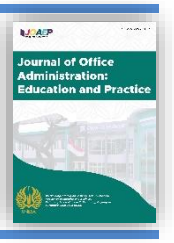
Journal of Office Administration: Education and Practice

Volume 4 Issue 3, pp.150-161 (2024)

Hompage: https://ejournal.unesa.ac.id/index.php/joa



The Influence of Network Exposure, Social Influence, and Recognition Towards the Adoption of E-commerce in College Students

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ARTICLE INFO

Keywords:

Network Exposure, Social Influence, Recognition, Adoption of E-commerce

Article History:

Received Juni 7, 2024

Revised August 24, 2024

Accepted August 29, 2024

Available online November 30, 2024

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ABSTRACT

This study aims to analyze what factors can influence students to continue using gamification services on the Shopee e-commerce application. The study was conducted on Office Administration students Class of 2020-2023 with a sample of 150 from the total population of 252 students determined using a Krecjie table with a signification level of 0.05. in the process of analyzing research data using Structural Equation Modeling-Generalized Structured Component Analysis (SEM-GSCA) using gamification has a significant positive influence on social influence and recognition. Social influence has a significant positive effect on attitude, besides that recognition also has a significant positive effect on attitude. Furthermore, the attitude has a significant positive effect on continued use intention. This research can able to provide a better understanding, especially on the application of gamification in e-commerce by examining social influence in games and recognition to continue using the Shopee e-commerce platform.

INTRODUCTION

In the era of Industrial Revolution 5.0, the use of technology is increasingly widespread, especially in e-commerce. Based on Market Insight Statistics data in 2022, the number of e-

commerce users in Indonesia alone amounted to 178.94 million. It is expected to continue to increase even though statistics estimate that in 2027, the number of e-commerce users will reach 244.67 million. One of the e-commerce applications widely used by the public is the Shopee application. As reported in databooks.katadata.co.id in September 2023, Shopee received 237 million visits, with this achievement jumping about 38% when compared to the beginning of 2023. According to Merhabi (2021), he revealed that gamification is the use of game services in non-game contexts such as websites and online communities. Another opinion about gamification is presented by Yang (2021), who argues that gamification is one of the prevalent concepts in mobile systems and technologies. It results from adopting games to facilitate users' desired behaviors for positive work outcomes. In short, gamification is a game service created to entice users to download the game and want to continue using the application. Gamification aims to establish relationships between consumers, employees, and partners. Shopee's product manager said that gamification is a marketing strategy suitable for millennials who love to play online games. To maintain this achievement, Shopee is making several efforts, one of which is through a gamification strategy. The features in Shopee include Shopee Tanam, Shopee Capit, Shopee Buble, Shopee Candy, and many others. Most respondents from the research conducted Shopee Tanam, a game often played with a percentage of 52%. The reason they play the Shopee Tanam game more often is because of the ease of service provided, they only capitalize on planting plants obtained from one of the stores. After they plant the seeds, the next thing to do is to water them regularly until they get the vouchers or coins they planted. Vouchers can be free shipping or discounted prices that can be redeemed when buying the desired item.

Based on unstructured interviews by the students of Office Administration Education's Faculty of Economics and Business, Universitas Negeri Surabaya, the students often use and play games on the Shopee e-commerce application. There are several answers they give such as They play games on Shopee e-commerce in their spare time and can relieve fatigue, besides that there are also those who argue that playing games on Shopee is more profitable than other games. However, some students never or rarely play games on Shopee e-commerce because smartphones that do not support frequent errors and unstable networks can affect the acquisition of coins or achievements when playing these games. However, creating games on Shopee can create mutualism symbiosis between users and service providers if utilized optimally, where users will benefit because of vouchers and Shopee coins. For service

providers, the number of users who download the Shopee application and are interested in playing games will increase the number of visits to the application.

Based on previous research conducted by Sukmaningsih (2020) stated that the SI variable on ATT had a significant positive effect but was contrary to the research conducted (Kusumawardani, 2023). The variable recognition of attitude is contrary to the research conducted by (Hamari, 2013). It needs to be reviewed based on the gaps in previous research related to gamification services. In this research, the analysis process uses Structural Equation Modeling-Generalized Structured Component Analysis (SEM-GSCA). The update in this study was studied on a more specific sample, namely undergraduate students of Office Administration Education. This study aims to analyze the acceptance or rejection of gamification services and identify what factors can influence students to play games and want to use them continuously (Kusumawardani, 2023).

