Evaluating the Role of Gamification in Increasing Online Shopping Behavioral Intentions with Flow State as Intervening Variable

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Abstract: **This study aimed to see the effect of Perceived Usefulness of Gamification and Perceive Ease of Use Gamification on Flow State and Behavior Intention. The population in this study was all Shopee online marketplace customers, especially those who have had gamification experience on the Shopee platform. The sampling technique used was purposive sampling. The sample was determined by the total number of indicators as many as 21 units, so the number of samples needed is 10 × 21 = 210 samples. The results showed that on Shopee online marketplace, Perceived Usefulness of Gamification affects Flow State, Perceived Ease of Use Gamification affects Flow State, Perceived Usefulness of Gamification affects Behavior Intention, Perceived Ease of Use Gamification affects Behavior Intention, Flow State affects Behavior Intention, Perceived Usefulness of Gamification affects Behavior Intention through Flow State, and Perceived Ease of Use Gamification affects Behavior Intention through Flow State. These findings also explain that the flow state is proven to function as a partial mediator in the model under study. Thus, this finding has found that the model of increasing Behavior Intention is a function of Perceived Usefulness of Gamification and Perceived Ease of Use Gamification which can significantly influence the Flow state and lead to its impact on changes and increases in behavior intention to own and use products originating from the Shopee site as an online marketplace. Further researchers are also expected to be able to develop this tested research model, by adding other variables such as uniqueness and customer experience. This behavioral intention improvement model also contributes to practitioners, especially research subjects, namely the Shopee online marketplace, as a basis for making decisions for their company's future strategies. Other online marketplaces can also use this research model as a rationale in determining whether or not gamification is needed in strengthening their marketplace brand/product.**

***Keywords*: Perceived Usefulness of Gamification, Perceive Ease of Use Gamification, Flow State, Behavior Intention**

I. INTRODUCTION

The concept of gamification is getting more attention recently from both academics and business practitioners. Practitioners' attention is mostly directed at applying gamification to achieve company goals. On the other hand, researchers or academics pay greater attention to the concept of gamification to gain a better understanding of the phenomenon itself. The term gamification was probably first used in 2002. However, it was not until 2010 that the concept of gamification gained greater popularity and interest. This caught the attention of game makers who wanted to use gaming techniques within the game itself to increase player engagement. At the same time, the concept received tremendous interest from the business world. According to (Sinanian, 2010), this triggers confidence in its success in improving consumer relations and involving them in activities that are not directly related to games. This belief has been supported by some studies reporting the positive effects of gamification (Hamari & Koivisto, 2014).

Taking advantage of the popularity of this gamification concept, Shoppee as an online marketplace site has also started trying to increase customer engagement through the use of this concept. Many games are included on the website so that the traffic that enters the Shopee site is not only those who have and want to shop but also other segments who want to try the games on this site, such as Shopee Tanam. The question is to what extent the gamification concept promoted by Shopee can increase customer engagement which has an impact on consumers' desire to shop at Shopee? This is based on the facts that occur about the effectiveness of gamification in the context of changing one's behavior as stated by (Tobon, Ruiz-Alba, & García-Madariaga, 2020)

Though there were many studies on online consumer behavior (Y. Chen, Yan, Fan, & Gordon, 2015), there are still few studies that approach gamification from a consumer behavior perspective (Sigala, 2015). On the other hand, since gamification is strongly driven by information communication technology (ICT), it is natural to analyze the relationship between gamification and consumer behavior online. Unlike most previous studies that have tried to see the effectiveness of gamification on online consumer behavior through Technology Acceptance Model (TAM) theory, in this study the authors include the concept of flow, which is an important component in motivating someone to do activities they enjoy (Hamari & Koivisto, 2014)) This flow concept is important because it becomes a bridge in shaping customer engagement, which has been widely tested as a determinant variable of intention behavior (García-Jurado, Castro-González, Torres-Jiménez, & Leal-Rodríguez, 2019). The Flow State variable

which is placed as a mediator in the modeling of this research also functions as the state of the art of this research.

II. LITERATURE REVIEW

In game design, flow is an important factor to consider if we want to create the involvement of players (Disastra, Suryawardani, & Sastika, 2019). The following is a list of elements that can affect flow in a video game (J. Chen, 2007).

Perceived Usefulness of Gamification

Related to Gamification, perceived use means the use of gaming itself for players, for example, to get the benefits of joy, fill spare time, sharpen the brain, develop right brain abilities, relieve stress. practice teamwork and practice patience. (Tobon et al., 2020). Although perceived use is often used which is part of the Technology Acceptance Model (TAM), many criticize it. Criticisms of this concept as a "theory" include its questionable heuristic value, limited explanatory and predictive power, triviality, and lack of practical value. (Benbasat & Barki, 2007).

