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THE IMPACT OF GAMIFICATION ADOPTION INTENTION ON BRAND AWARENESS AND BRAND LOYALTY OF INDONESIAN TOURISM INDUSTRY FROM A TOURIST'S PERSPECTIVE

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ABSTRACT

Digital Transformation has affected the competitive landscape in this global environment. Many firms use technology to gain a competitive advantage in markets; one of the technologies used is Gamification, which is using a game to increase the intention or engagement of consumers in a marketing activity. Firms in Indonesia have also started using Gamification, such as Shopee or Gojek. Apparently, Gamification has also been used in Tourism Industry, though very scarcely and is still mostly in the development. Previous research has confirmed the positive impact of gamification adoption intention to brand awareness and brand loyalty from a marketer's perspective. This research aims to confirm the same impact, however, from the perspective of customers/tourists. This research is done using data samples from roughly 200 Indonesian respondents of a 40-question online questionnaire with an Indonesian-themed game prototype as a stimulus and is analyzed using the PLS method. The result surprisingly shows that not every construct has positive impacts when viewed from the consumer's point of view.

Keywords: Gamification, Awareness, Loyalty, Tourism, Intention

1. Introduction

For over 100 years, Tourism has been a phenomenon that sounds luxurious with infrastructures that could amaze many people in the world. The history of Tourism roots far in the 1920s in Germany, which at that time was named in theory called *Fremdenverkehr* (*Fremden* = foreign, *Verkehr*= traffic) (Gyr, 2010). The theory responded to the business and economic problems (Gyr, 2010).

In Indonesia, Tourism has been recognized since the Dutch colonialism era, with the creation of an association named *Veereniging Toeristenverkeer in Nederlandsch-Indie,* which was responsible for managing Tourism, and became the first Tourism bureau in Indonesia with the name *Veereninging Toeristen Verkeer (VTV)* in 1910 (Zulfikar, 2016). However, a huge leap in Indonesian Tourism could only be seen since the release of the President of the Indonesian Republic's Instruction No. 9 the Year 1969 about "Pedoman Pembinaan Pengembangan Kepariwisataan Nasional (The Guide to National Tourism Growth Building). Moreover, in the 1980s, together with the publication of the strategic decision for Tourism as part of Pelita V, Indonesia, for the first time, attended the World Tourism Market (WTM), and this was followed by the Visit Indonesia Year … which was founded in 1990 and continued until 2010 (Komsary, 2015).

However, the study of Tourism as we know it today just started to be learned in the 1960s. Since then, numerous aspects of Tourism started to be the subject of studies; one of them is Tourism Marketing has been growing recently as time flies, and its strategies don't lag.

One way of marketing Tourism is by *Gamification*. It is done by using games for a certain goal, like building user engagement and influencing their behavior (Deterding et al., 2011; Xi and Hamari, 2019). The concept has been used frequently in a few concepts in the Marketing world. Hsu and Chen (2018) explored the usage of gamification concepts to increase user perceptions of a brand's profit, value, and equity.

In Indonesia, there were some usages of Gamification in commercial marketing. Many well-known platforms in Indonesia have used this as a feature, such as Shopee Tanam from the e-Commerce platform Shopee. It has been proven by Chan and Tresna (2021) that the gamification feature positively impacted the platform users' engagement levels, despite its effect only at a medium level. But this is coupled with the fact that the game feature isn't the key to the marketing strategy by, Shopee. Thus, if the non-key feature could pose such a positive impact, then Gamification as a key feature might probably have a similar effect or even better.

In the Tourism field, *Gamification* has become a Tourism marketer's way of emphasizing user's engagement to obtain information about a Tourist Place's location and save it in the consumer's memories (Buhalis et al. 2019). Xu et al. (2015) once studied tourists as mobile gamers to obtain an illustration of the tourists' motivations when playing a mobile game. This research succeeded in deriving themes about tourist drivers on mobile games, and thus Gamification could influence tourists' drives as gamers in the strategy.

