with the total effect (standardized total effects), which are presented on the table as follow:

Table 6. Analysis of Direct, Indirect, and Total Effect

	Std. Direct Effects	Std. Indirect Effects	Std. Total Effects
Perceived usefulness → Purchase intention	-.112		-.112
Perceived ease of use → Purchase intention	.435		.435
Social Influence → Purchase intention	.680		.680
Perceived enjoyment → Purchase intention	.185		.185
Perceived usefulness → Sales promotion → Purchase intention	-.501	(-.112 x (-.501)) = .056	-.445
Perceived ease of use → Sales promotion → Purchase intention	-1.158	(.435 x (-1.158)) = -.504	-1.662
Social influence → Sales promotion → Purchase intention	-1.491	(.680 x (-1.491)) = -1.014	-2.505
Perceived enjoyment → Sales promotion → Purchase intention	2.659	(.185 x 2.659) = .492	3.151

DISCUSSION

This research aims to find out and analyze the effect of gamification in increasing purchase intention through sales promotion applied by Tokopedia. The test results carried out on 8 (eight) hypotheses, along with the analysis on the effect proposed in this research, will be discussed as follow:

Hypothesis 1 proposed in this research is perceived usefulness positively and significantly affects purchase intention. This research is unsuccessful in proving that the perceived usefulness variable positively and significantly affects purchase intention. In the research finding in which the significance probability value shows (P) .133, meaning not significant. This research finding aligns with the Technology Acceptance Model theory, which states that perceived usefulness has significant effects on someone at an early stage in adopting the technology but will not significantly affect someone that has a lot of experience in using that technology (Ashraf et al., 2014). So, the researcher concludes that since e-commerce active users dominate the respondents, the benefit of a game element does not relate with the purchase intention through Tokopedia.

Hypothesis 2 proposed by the researcher is perceived ease of use positively and significantly affects purchase intention. The research finding successfully proves that perceived ease of use positively and significantly affects purchase intention. Based on the result obtained by the researcher, it can be explained that perceived ease of use positively and significantly affects purchase intention since the respondents assume that implementation of game elements on the Tokopedia application is easy to understand and play. If the game navigation were complicated and takes time for the consumer to understand, it would no longer be comfortable.

Hypothesis 3 proposed is social influence positively and significantly affects purchase intention. The finding in this research successfully proves the positive and significant effect of social influence variables on purchase intention. In this research, it is known that other consumers or close related person are essential factors in social influence since the influence from other consumers can encourage someone to change their attitudes or behavior towards a brand. Following the research by Yin et al. (2019), purchase intention is affected by social interaction among the consumers, especially Word-of-Mouth (WOM). Moreover, Kian et al. (2017) also stated a positive relationship between social influence and purchase intention. Supporting this view, Putra et al. (2024) noted that active consumers' feedback demonstrating how reciprocal social interactions directly drives purchase behavioral.

Hypothesis 4 proposed in this research is perceived enjoyment positively and significantly affects purchase intention. Based on the researcher's data processing and analysis, the positive and significant effect of perceived enjoyment on purchase intention is not proven. This research finding shows the significance probability value as .167, meaning not significant. This finding is not consistent with the result of previous research done by Yang et al. (2017), which stated that perceived enjoyment is found out to be the strongest predictor for intention to engage in the gamification process. Although this research aligns with the previous research

done by Liat & Wuan (2014); Juniwati (2015), perceived enjoyment does not affect consumers' purchase intention, since the ease of use and consumers' level of trust are prioritized.

By looking at the respondents of this research, the main reason perceived enjoyment is not a predictor of purchase intention due to the respondents may be dominated by millennials who are an active internet user and also more familiar with website interface, navigation, and basic knowledge on website function; thus they tend to ignore the enjoyment factor in using technology. In other words, using the internet has become a habit; thus, obtaining information is preferable to obtain enjoyment.

Hypothesis 5 proposed by the researcher is Perceived Usefulness positively and significantly affects purchase intention through Sales Promotion. The research finding proves a significant effect of mediated Sales Promotion on Perceived Usefulness and Purchase Intention. The significant effect of perceived usefulness on purchase intention through sales promotion is -.445, which means the effect of perceived usefulness on purchase intention through sales promotion tends to be weak or recessive. According to Longdong & Pangemanan (2015) and Tong et al. (2022), consumers will think they can benefit from the sales promotion given. Thus, they are encouraged to buy more products that are not initially on their shopping list. This study also shows that most of the respondents tend to have their purchase intention influenced by the availability of price-off or discounts, the chance to play games with exciting rewards by shopping at Tokopedia, and the game itself influence them to continue using Tokopedia. It means that sales promotion affects the benefit obtained by the consumers in using the Tokopedia application, and sales promotion is needed to attract consumers to make a purchase.