In the context of gamification, the feeling of enjoyment will be awakened when gamers feel that the game they are playing is useful, for example, to challenge their skills. Therefore, the more challenged someone is in playing the game, the more likely that person will feel they are in the enjoyment zone (C. Kim, Hwang, & Cho, 2015). The effect of Perceived Usefulness of Gamification on Flow State has been studied by (Lee, Ha, & Johnson, 2019) and the results are significant and positive.

The perspective of use (perceived usefulness) is a phase where a person believes that the user of a particular system will be able to increase the benefits of the results of his work (Ramayah & Ignatius, 2005). Likewise with the concept of gamification tries to build customer engagement through flow states to change consumer behavior in a favorable direction, such as the intention to shop using the Shopee platform. Thus, we can conclude that there is indeed a relationship between the use of usefulness perspective through gamification to create behavior intention (Tobon et al., 2020). The effect of Perceived Usefulness of Gamification on Behavior Intention has been studied by (C. Kim et al., 2015) and the results are significant and positive. So all those previous theories reveal that *Perceived Usefulness of Gamification affects Flow State* and *Perceived Usefulness of Gamification affects Behavior Intention*

Perceived Ease of Use Gamification

Perceived ease refers to the degree to which a person believes that using a particular system will be free of effort. The degree to which a person believes that using a particular information technology system will be effort-free. An application that is perceived as easier to use than another is more likely to be accepted by the user (Davis & Davis, 1989). This component of Davis' original TAM model is measured through a seven-item self-report questionnaire which is defined as the extent to which a person believes that using a particular system will be effortless. One of the two key variables in the technology acceptance model. Perceived ease of use will lead to attitudes towards use, behavioral intentions to use, and actual use. Perceived use also affects another key variable, namely perceived usefulness.

The same is true for other online interaction attributes as stated by Davis through his TAM theory, namely perceived ease of use. The easier the game is played, the higher the interest of people to play it and encourage the person to feel enjoyment in playing the game (M. Kim & Shin, 2014). The effect of Perceived Ease of use Gamification on Flow State has been studied by (Lee et al., 2019) and the results are also significant and positive. The same reason can also be applied to examine the effect of perceived ease of use on behavior intention (Gatautis, et al. 2016). The easier it is to play the games on the Shopee platform and the more interesting the games, including the rewards that are presented when winning the game, the more consumers will be interested in making purchases (Gatautis, et al. 2016). The effect of Perceived Ease of use Gamification on Behavior Intention has been investigated by Kim, C., Hwang, JS, & Cho, J. (2015) and the results are significant and positive. So all those previous studies reveal that *Perceived Ease of Use Gamification affects Flow State* and *Perceived Ease of Use Gamification affects Behavior Intention*

Flow State

Nakamura, J., & Csikszentmihalyi, M. (2009) experimentally evaluated the flow state in gaming. He found that a person's skill and task difficulty interacted with the outcome of cognitive and emotional states. They see what makes us find lasting pleasure and satisfaction in activity. Flow is an operating mental state in which the person is completely immersed in what he or she is doing. It is a state and feeling of energized focus, full involvement, and success in the process of an activity (Nakamura, J., & Csikszentmihalyi, M. (2009).

The sense of comfort and fun that arises because the gameplay that is presented certainly makes gamers feel at home and happy to play it to pursue a certain level with prizes in the form of gifts or reward points that have been waiting (Hansch, Aet al 2015). From this statement, it is very easy to link enjoyment with behavior intention as suggested by Hansch, Aet al (2015). The effect of Flow state on Behavior Intention has been studied by Lee, YJ, Ha, S., & Johnson, Z. (2019) in their article entitled "Antecedents and Consequences of flow state in e-commerce". So those theories reveal that *Flow state affects Behavior Intention*

Behavior Intention

Behavioral intention is defined by Kim, M., & Shin, S. (2014) as the consumer's desire to behave in a certain way in order to own, dispose of and use products or services. So consumers can form a desire to seek information, tell others about their experiences with a product, buy a certain product or service, or dispose of the product in a certain way.

Research paradigm and Hypothesis

The following are the research Paradigms and Hypotheses in this study based on the previous causality theories.