Abou Shouk and Soliman (2021) researched Gamification Adoption Intention on Brand Awareness and Brand Loyalty for the case of the Tourism industry in Egypt, with Consumer Engagement as mediator. Using UTAUT, the researchers validated that Gamification Adoption Intention positively impacted Brand Awareness and Brand Loyalty when viewed from an agency's perspective. However, the two pointed out that future research is required to validate the impact from a tourist's perspective, and thus this study aimed to answer the problem. Unlike Abou Shouk and Soliman, this paper used an updated version of UTAUT, which is UTAUT 3, derived by Farooq et al. (2017).

2. Literature Review

2.1 Gamification

Blohm and Leimester (2013) defined *gamification as* the strategy of applying the game design to upgrading non-game elements such as brand values, product/service values, or brand equity. It has been applied in commercial marketing rather occasionally. Starbucks, for example, used a gamification design on their mobile app, which is MyStarbucks Rewards, where consumers are urged to collect golden stars for it to be exchanged for free products or discounts (Hofacker et al. 2015). It has also been applied in Indonesia with the E-commerce platform Shopee. It uses gamification much more frequently with its hefty sum of games like Goyang Shopee, Shopee Tanam, and many more to then be redeemed for Shopee Coins, which will be used as a discount on online purchases in Shopee. These companies used this program with the goal of maintaining customers' loyalty, and thus these programs are just called "Loyalty Programs," which, according to Magatef (2015), had a positive impact on customer retention.

In Tourism, however, gamification is rather new and is in its early stage (Xu et al., 2019). Tourists, as consumers in the Tourism industry, might probably also be affected by gamification impacts, just like commercial consumers. Research by Xu et al. (2015) successfully concluded that the motivations of Tourists as mobile gamers which is curiosity, exploration, virtual reality experience, socialization, fun, challenge, and achievement.

As a Technology, however, gamification could generally be accepted and adopted as part of a marketing strategy; tourism is no exception. Since it was indeed viewed as Technology, then acceptance models like TAM or UTAUT could be used to actually study its impacts on society. For this study, UTAUT, specifically UTAUT 3, will be used.

2.2 Consumer Engagement

The term "Consumer Engagement" is usually used by marketers as a catchphrase to call most things related to consumer behavior, such as customer satisfaction or intention to rebuy (Bansal and Chaudhary, 2016). In the digital era, the concept of consumer engagement is used with the main goal of increasing the time or attention of a consumer to a brand (Bansal and Chaudhary, 2016).

Maoz et al. (2013) described four attributes in consumer engagement which is Active, Emotional, Rational, and Ethical C.E. Active C.E. described that a marketer/firm must actively engage in luring out consumer engagement, Emotional C.E. described that a firm must know a consumer's feeling when they had just or is having a product or using a service. Rational C.E. explains that a consumer will try to collect relevant data and information about a product/service before buying or investing in it, and finally, Ethical C.E. forces a firm to keep being ethical and to tell its customers and colleagues about how they view them, and how customers and colleagues view it. We argue that a customer that is currently having a positive attitude towards a brand after their engagement in finding information about the brand might actually be tempted to try that brand's game.

H1: Consumer Engagement has a positive impact on Gamification Adoption Intention

2.3 Performance Expectancy

Performance Expectancy is defined as a person's belief that a product/service he/she used will be useful as it should be (Venkatesh, 2013). It was constructed from five constructs which are extrinsic motivation, perceived usefulness, relative advantage, job fit, and outcome expectation. Venkatesh (2003) also stated that performance expectancy is the strongest prediction tool for an intention and is also impacted by gender and age. In the Gamification context, a customer would eventually expect a game to perform as how it should be. If it did, they might actually have the reason for using the app. Conversely, if a game doesn't work like how they expect, then they have no reason to use it as well since their expectations are crushed. Thus, we argue that
H2: Performance Expectancy has a positive impact on Gamification Adoption Intention