Hypothesis 6 proposed by the researcher is perceived ease of use significantly affects purchase intention through Sales Promotion. The research finding does not prove that sales promotion could mediate and positively and significantly affect perceived ease of use on purchase intention. The researcher assumes there is no correlation between sales promotion which mediates perceived ease of use on purchase intention. This finding is also supported by the questionnaire result, representing the benefit of using games on the Tokopedia application.

Hypothesis 7 proposed by the researcher is social influence significantly affects purchase intention through Sales Promotion. The research finding does not prove that sales promotion can mediate and positively and significantly affect social influence variable towards purchase intention. According to Nugroho & Irena (2017), the insignificance of sales promotion variable is due to the skepticism the consumers have on the promotional activity done by company when other consumers can create positive Word-of-Mouth (WOM) towards the brand, in this case, Tokopedia. Indeed, someone will consider and show their purchase intention on the offered product on the Tokopedia platform without the sales promotion offered.

Hypothesis 8 proposed by the researcher is perceived enjoyment significantly affects purchase intention through Sales Promotion. The research finding proves that sales promotion positively and significantly mediates perceived enjoyment on purchase intention. As of the research done by Schulze et al. (2014), consumers often involve in an online society aiming to have fun and be entertained. Nowadays, sales promotion is viral in the hedonic products category, resulting in fulfillment of hedonic values such as enjoyment and happiness to be prioritized in reflecting the shopping experience. (Narayanaswamy & Heiens, 2018).

Therefore, in this research, sales promotion can significantly and positively mediate perceived enjoyment towards purchase intention since the consumers are involved in an entertaining shopping environment that provides enjoyment, happiness, or satisfaction through the available game on the Tokopedia application.

CONCLUSION & RECOMMENDATION

Based on the analysis result and discussion described, here are the concluding from the issue and aim of this research. This research concludes that perceived ease of use positively and significantly affects purchase intention. Social influence positively and significantly affects purchase intention. Meanwhile, perceived usefulness and perceived enjoyment do not affect purchase intention. Aside from that, through the mediation of sales promotion, it is known that perceived usefulness has a negative and significant effect on purchase intention. Perceived enjoyment also positively and significantly affects purchase intention through sales promotion. Meanwhile, there is no effect on purchase intention through the mediation of sales promotion on perceived ease of use and social influence.

From a managerial point of view, through this research we know if perceived ease of use and social influence positively affect purchase intention, the business owner can utilize user interfaces, navigation, and easy access on the implementation of gamification. Moreover, amid e-commerce competition these days, this research indicates that implementing gamification affects increasing purchase intention. Thus, e-commerce companies that have not adopted gamification can begin to utilize gamification to increase purchase intention. However, by limiting this research, gamification needs to be developed by looking at the users' perspective. Suppose implementation of gamification can affect consumers' perception, especially on ease of use and the social effect. In that case, it can affect the consumers to change their attitude and behavior and recommend it to other consumers, which helps increase consumers' purchase intention.

This research is still limited by respondents' demographic, which covers 21-37 years old residing in the DKI Jakarta area. Meanwhile, along the time this research is carried out, other e-commerce utilizes the game element in their system and integrates a game itself with the e-commerce. This research model is expected to be used in future research on other e-commerce to obtain a comparison; as a result, to evaluate the effectiveness of gamification on purchase intention in e-commerce in a bigger context.

ACKNOWLEDGEMENT

The authors are grateful to the respondents that answered the online questionnaire.

DECLARATION

Any potential conflict of interest should be stated and declared in this section. This includes any financial support for the study to be disclosed as well.