METHOD

In this study, the explanatory method was used. Explanatory is a research method that intends to explain the position of the variables studied and the influence of variability on one another. In addition, this study used quantitative data by distributing questionnaires with a Likert scale of 5 to measure people's opinions, attitudes, and perceptions about a social phenomenon. This research was conducted in the Office Administration Education study program, Faculty of Economics and Business, Surabaya State University. The population in this study is students of the class of 2020-2023 Office Administration Education study program with a total of 252 students. This study used purposive sampling techniques, a sampling technique of data sources with specific considerations. The criteria in this study are office administration education students in the 2020-2023 class who have the Shopee e-commerce application and have played games on the application at least 1-3 times in the past year. Sugiyono (2020) Based on the crejcie table with a signification level of 0.05, the sample size of this study was 150 students.

Table 1. Questionnaire Design

Construct	Indicators	Code	Source
Continued Use Intention	I intend to keep using the Shopee *e-commerce* application at least as long as I play *games* on the Shopee application	CUI1	(Koivisto, 2014)

Construct	Indicators	Code	Source
	I expect to use this application more often in the next three months	CUI2	
	I feel like I'll continue using this app in the near future at least as much free time as I've had the last few months	CUI3	
	I plan to continue using this app	CUI4	
	I will continue to use this app regularly as I do now	CUI5	
Attitude	I think using gamification on Shopee *e-commerce* is a good idea	AT1	(Kusumawardani, 2023), (Hamari, 2013)
	I think the use of gamification on Shopee *e-commerce* is a good thing	AT2	
	I think using gamification on Shopee *e-commerce* is a wise idea	AT3	
	I think the use of gamification on Shopee *e-commerce* is a positive thing	AT4	
	I think using gamification in the Shopee *e-commerce* app is a wise thing to do		
Network Exposure from *gamification*	I was admired by my friends when I leveled up in *games* on the Shopee application.	NE1	(Kusumawardani , 2023)
	I have many friends who follow my activities in the *Shopee application* games	NE2	
	My activity on gamification is followed by other users	NE3	
	I follow users who play *games* on the Shopee app	NE4	
	I have many friends in *the Shopee application* games	NE5	
Social Influence	I would play gamification on Shopee if a lot of people thought it was fun	SI1	(Kusumawardani , 2023)
	My friends think playing *games* on the Shopee app is a good idea	SI2	

Construct	Indicators	Code	Source
	People I admire (idols) can influence me to play *games* on the Shopee application	SI3	
	People who have influence in my behavior can influence me to play *games* on the Shopee application	SI4	
	People who are important to me will think positively when I play *games* on the Shopee application	SI5	
Recognition	I feel happy when my *game* level on the *Shopee* e-commerce app is noticed	RE1	(Kusumawardani, 2023)
	I am happy if users of *the games* application on Shopee leave comments on my achievements	RE2	
	I like it when other users leave comments regarding the results of my game on the *Shopee application* games	RE3	
	I feel happy when I find out that other users are browsing *my Shopee* games account	RE4	

This study involves several steps, and the first thing to do is to explore the background of the problems in this study and what problems will be reviewed. The second step is to formulate a research problem. The third step determines the purpose of the study. Researchers make observations and collect data, and research-related data will be collected. The questionnaire was designed, taken from previous research, and adapted to the context discussed, and the sampling method was determined. After the questionnaire is designed and adjusted to the research context, the questionnaire will go through the stages of validity and reliability tests. In the process of testing the validity of the questionnaire, all values on the question items were calculated by distributing questionnaires to 30 people outside the main sample. Where the questionnaire can be valid if R count > R table, the value of R table itself is 0.3494. In this study, all question items are more than 0.3494. The conclusion is that all question items are valid and can be used further. Questionnaire items are consistent if Alpha > r table, where the value of R table is 0.3494. In this study, all questionnaire items have a value of more than R table, and it is concluded that they are consistent and can be tested. The

assessment of the measurement model will also be carried out, followed by the assessment of structural models using generalized structured component analysis (GSCA) to test the hypothesis. The results of the study will be interpreted to draw appropriate conclusions. This research method aims to collect data from the population whose target is students. This study uses a quantitative approach, and data collection is done through customized questionnaires. It uses the GSCA application to test hypotheses by providing a complex methodology to test the relationship between network exposure, social influence, recognition, attitude, and continued use intention in undergraduate students of Office Administration Education of Universitas Negeri Surabaya by the Class of 2020-2023. For the hypothesis design, we can see in the figure 1.