2.4 Effort Expectancy

Effort Expectancy is defined as the ease of use for someone to use a technology (Venkatesh et al., 2003). Previous research pointed out that *effort expectancy* significantly impacts both mandatory and voluntary usage. However, it was only in the first phase of use, which is direct usage after receiving training on technology usage. When the next phase occurs, which is when the consumers/users have gotten used to the Technology, then Effort Expectancy won't have a significant effect on technology use (Venkatesh et al., 2003). This gap would eventually be filled with one of UTAUT 2's constructs, which is a habit. Therefore, constructs constructing Effort Expectancy would usually have a high significance in the first phase of usage of Technology and occasionally decays in the latter phases.
H3: Effort Expectancy has a positive impact on Gamification Adoption Intention

2.5 Social Influence

Social Influence is defined as a level of how someone perceives the importance of technology usage according to others around him/her (Venkatesh et al. 2003). This construct shares a little similarity with another term by Thompson (1991), which is Social Norms. It has a similarity to the view that a person's behavior can be affected by how he/she is seen by people around him/her. Venkatesh (2003) mentioned that the significance of Social Influence didn't appear in voluntary usage. However, it was very impactful on mandatory usage. And like Effort Expectancy, the construct was only significant in early uses and weakened as the technology usage increased.
H4: Social Influence has a positive impact on Gamification Adoption Intention

2.6 Facilitating Conditions

Facilitating Conditions are defined as the level of belief that there are system or community that can support anyone when they are using the Technology or when they are dealing with problems with the Technology (Venkatesh et al., 2003). In his research, Venkatesh derived the definition from 3 constructs, which are Perceived Behavioral Control, Facilitating Conditions, and Compatibility. Studies have shown that older people have a tendency to find understanding Technology much harder than younger people and thus might actually face problems much more often, which probably was caused by the dwindling cognitive functions of older people (Ambarwati et al. 2020). We argue that the existence of the supporting system or community might be helpful in emphasizing the intention to use the gamification application, as they would eventually find it easier to understand and to use with fewer problems.
H5: Facilitating Conditions have a positive impact on Gamification Adoption Intention

2.7 Hedonic Motivation

Hedonic motivation is depicted as a consumer's desire to do an activity that can create a positive experience and reduces a negative experience (Kaczmarek, 2017). It was further deeply defined by Gray (1981) using his personality theory, in which every human behavior was driven by two alternating systems, which are a punishment-sensitive system and a reward-sensitive system. Kahneman (1999, in Kaczmarek, 2017) proposed that the ulterior motive of hedonic motivation are positive and negative experiences that had occurred within someone, as positive experiences are often linked to the desire to redo or continue the actions and to maintain the current conditions formed because of it, and the opposite also applied to negative experiences. These experiences, merged with emotions, will be the driver of hedonic motivation.

Games have been becoming a way of enticing fun and satisfaction; it was proven by Xu et al. (2015) that tourists as mobile gamers had fun and satisfaction as the motivations for using the game. And thus, we argue that these emotions also affected their usage intention positively.
H6: Hedonic Motivation has a positive impact on Gamification Adoption Intention.

2.8 Price Value

Price is defined as the "sacrifice" that is necessary for exchange for a product or a service (Wang and Chen, 2016), whereas Perceived Price is defined as a consumer's perception of a price. In this case, perceived price is not limited to money but also time, effort, and psychological condition sacrifice (Wang and Chen, 2016).

Perceived value, in contrast, has no concrete definition. Many studies differ in the definition and conceptualization of perceived value. In research by Aulia et al. (2016), the perceived value was studied on three dimensions which are product-related, social-related, and personal-related value. In the gamification context, we took product-related value as it is the most relevant of the three. It is defined as the perspective of a consumer that the value of a product comes from itself, and therefore a consumer paying for the product will have expectations that the product will benefit him, either in functionality or in the fun/fascination he/she gets after getting the product (Aulia et al. 2016). As such, a gamification's perceived price value can be derived from the definitions above as how the value is reflected in the game itself, meaning that consumers expected the game to be worth the price of the service as well as whether it gives satisfaction to the customers using the tourism service that uses gamification, or it functions as expected and helps the tourist in their tourism events.
H7: Price Value has a positive impact on Gamification Adoption Intention