REFERENCES

- Ashraf, A.R., Thongpapanl, N. and Auh, S. (2014). The Application of the Technology Acceptance Model under Different Cultural Contexts: The Case of Online Shopping Adoption. *Journal of International Marketing*, 22, 68-93. <http://dx.doi.org/10.1509/jim.14.0065>
- Azhar, M., Akhtar, M.J., Rahman, M.N., & Khan, F.A. (2023). Measuring buying intention of generation Z on social networking sites: an application of social commerce adoption model. *Journal of Economic and Administrative Sciences*, 41(3), 979-1001. <https://doi.org/10.1108/JEAS-02-2022-0047>
- Belch, G. E., & Belch, M. A. (2017). *Advertising and promotion: An integrated marketing communications perspective* (11th ed.). McGraw-Hill.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340. <https://doi.org/10.2307/249008>
- Erdmann, A., Mas, J. M., & Obesso, M. d. (2023). Disruptive technologies: How to influence price sensitivity triggering consumers' behavioural beliefs. *Journal of Business Research*, 158, 113645. <https://doi.org/10.1016/j.jbusres.2023.113645>
- García-Jurado, A., Castro-González, P., Torres-Jiménez, M., & Leal-Rodríguez, A. L. (2019). Evaluating the role of gamification and flow in e-consumers: millennials versus generation X. *Kybernetes*, 48(6), 1278-1300. <https://doi.org/10.1108/K-07-2018-0350>
- Gefen, D., & Larsen, K. R. (2017). Controlling for Lexical Closeness in Survey Research: A Demonstration on the Technology Acceptance Model. *Journal of the Association for Information Systems*, 18(10), 727-757. <https://doi.org/10.17705/1jais.00469>
- Hamari, J., Koivisto, J., & Sarsa, H. (2014). Does Gamification Work? -- A Literature Review of Empirical Studies on Gamification. *2014 47th Hawaii International Conference on System Sciences*, 3025-3034. <https://doi.org/10.1109/HICSS.2014.377>
- Harwood, T., & Gary, T. (2015). An investigation into gamification as a customer engagement experience environment. *Journal of Services Marketing*, 29(6/7), 533-546. <https://doi.org/10.1108/JSM-01-2015-0045>
- Hofacker, C. F., Ruyter, K.D., Lurie, N. H., Manchanda, P., & Donaldson, J. (2016). Gamification and mobile marketing. *Journal of Interactive Marketing*, 34(1), 25-36. <http://dx.doi.org/10.1016/j.intmar.2016.03.001>
- Huang, S., & Zhao, Y. (2023). How Uncertain Promotions Affect Inaction Inertia in an Online Retail Context. *International Journal of Electronic Commerce*, 27(3), 385-405. <https://doi.org/10.1016/j.intmar.2016.03.001>

- Juniwati. (2015). Pengaruh perceived ease of use, enjoyment dan trust terhadap repurchase intention dengan customer satisfaction sebagai intervening pada belanja online (Studi pada mahasiswa Universitas Tanjungpura Pontianak). *Jurnal Ekonomi Bisnis dan Kewirausahaan (JEBIK)*, 4(1), 140-156. <https://doi.org/10.26418/jebik.v4i1.11465>
- Kamase, H. P. (2012). *Perluasan model penerimaan teknologi terhadap kegunaan dan kemudahan penggunaan persepsian*. Lembaga Pengkajian Pembaharuan Hukum dan Kebijakan Publik (LP2HKP).
- Kian, T. P., Boon, G. H., Fong, S.W.L., & Ai, Y. J. (2017). Factors that influence the consumer purchase intention in social media websites. *International Journal of Supply Chain Management*, 6(4), 208-214.
- Kotler, P., & Keller, K. L. (2016). *Marketing Management* (15th ed.). Pearson Education Limited.
- Lee, J., & Jin, C. (2019). The role of gamification in brand app experience: The moderating effects of the 4Rs of app marketing. *Cogent Psychology*, 6(1). <https://doi.org/10.1080/23311908.2019.1576388>
- Liang, Y., Lee, S., & Workman, J. E. (2019). Implementation of Artificial Intelligence in Fashion: Are Consumers Ready? *Clothing and Textiles Research Journal*, 38(1), 3-18. <https://doi.org/10.1177/0887302X19873437>
- Liat, C.B., & Wuan, Y.S. (2014). Factors Influencing Consumers' Online Purchase Intention: A Study among University Students in Malaysia. *International Journal of Liberal Arts and Social Science*, 2(8), 121-133.
- Longdong, E. Y. E., & Pangemanan, S. S. (2015). Analyzing the effect of virtual atmospheric cues, sales promotions, and situational factors on online impulse buying in Canada. *Jurnal EMBA*, 3(3), 119-129.
- Narayanaswamy, R., & Heiens, R. A. (2018). Online sales promotion in hedonic versus utilitarian product categories. *International Journal of Electronic Marketing and Retailing*, 9(1), 77-88. <https://doi.org/10.1504/IJEMR.2018.088590>
- Nguyen, Q. H., Hanh, T. T., Hanh, N. L. M., Nhi, N. D. L., Anh, D. N., & Linh, H. T. (2025). The impacts of virtual try-on for online shopping on consumer purchase intention: the moderating role of technology experience. *Cogent Business & Management*, 12(1). <https://doi.org/10.1080/23311975.2025.2500774>
- Nugroho, A. R., & Irena, A. (2017). The Impact of Marketing Mix, Consumer's Characteristics and Psychological Factors to Consumer's Purchase Intention on Brand "W" in Surabaya. *iBuss Management*, 5(1), 55-69.
- Putra, A. E., Husada, F., & Fianto, L. (2024). Marketing Communication Strategy in Peer-to-Peer Lending for Indodana Online Loan Services to Appeal to Millennial Customers.