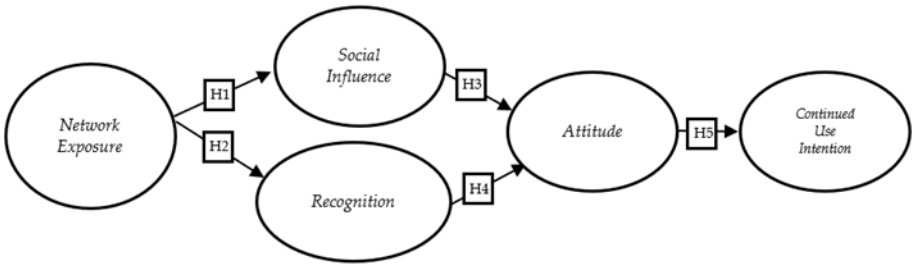

Figure 1. Hypothesis Design

RESULTS AND DISCUSSIONS

The total number of respondents is 150, and they have filled out the questionnaire form distributed through Google Forms. The sample size criterion is based on the Krejcie table with a significant level of 5%. Based on the results, as many as 93% (140) are female, and 7% (10) are male. As many as 46% of respondents (69) experienced playing games on Shopee 1-3 times in the past year, 38% of respondents (57) played games 4-6 times in the past year, and 16% of respondents (24) played games on Shopee more than 6 times in the past year. 95% of respondents (142) ranged from 18-23 years old and 5% less than 18 years old (8). The respondent profile can be seen in the Tabel 2.

Table 2. Respondent Profile

Variable	Items	n	Percentage
Users and have played games on the Shopee application	Yes	93	62%
	Ever	50	33%
	Never	7	5%
Gender	Woman	140	93%
	Man	10	7%
Force	2020	48	32%
	2021	35	23%

	2022	27	28%
	2023	40	27%
Age	<18 years old	8	5%
	18-23 years	142	95%
	>23 years old	-	-
Duration of playing *games* on Shopee	1-3 times in the past year	69	46%
	4-6 times in the past year	57	38%
	More than 6 times in the past year	24	16%
Games played	Shopee claws	16	11%
	Shopee planting	78	52%
	Shopee bubble	12	8%
	Shopee candy	35	23%
	Shopee match	9	6%

Then, the following are the values of indicators of loading on components. Explains that the indicators of loading on components are said to be qualified if the value is ≥ 0.7. Chin explained that the value of loading indicators on components is said to meet the requirements if the value is ≥0.5-0.6. If observed from the table above, the overall value is ≥ 0.6, then this research model has met the requirements of the Indicators of Loading on Components. On variables (Hair, Joe F., 2014) (1998), *Continued Use Intention* has the highest loading value on the CUI3 indicator (0.871), while on the CUI5 indicator, it shows the value *Loading* Lowest. On variables, the *Attitude* value *Loading* the highest is on the ATT2 indicator (0.907), while the value *Loading* the lowest is on the ATT1 indicator (0.811). Variable *Recognition* value *Loading* is highest on the RE3 indicator (0.910), and the value *Loading* is lowest on RE1 (0.836). Regarding *social influence* value *loading variables*, the highest is the SI2 indicator (0.802), and the lowest is the SI3 indicator (0.700). On variables, the *network exposure* value *loading* is the highest on the indicator NE3 (0.888), and the value *loading* is the lowest on the NE1 indicator (0.751). The result can be seen in the Table 3.

Table 3 Indicators of Loading on Components

Indicators	Estimate	ONE	95%CI(L)	95%CI(U)
NE1	0.751	0.042	0.657	0.834
NE2	0.840	0.029	0.780	0.892
NE3	0.888	0.020	0.843	0.924
NE4	0.771	0.046	0.681	0.856
NE5	0.878	0.020	0.835	0.911
SI1	0.738	0.040	0.658	0.817
SI2	0.802	0.031	0.728	0.855

SI3	0.700	0.049	0.574	0.775
SI4	0.799	0.037	0.708	0.860
SI5	0.762	0.040	0.677	0.833
RE1	0.836	0.035	0.755	0.886
RE2	0.896	0.020	0.852	0.936
RE3	0.910	0.016	0.869	0.935
RE4	0.864	0.029	0.797	0.911
ATT1	0.811	0.033	0.741	0.869
ATT2	0.907	0.018	0.870	0.937
ATT3	0.876	0.025	0.815	0.914
ATT4	0.828	0.040	0.740	0.890
ATT5	0.848	0.031	0.768	0.905
CUI1	0.803	0.040	0.701	0.865
CUI2	0.854	0.027	0.797	0.907
CUI3	0.871	0.020	0.833	0.910
CUI4	0.823	0.033	0.754	0.890
CUI5	0.779	0.044	0.680	0.858