2.9 Habit
The concept definition of a habit is still debated among scholars. One side argued that habit is affected by direct experience about an object, later known as the attitude object. On the opposite side, others argued that habit is not conscious, which means it can't be affected by anything in the realm of consciousness. These scholars defined habit as a behavior that is done in the past, which was done repetitively and can be measured by the intensity of how many times it's done in the past (Alsharo, Alnsour, and Alabdallah, 2018). In other literature, Song et al. (2008) represented habit as the connection between a goal and the activity to reach it, which means its perspective strength depends on the strength of this connection. He then used both definitions of habit, in which he used the conscious definition of habit on conscious use and the unconscious definition of habit as automatic use, with the difference between them is in action planning.

Looking back at the previous subchapters, specifically the Effort Expectancy, it was argued previously that continuous and repetitive usage of Technology reduces the significance of Effort Expectancy, and on one point, the user will eventually get used to the Technology. With this, one can actually understand that this "getting used to" context might be a sign of significance for habit, both conscious use, and automatic use. This also confirms Venkatesh's Formulation of UTAUT 2, where the construct of habit is used to fill the gap in Effort Expectancy (Venkatesh et al. 2012). In the gamification concept, we argued that this might act as the continuation for the significance of Effort Expectancy in the gamification usage as a customer with game hobbies or had a habit in games will be most likely to use it as part of their automatic use or sometimes conscious use as well.
H8: Habit has a positive impact on Gamification Adoption Intention

2.10 Personal Innovativeness in Information Technology
Personal Innovativeness, according to Agarwal and Prasad (1998), is an important concept in doing an analysis of one's acceptance of innovation. Applying this to Information Technology, then Personal Innovativeness in Information Technology (PIIT) is defined as "someone's desire to try a technology innovation" (Agarwal and Prasad, 1998). Referring to Goldsmith (1993) and Webster and Martocchio (1992), they derived that PIIT is a trait, which isn't affected significantly by internal variables or its surroundings, and thus the impact of PIIT is more clearly visible in the technology acceptance concept, where each individual willing to try a new technology would be more accepting a foreign/new technology (Agarwal and Prasad, 1998). They also derived that PIIT could be a guiding tool for I.T. implementation as a driver of Technology Adoption Intention. We argue that if a person likes to try something new, then they would probably be tempted to try the gamification application as new Technology.
H9: Personal Innovativeness in I.T. has a positive impact on Gamification Adoption Intention

2.11 Brand Awareness and Brand Loyalty
Brand Awareness is an important component of the forming of Brand Equity. It is defined as the strength of a brand to be attached to a consumer's mind (Aaker, 1991). It is also related to the ease and how strong the possibility of the brand appearing in the consumer's mind (Keller, 2013). Keller divided the construct of Brand Awareness into Brand Recognition and Brand Recall; the difference between them is while Brand Recognition is the ability of a consumer to remember a brand when given the name of the Brand, Brand Recall is the ability of the consumer to remember a brand when given just the product category.

Brand Loyalty, on the other hand, is a concept defined as the loyalty of a consumer to a brand, which usually takes the form of a positive attitude of a consumer, such as repeated buying or Word of Mouth advocacy (Kotler

and Keller, 2006). Maheshwari (2014) cited that Brand Loyalty has two main drivers, which are Brand Experience and Brand Commitment.

We argue that a successful gamification adoption intention will entice a positive attitude towards the customers, and they will eventually remember the brand and its game due to the positive experience. As such, a successful gamification adoption intention by a brand could possibly let the customers feel satisfied and later be more committed.