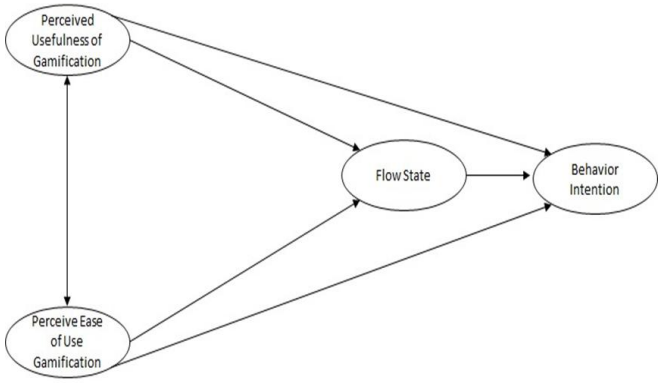

Figure 1 Research Paradigm

H1 : Perceived Usefulness of Gamification affects Flow State

H2 : Perceived Ease of Use Gamification affects Flow State

H3 : Perceived Usefulness of Gamification affects Behavior Intention

H4 : Perceived Ease of Use Gamification affects Behavior Intention

H5 : Flow State affects Behavior Intention

H6 : Perceived Usefulness of Gamification affects Behavior Intention through Flow State

H7 : Perceived Ease of Use Gamification affects Behavior Intention through Flow State

III. RESEARCH METHOD

Research Location and Object

This research begins with a theory and hypothesis to get answers to a problem and assumptions. To obtain data and information about the problems and assumptions in this study, the authors conducted this research on a Shopee marketplace account about the effect of perceived usefulness and ease of gamification on behavior intention through flow state.

Population and Sample

The population in this study was Shopee online marketplace customers, especially those who have had gamification experience on the Shopee platform. The method used in this research was purposive sampling, which is a sampling technique intentionally following the required sample criteria.

In this study, the number of variables studied was 4 variables with a total of 21 indicators, so the number of samples needed were: 10 × 21 = 210 samples.

Data analysis method

Data were tested using a structural equation model (SEM) to analyze the path model. Ha acceptance criteria were Critical Ratio (CR) > 1.96, and Probability (p) < 0.05.

IV. RESULT

Characteristics of Respondents

Respondents in this study were 174 people consisting of male respondents and 36 respondents and female respondents, thus the respondents in this study were dominated by male respondents. Based on the age of the respondents, it can be explained that as many as 20 people are under 25 years old, as many as 20 respondents are between 26 to 30 years old, as many as 72 respondents are aged 31 to 35 years, as many as 50 respondents are 36 to 40 years old. and as many as 40 respondents aged more than 40 years. Thus, respondents with an age level of 31 to 35 years are more dominant than respondents aged 26 to 30 years, so that respondents have maturity in thinking to determine the use of games on the Shopee application. Characteristics of respondents based on marital status can be explained that as many as 41 respondents are unmarried, as many as 168 respondents are married. Thus it reveals that married respondents are more dominant than respondents who are not married. Then the next respondent's characteristics are regarding the respondent's education level, it can be explained that as many as 4 people have the last education of high school, as many as 9 respondents have the last education of Academy/Diploma, as many as 151 people have the last bachelor's education while 46 respondents have the last postgraduate education of the total respondents studied. Regarding the tenure of the respondents, it can be explained that 38 respondents had a working period of under 5 years, as many as 77 respondents had 6-10 years of service, 41 respondents had 11-15 years of service, 30 people had a working period of 16 - 20 years and there are as many as 24 respondents who have a working period of more than 20 years. Thus, it can be explained that respondents with a working period of 6-10 years are the most respondents**.**

Measurement Test

The result of the measurement Test is shown below.

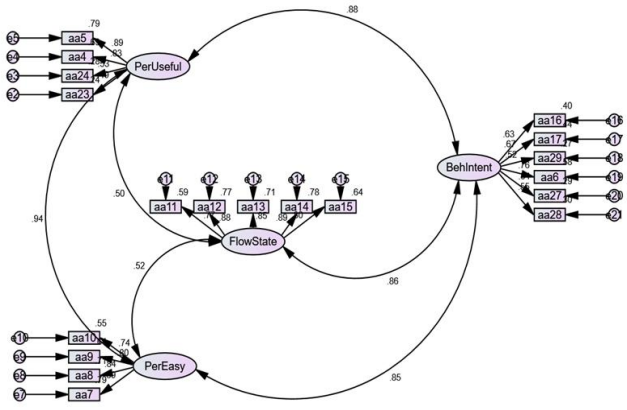

Figure 2 Measurement Test

The measurement test results show that all the relationships between indicators and their variable, to prove

whether the indicators can explain their variable or not. For the detail, we can see in the table as follows.