Measurement *Construct Quality Measures (Reliability of Indicator)* Steps to get that research *convergent validity, internal consistency, and composite reliability* PVE value ≥.0.50 (Hair, Joe F., 2014). In another study by Ghozali (2015), *Cronbach's Alpha* when the value exceeds >0.70. Sarstedt et al. (2020) state that if *Composite Realibility* (rho) exceeds >0.70, then the variable items can be considered reliable while the dimensionality value is 1.0. The table above shows that the PVE values for the NE, SI, RE, ATT, and CUI are above 0.50. Alpha and Rho values for variables NE, SI, RE, ATT, and CUI are above 0.70. So, it can be concluded that all variables in the research model have levels of *convergent validity, internal consistency, and composite acceptable reliability* (Meneau & Moorthy, 2022). The result can be seen in the Table 4.

Table 4 Construct Quality Measures (Reliability of Indicator)

	NE	**THE**	**RE**	**ATT**	**CUI**
PVE	0.685	0.579	0.769	0.731	0.684
Alpha	0.884	0.818	0.900	0.907	0.884
Rho	0.915	0.873	0.930	0.931	0.915
Dimensionality	1.0	1.0	1.0	1.0	1.0

Forner Lacker criterion values proved that all diagonal values representing the square root of AVE are found to be more than the correlation between factors. This can determine the validity of discrimination in research so that it can be concluded that the measurement model has acceptable psychometric properties. The maximum HTMT value is 0.90, meaning the discriminant validity level is good. In the HTMT ratio, all variables in the table above show a

value of less than 0.90, so the evaluation of discriminant validity with HTMT is met and acceptable. In the table above, the SI variable's value is 0.547, or if the percentage becomes 54.7%, which means that independent variables influence 54.7% of SI in the study. In comparison, variables outside this study influence 45.3%. The resulting RE variable value is 0.487 or, if present 48.7%, which means the independent variable influences 48.7% of RE in this study while other variables outside this study influence 51.3%. The value of the ATT variable is 0.561 or, if present, 56.1%, which means 56.1% of ATT is influenced by independent variables in this study, while variables outside this study influence 43.9%. The value of the CUI variable is 0.439 or, if presented 43,.9%, which means that the independent variable influences 43.9% of CUI in this study, while 56.1% is influenced by variables outside this study (Fornell, 1981; Kinasih, 2023). The result can be seen in the Table 5.

Table 5 Component Validity Assessment

HTMT	Estimate	ONE	95%CI(L)	95%CI(U)
NE <-> SI	0.860	0.041	0.728	0.948
NE <-> RE	0.772	0.038	0.678	0.854
NE <-> ATT	0.637	0.060	0.494	0.758
NE <-> CUI	0.679	0.054	0.531	0.798
SI <-> RE	0.874	0.041	0.738	0.971
SI <-> ATT	0.738	0.054	0.607	0.873
SI <-> CUI	0.663	0.058	0.530	0.804
RE <-> ATT	0.809	0.032	0.727	0.876
RE <-> CUI	0.649	0.062	0.493	0.782
ATT <-> CUI	0.730	0.053	0.591	0.845

R *Square* is used to measure the predictive power of structural models. In Table 6, the value of the SI variable is 0.547, or if the percentage becomes 54.7%, which means that independent variables influence 54.7% of SI in the study. In comparison, variables outside this study influence 45.3%. The resulting RE variable value is 0.487 or, if presented 48.7%, which means the inof dependent variable influences 48.7% of RE in this study while other variables outside this study influence 51.3%. The value of the ATT variable is 0.561 or, if present, 56.1%, which means 56.1% of ATT is influenced by independent variables in this study, while variables outside this study influence 43.9%. The value of the CUI variable is 0.439 or, if presented 43,.9%, which means that the independent variable influences 43.9% of CUI in this study, while variables outside this study influence 56.1%. the result can be seen in the table 6.

Table 6. R Square

NE	SI	RE	ATT	CUI
0.0	0.547	0.484	0.561	0.439

FIT has a value that ranges from 0 to 1, FIT serves to explain the total variance of the entire variable, according to Hwang et al., that the higher the FIT value, the more variance will be described in the research model. Based on the table provided above, it can be seen that the FIT value is 0.638, which means that the variance in the research model is 63.8%. The AFIT value is not much different from the FIT value, but the AFIT value takes into account the complexity of the model, which ranges from 0 to 1. The AFIT value in this study is 0.633, which means that the research model explains 63.3% of the variance. FITs are explanatory between total variance and all model components ranging from 0 to 1. In studies that have been carried out, the value of FITs is 0.406, which means that 40.6% of the variance is described in the structural model. FITm ranges from 0 to 1, with a FITm value of 0.686, which means that 68.6% of variances have been described in the measurement model. According to Hwang et al., he explained that if the sample > 100, the GFI value > 0.93 and SRMR < 0.08. The GFI and SRMR values in the table are 0.983 and 0.063, respectively, so the GFI and SRMR values have met the fit model requirements Yang (2021), and Hwang (2021). The result can be seen in Table 7.