H10: Gamification Adoption Intention has a positive impact on Brand Awareness
H11: Gamification Adoption Intention has a positive impact on Brand Loyalty

3. Research Method

3.1 Research Model

The research model is derived from Abou Shouk and Soliman (2021) with some changes, the expansion from UTAUT 1 to UTAUT 3, which means four additional constructs were added to the model Hedonic Motivation, Price Value, Habit, and Personal Innovativeness in IT. Also, we try to move consumer engagement to emphasize the consumer's perspective; now, we also try to see whether consumer engagement affected the gamification adoption intention, which is the reverse from Abou Shouk and Soliman (2021). The model is viewed below:
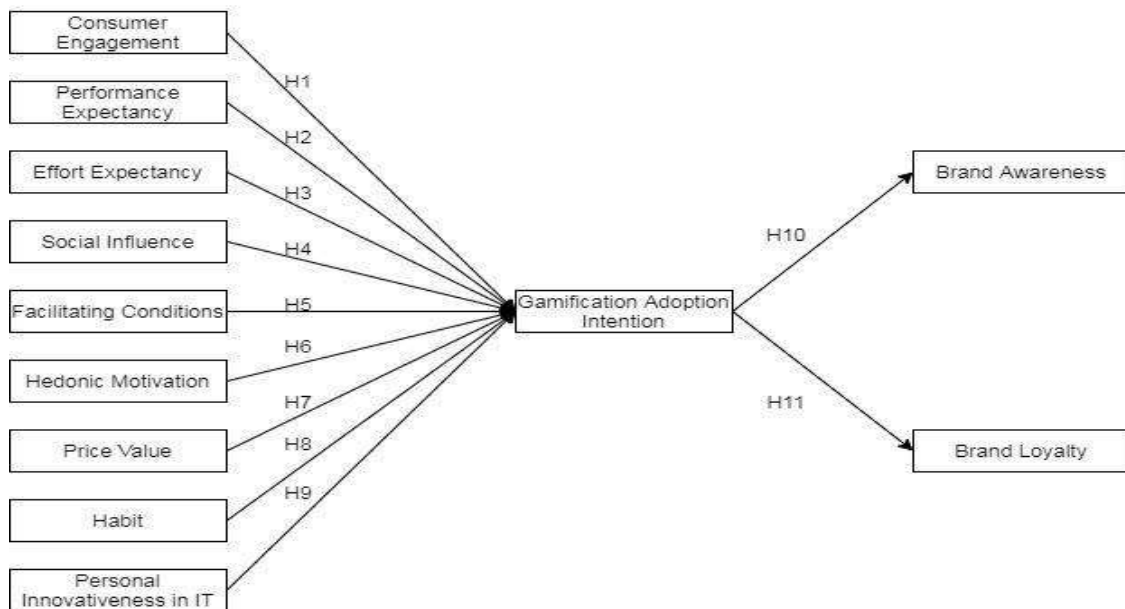

Figure 1: Research Model (derived from Abou Shouk and Soliman (2021) with some changes)

The indicator questions are added in the Appendix section at the end of the paper.

3.2 Research Desgn and Data Analysis

This research will be using a quantitative research design using an online questionnaire that was sent online through social media platforms. Inside the questionnaire is a link to an arcade, single-player gamification prototype that will act as a stimulus. The link will be provided in the appendix section. Each respondent is urged to play the two minigames provided for a few attempts/minutes to facilitate as if they are engaging in the gamification design. After that, respondents are given 41 questions, with one of them being a very obvious manipulative question to filter out respondents who filled the questionnaire incorrectly (i.e., not willing or just random guessing without playing the game). There are no specific restrictions on the respondents, except they have to be 17 years old or more and are also required to play the game prototype. Since there are 40 questions (excluding the manipulative check question), then it's necessary to get at least 200 samples.

The questionnaire will be using Likert Scales numbered 1-6, with an even number of choices to prevent "neutral" answers. Respondents are given 40 questions to represent the 12 variables used in this research. Data analysis will be performed in two steps, pre-test, and main test. A pre-test is performed on 60

samples to check the validity and reliability of the variables and indicators. It was done by taking 50 samples and by using the KMO-Bartlett Test in SPSS for the validity test and Cronbach's Alpha Reliability Check for Reliability test. The main test is performed using SmartPLS to check whether the hypothesis is accepted or rejected.