Table 1. Loading Factor Result

			Estimate	Roundup
aa23	<---	PerUseful	.489	0.49
aa24	<---	PerUseful	.533	0.53
aa4	<---	PerUseful	.832	0.83
aa5	<---	PerUseful	.891	0.89
aa7	<---	PerEasy	.890	0.89
aa8	<---	PerEasy	.841	0.84
aa9	<---	PerEasy	.801	0.80
aa10	<---	PerEasy	.739	0.74
aaa11	<---	FlowState	.768	0.77
aa12	<---	FlowState	.880	0.88
aa13	<---	FlowState	.845	0.85
aa14	<---	FlowState	.886	0.89
aaa15	<---	FlowState	.800	0.80
aa16	<---	BehIntent	.634	0.63
aa17	<---	BehIntent	.665	0.67
aa29	<---	BehIntent	.521	0.52
aa6	<---	BehIntent	.759	0.76
aa27	<---	BehIntent	.535	0.54
aa28	<---	BehIntent	.551	0.55

Based on the table above explains that all the indicators used are declared valid because they have a loading factor value > 0.50 so that all indicators in this research variable are indicators on Perceived Usefulness of Gamification, Perceived Ease of use Gamification, Flow State, and Behavior. This intention is declared valid to be continued at the next research stage

The goodness of fit test as one of the requirements in the structural equation model was also carried out. The suitability index and cut-off value as well as the test results can be seen in the following table.

Table 2. Goodness of Fit

Size Index Criteria	Cut-off Value	Results	Model Evaluation
CMIN/DF	<2	0.984	Good
RMSEA	0.08	0.075	Good
GFI	0.90	0.901	Good
AGFI	0.90	0.819	Good

Hypothesis test

a. Structural Test (Direct Effect Testing)

The structural test provides information to answer the research hypotheses. Figure 3 below illustrates the influences in the model.

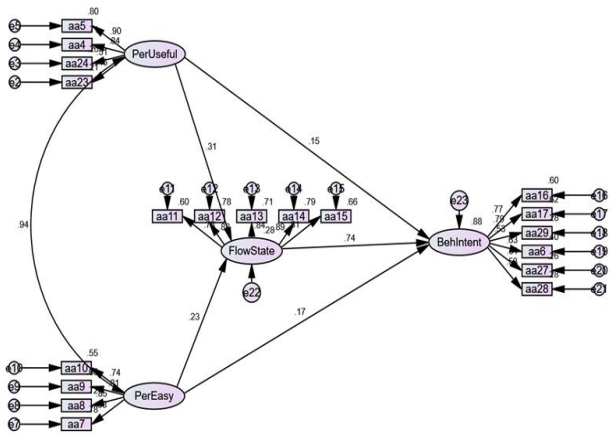

Figure 3. Structural Test Result

Based on Figure 3 shows that the direct influence between variables involving Perceived Usefulness of Gamification, Perceived Ease of use Gamification, Flow State, and Behavior Intention. The number of explanations we can see as follows.

Table 3. Hypothesis Conclusion

No	Hypothesis	CR	P-value	Description
1	Perceived Usefulness of Gamification affects Flow State	10.074	***	accepted
2	Perceived Ease of use Gamification affects Flow State	2.600	.010	accepted
3	Perceived Usefulness of Gamification affects Behavior Intention	10.076	***	accepted
4	Perceived Ease of use Gamification affects Behavior Intention	2.602	.009	accepted
5	Flow State affects Behavior Intention	2.381	.017	accepted
6	Perceived Usefulness of Gamification affects Behavior Intention through Flow State	7.388	***	accepted
7	Perceived Ease of use Gamification affects Behavior Intention through Flow State	2.794	0.005	accepted

H1: Testing the Effect of Perceived Usefulness of Gamification on Flow State generates the CR 10.074 and p-value *** which means that the influence is significant because those two values have met the requirements for H1 acceptance (CR > 1.96, p < 0.05). The magnitude of the coefficient is 0.311 so that means if Perceived Usefulness of Gamification increases 1 unit, will increase the Flow State 0.311 units.

H2 : Testing the Effect of Perceived Ease of use Gamification on Flow State generates a CR 2.600 and a p-value 0.010 which means that the influence is significant because those two values have met the requirements for H2 acceptance (CR > 1.96, p < 0.05). Thus it can be stated that the Effect of Perceived Ease of use Gamification on Flow State is significant. The magnitude of the coefficient is 0.230 so that means if Perceived Ease of use Gamification increases 1 unit, it will increase Flow State at Shopee online marketplace 0.230 units.