- Journal of Research on Business and Tourism*, 4(1), 32-45.
<https://doi.org/10.37535/104004120243>
- Pham, M., Nguyen, T. H. T., Le, L. T. M., Nguyen, V. T. T., Tran, H. Y., & Lam, B. Q. (2025). From Enjoyment to Action: How Sales Promotion Amplifies the Hedonic Benefits of Influencer Credibility on Purchase Intention? *Journal of Promotion Management*, 31(8), 1179-1193. <https://doi.org/10.1080/10496491.2025.2602131>
- Schulze, C., Schöler, L. & Skiera, B. (2014). Not all fun and games: viral marketing for utilitarian products. *Journal of Marketing*, 78(1), 1-19.
<https://doi.org/10.1509/jm.11.0528>
- Tam, T. V., Tien, N. H., & Banka, M. (2024). Identifying gamification factors for digital banking service users in Vietnam: Extending TAM model with gamification and perceived value. *Cogent Business & Management*, 11(1), 2398730.
<https://doi.org/10.1080/23311975.2024.2398730>
- Tobon, S., Ruiz-Alba, J. L., & García-Madariaga, J. (2020). Gamification and Online Consumer Decisions: is the Gameover? *Decision Support Systems*, 128, 113167.
<https://doi.org/10.1016/j.dss.2019.113167>
- Tong, T., Xu, X., Yan, N., & Xu, J. (2022). Impact of different platform promotions on online sales and conversion rate: The role of business model and product line length. *Decision Support Systems*, 156, 113746. <https://doi.org/10.1016/j.dss.2022.113746>
- Venkatesh, V., Morris, M. G., Davis, G. B., Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 27(3), 425-478.
- Ventre, I., & Kolbe, D. (2020). The Impact of Perceived Usefulness of Online Reviews, Trust and Perceived Risk on Online Purchase Intention in Emerging Markets: A Mexican Perspective. *Journal of International Consumer Marketing*, 32(4), 287-299.
<https://doi.org/10.1080/08961530.2020.1712293>
- Vishwakarma, P., Mukherjee, S., & Datta, B. (2020). Travelers' intention to adopt virtual reality: A consumer value perspective. *Journal of Destination Marketing & Management*, 17(4), 100456. <https://doi.org/10.1016/j.jdmm.2020.100456>
- Wang, E. S., & Chou, N. P. (2014). Consumer Characteristics, Social Influence, and System Factors on Online Group-Buying Repurchasing Intention. *Journal of Electronic Commerce Research*, 15(2), 119-132.
- Wang, M., Sun, L. L., Hou, J. D. (2021). How Emotional Interaction Affects Purchase Intention in Social Commerce: The Role of Perceived Usefulness and Product Type. *Psychology Research and Behavior Management*, 14, 467-481.
<https://doi.org/10.2147/PRBM.S301286>

- Wu, B., & Chen, X. (2017). Continuance intention to use MOOCs: Integrating the technology acceptance model (TAM) and task technology fit (TTF) model. *Computers in Human Behavior*, 67, 221-232. <https://doi.org/10.1016/j.chb.2016.10.028>
- Yang, Y., Asaad, Y., & Dwivedi, Y. (2017). Examining the impact of gamification on intention of engagement and brand attitude in the marketing context. *Computers in Human Behavior*, 73, 459-469. <https://doi.org/10.1016/j.chb.2017.03.066>
- Ye, L. R., & Zhang, H. (2014). Sales Promotion and Purchasing Intention: Applying the Technology Acceptance Model in Consumer-to-Consumer Marketplaces. *International Journal of Business, Humanities and Technology*, 4(3).
- Yin, X., Wang, H., Xia, Q., & Gu, Q. (2019). How Social Interaction Affects Purchase Intention in Social Commerce: A Cultural Perspective. *Sustainability*, 11(8), 2423. <https://doi.org/10.3390/su11082423>
- Zhang, T., Wang, W. Y. C., Cao, L., & Wang, Y. (2019). The role of virtual try-on technology in online purchase decision from consumers' aspect. *Internet Research*, 29(3), 529-551. <https://doi.org/10.1108/IntR-12-2017-0540>