After several attempts on different social media, we obtained roughly 204 respondents that answered the questions correctly (a.k.a not falling for the manipulative check). We took 60 out of them to perform the outer model analysis explained above, and we took all of the responses to be analyzed using SmartPLS.

4. Results and Discussion

After doing both Validity and Reliability Test using the procedures provided, we found that the fourth indicator for social influence has a negative loading factor in the validity test, and thus we removed the indicator and reran the test, which gave out results for the Outer Model Tests as follows:

Variables	KMO Value	Bartlett Sig	Indicators Loading Factor				Cronbach's Alpha
			1	2	3	4	
CE	0.598	0.000	0.611	0.834	0.733	0.875	0.893
PE	0.589	0.000	0.844	0.845	0.954	-	0.853
EE	0.762	0.000	0.740	0.898	0.717	0.793	0.907
SI	0.607	0.000	0.862	0.903	0.658	-	0.580
FC	0.680	0.000	0.978	0.940	0.926	-	0.943
HM	0.712	0.000	0.884	0.933	0.881	-	0.882
PV	0.611	0.000	0.972	0.921	0.858	-	0.899
HB	0.638	0.000	0.971	0.884	0.921	-	0.912
PI	0.655	0.000	0.814	0.912	0.832	-	0.808
BI	0.681	0.000	0.833	0.808	0.809	0.963	0.861
BA	0.677	0.000	0.860	0.915	0.953	-	0.895
BL	0.658	0.000	0.863	0.915	0.792	-	0.805

The inner model test was done with all the received respondents and used the significance level of 0.05. Computation is done using SmartPLS to check whether the hypotheses are accepted or rejected. And after running the Bootstrapping procedure on SmartPLS, we found these results.

Hypotheses	OS	Sample Mean	StDev	T Stats	P-Value	Conclusion
H1	-0.31	-0.28	0.17	1.80	0.073	Rejected
H2	-0.18	-0.16	0.12	1.54	0.144	Rejected
H3	0.65	0.61	0.16	4.01	0.000	Accepted
H4	0.288	0.288	0.08	3.62	0.000	Accepted
H5	0.323	0.320	0.08	4.037	0.000	Accepted
H6	0.275	0.274	0.188	1.467	0.144	Rejected
H7	-0.004	-0.019	0.105	0.036	0.971	Rejected
H8	0.337	0.320	0.140	2.405	0.017	Accepted
H9	-0.322	-0.312	0.093	3.452	0.001	Rejected
H10	0.733	0.721	0.091	8.039	0.000	Accepted
H11	0.649	0.607	0.215	3.020	0.003	Accepted

5. Conclusion and Implications

From the results obtained above, it can be concluded that Consumer Engagement does not significantly impact positively on Gamification Adoption Intention, which means that the positive impact from Gamification Adoption Intention to Consumer Engagement like the ones done by Abou Shouk et al. (2021) doesn't apply inversely here in Indonesian Tourism industry. Of course, there is also some differentiating factor such as the different viewpoint, the location of the Tourism Industry, and many others. We also found out that Performance Expectancy surprisingly did not significantly positively impact Gamification Adoption Intention in Indonesian Tourism Industry, meaning that customers probably won't care too much whether a gamification application might work as intended. One of the customers also left feedback that he didn't care about how a game works in Tourism. It could be also seen that both Hedonic Motivation and Price Value didn't seem to impact significantly positively on Gamification Adoption Intention, meaning that the feeling of positivity and satisfaction didn't significantly affect tourists into playing games, which might be reasonable for most tourists who is more infested in enjoying the classic tourism event rather than the game, and finally, price didn't seem to matter almost definitely with the high P-value, meaning that tourists didn't seem to differentiate whether the tourism