Table 7 Structural Model Fit Measure

FIT	AFIT	FITs	FITm	GFI	SRMR	OPE	OPEs	OPEm
0.638	0.633	0.406	0.686	0.983	0.063	0.368	0.614	0.316

It can be significant if it is at a 95% confidence interval and the value is positive or not negative (the estimate is considered statistically significant at 0.05 if the confidence interval does not include 0). (Hwang H. , 2021) *Network Exposure* (NE) against *Social Influence* (SI) gets a value *path coefficient* of 0.740 (CI L = 0.659, CI U = 0.816), which states that the first hypothesis is accepted and can be interpreted *as Network Exposure* has a positive value towards *Social Influence*. *Network Exposure* (NE) against *Recognition* (RE) has a value *path coefficient* of 0.696 (CI L = 0.659 CI U = 0.777), which states that the second hypothesis is accepted and can be interpreted *as Network Exposure* (NE) has a positive value towards *Recognition* (RE). *Social Influence* (SI) against *Attitude* (ATT) has a value *path coefficient* of 0.205 (CI L = 0.072, CI U = 0.393), which states that the third hypothesis is accepted and can be interpreted *as Social Influence* having a positive value towards *Attitude*. *Recognition* (RE) against *Attitude* (ATT) has a value *path coefficient* of 0.581 (CI L = 0.422, CU I = 0.709), which states that the fourth hypothesis is accepted and can be interpreted *as Recognition* (RE) has a positive value towards *Attitude* (ATT). *Attitude* (ATT) to *Continued Use Intention* (CUI) has a value *path coefficient* of 0.662 (CI L = 0.564, CU I = 0.766), which states that the fifth hypothesis is

accepted and can be interpreted *as Attitude* (ATT) has a positive value towards *Continued Use Intention* (CUI). The result can be seen in Table 8.

Table 8. Path Coefficient

	Estimate	ONE	95%CI(L)	95%CI(U)	Conclusion
NE->SI	0.740	0.035	0.659	0.816	Accept H1
NE->RE	0.696	0.037	0.617	0.777	Accept H2
SI->ATT	0.205	0.084	0.072	0.393	Accept H3
RE->ATT	0.581	0.077	0.422	0.709	Accept H4
ATT->CUI	0.662	0.050	0.564	0.766	Accept H5

Then, the results in this study support the research conducted by Kusumawardhani (2023) who argues that NE has a significant positive influence on SI. In addition, NE also has a significant positive effect on RE, as stated by (Hamari, 2014). SI on ATT has a significant influence, which is in line with the research conducted by (Sukmaningsih (2020); Puroboyo (2022). The RE variable has a significant positive effect on ATT, which is also supported by research conducted by Sukmaningsih (2020) and Hamari (2014). RE has a significant positive effect on COU, consistent with previous research (Yang, 2021) and (Kusumawardhani, 2023).

CONCLUSION

Based on the results and discussion of the research that has been done, network exposure from gamification has a significant influence on social influence and recognition of Shopee e-commerce. Social influence and recognition significantly positively affect attitudes toward games in Shopee e-commerce. On the other hand, attitude significantly influences continued intention to use games on the Shopee application. Gamification is a process that aims to optimize services by utilizing games in the service process. The existence of a gamification-based application platform can be used anytime and anywhere, so it can influence student intentions on an ongoing basis when using the Shopee e-commerce application. The more students who take advantage of gamification services will improve the quality of the technology industry, primarily e-commerce. This increase can encourage equitable distribution of industry and infrastructure in Indonesia. Maximum utilization of innovation will encourage sustainable development (SDGs) in industrial and infrastructure growth because many students or the public use technology when shopping and use gamification features to make profits. Suggestions for future researchers include variables such as purchase intent, customer satisfaction through gamification, and customer loyalty. In addition, future research may use mediating or intervening variables in the research to be conducted.

ACKNOWLEDGEMENT

We would thank to undergraduate student in Universitas Negeri Surabaya and all parties that help this research. We hope this research can be used for Academicians and Practicioners.

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