H3: Testing the Effect of Perceived Usefulness of Gamification on Behavior Intention generates a CR 2.602 and a p-value 0.009 which means that the influence is significant because those two values have met the requirements for H3 acceptance (CR > 1.96, p < 0.05). The magnitude of the coefficient is 0.147, which means if Perceived Usefulness increases of Gamification increases 1 unit, it will increase Behavior Intention at this Shopee online marketplace 0.147 units

H4 : Testing the Effect of Perceived Ease of use Gamification on Behavior Intention generates a CR 2.381 and a p-value 0.017 which means that the influence is significant because those two values have met the requirements for H4 acceptance (CR > 1.96, p < 0.05). The magnitude of the coefficient is 0.168 means if Perceived Ease of use Gamification increases 1 unit, it will increase Behavior Intention at Shopee online marketplace 0.168 units.

H5 : Testing the Effect of Flow State on Behavior Intention generates a CR 10.076 and a p-value *** which means that the influence is significant because those two values have met the requirements for H5 acceptance (CR > 1.96, p < 0.05). The magnitude of the coefficient is 0.738 means if Flow State increases 1 unit, it will increase Behavior Intention by 0.738 units.

b. *Indirect Effect Test*

H6: Testing the Effect of Perceived Usefulness of Gamification on Behavior Intention through Flow State generates the CR 7.388 and p-value *** . This means the mediation influence is significant. Because the direct effect of Perceived Usefulness of Gamification on Behavior Intention (H3) is also significant, the mediation effect on this hypothesis 6 model can be expressed as partial mediation. The coefficient of indirect influence is 0.229, which illustrates that if the Perceived Usefulness of Gamification increases by 1 unit, it will indirectly increase behavior intention by 0.229 units.

H7 : Testing the Effect of Perceived Ease of use Gamification on Behavior Intention through Flow State generates the CR of 2.794 p-value 0.005. This means the mediation influence is significant. Because the direct effect of Perceived Ease of use Gamification on Behavior Intention (H4) is also significant, the mediation effect on this hypothesis 6 model can be expressed as partial mediation. The coefficient of indirect influence is 0.169, which illustrates that if the Perceived Ease of use Gamification increases by 1 unit, it will indirectly increase behavior intention by 0.169 units.

Managerial Implication

The results show that all the hypotheses in this study are accepted and proved. This means that Perceived Usefulness of Gamification, Perceived Ease of use Gamification, and Flow State are true determinant variables of Behavior Intention. The biggest direct effect of the coefficient is the Flow State Effect on Behavior Intention, and it is followed by the Perceived Ease of use Gamification effect on Behavior Intention and Perceived Usefulness of Gamification effect on Behavior Intention. For the indirect effect results of two hypotheses tested, the greater one is the Perceived Usefulness of Gamification effect on Behavior Intention through Flow State. By knowing the magnitude of these effects, we can better understand the description of the strength of the model of increasing behavior intention being tested. By knowing the magnitude of these effects, we can better understand the description of the strength of the model of increasing behavior intention being tested. This can have implications for the Shoppe online marketplace management strategy, where in the future they can strengthen the variables in the model according to the order of strength of their influence on strengthening/increasing consumer behavior intention to own and use their marketplace products.

V. CONCLUSION

From the result we can see that on Shopee online marketplace, Perceived Usefulness of Gamification affects Flow State, Perceived Ease of Use Gamification affects Flow State, Perceived Usefulness of Gamification affects Behavior Intention, Perceived Ease of Use Gamification affects Behavior Intention, Flow State affects Behavior Intention, Perceived Usefulness of Gamification affects Behavior Intention through Flow State, and Perceived Ease of Use Gamification affects Behavior Intention through Flow State. These findings, also explain that the flow state is proven to function as a partial mediator in the model under study. Thus, this finding has found that the model of increasing Behavior Intention is a function of Perceived Usefulness of Gamification and Perceived Ease of Use Gamification which can significantly influence the Flow state and lead to its impact on changes and increases in behavior intention to own and use products originating from the Shopee site as an online marketplace. Further researchers are also expected to be able to develop this tested research model, by adding other variables such as uniqueness and customer experience. This behavioral intention improvement model also contributes to practitioners, especially research subjects, namely the Shopee online marketplace, as a basis for making decisions for their company's future strategies. Other online marketplaces can also use this research model as a rationale in determining whether or not gamification is needed in strengthening their marketplace brand/product.