service price is expensive or affordable and on playing the games. Personal innovativeness impacts significantly negatively on G.A.I; this might be because of the lack of screening on our part because there might be some hardcore gamers included in the survey. Hardcore gamers have higher standards when they play games, and they tend to prefer complex, more addictive games instead of just an arcade classic game. This worsens as gamification is still rather new and thus usually adopts a simple, classic game, which doesn't attract hardcore gamers. However, it could also be seen that both Effort Expectancy and Habit impact significantly on gamification adoption intention, meaning that the less effort a customer has to "pay" and the more "used to" the customer is, they have more intent to use the gamification application. Moreover, influence from the circle around tourists positively affected gamification adoption intention. And finally, from a customer's perspective, Gamification Adoption Intention also significantly impacts Brand Awareness and Brand Loyalty, which completes Abou Shouk and Soliman's research where the positive impact is now applicable from both marketer and tourist's perspectives.

Finally, it's worth pointing out that there were several, if not a lot, flaws in this research that hopefully can be fixed in future research. For instance, one can use a better, completed gamification app instead of a prototype like this research used. And then it would be much better if an experiment is conducted in partnership with a travel agency, a larger scope of tourists must be included, and also a much more diverse population of tourists can be involved. Future research should also explain other factors that might influence a customer's intent on using gamification apps other than UTAUT.

References

Farooq, Muhammad S. et al. 2017. *Acceptance and Use of Lecture Capture System (LCS) in Executive Business Studies*: *Extending UTAUT 2*. *Interactive Technology and Smart Education Vol.14 No. 4 (2017). Emerald Publishing Ltd.*

Gyr, Ueli. 2010. *The History of Tourism: Structures on the Path to Modernity.* Teks original: *Geschichte des Tourismus: Strukturen auf dem Weg zur Moderne. EGO (Europäische Geschichte Online/European History Online).*

Hofacker, Charles et al. 2015. *Gamification Design for Mobile Marketing Effectiveness*. *SSRN Electronic Journal.*

Kaczmarek, L.D. 2017. *Hedonic Motivation*. Adam Mickiewicz Institute of Psychology, Polandia.

Keller, K.L. 2013. *Strategic Brand Management: Building, Measuring and Managing Brand Equity, 4th Edition*. Pearson Education Ltd.

Magatef, Sima. 2015. *The Impact of Customer Loyalty Programs on Customer Retention. International Journal of Business and Social Science. Vol 6 No. 8.*

Maheshwari, Vishwas; Lodorfos, George dan Jacobsen, Siril. 2014. *Determinants of Brand Loyalty*, *A Study of the Experience-Commitment-Loyalty Constructs. International Journal of Business Administration (November 2014).* Hal. 13-23.

Shouk, Abou dan Soliman, Mohammad. 2021. *The Impact of Gamification Adoption Intention on Brand Awareness and Loyalty on Tourism: The mediating effect of customer engagement. Journal of Destination Marketing and Management 20.*

Song, Peijian; Chen, Wenbo; Zhang, Cheng dan Huang, Lihua. 2007. *Determinants of Information Technology Usage Habit. 11th Pacific-Asia Conference on Information Systems.*

Venkatesh, Viswanath. Morris, Michael G., Davis, Gordon B. dan Davis, Fred B. 2003. *User Acceptance of Information Technology: Toward a Unified View. MIS Quarterly: September 2003: University of Minnesota.* Hal. 425-478.

Venkatesh, Viswanath. Thong, James Y.L. dan Xu, Xin. 2012. *Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. MIS Quarterly: March 2012: University of Minnesota.* Hal 157-178.

Wang, Ya-Hui dan Chen, Li-Yan. 2016. *An Empirical Study of the effect of Perceived Price on Purchase Intention Evidence for Low-Cost Carriers. International Journal of Business and Social Science Vol. 7 No. 4. April 2016.*

Xu, Feifei et al. 2015. *Tourists as Mobile Gamers: Gamification for Tourism Marketing. Journal of Travel and Tourism Marketing*: October 2015.

Xu, Feifei et al. 2017. *Serious Games and Gamification of Tourism. Journal of Tourism Management 60.* Hal. 244-256.