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GAMIFICATION: SAVING IN DIGITAL BANKING IS LIKE PLAYING A GAME

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ABSTRACT

Manuscript type: *Research Paper*

Research Aims: *The purpose of this paper is to explore the effect of gamification, such as badges, elements and challenges that are applied to banking features, on customers' intention to save*

Design/methodology/approach: *This research explores how gamification is applied in digital banking. The study was conducted to test the effect of using the principles of badges, levels and challenges applied to savings can motivate millennials to save. Respondents are XYZ digital bank customers who were born between 1980 -2000. Data from 172 samples were analysed using partial least squares structural equation modelling,*

Research Findings: *The results showed that gamification used in banking positively affects consumer decisions to save. Badge-element strongly predicts how gamification is perceived as motivation in saving activities. The results also show that levels-elements affect the customer's willingness to save, while the challenge element affects the least interest in saving.*

Theoretical Contribution/Originality: *Research on the use of technology in the banking sector can contribute to banking facing intense competition. Further research is needed to explore gamification to improve young consumers' financial well-being and good saving behaviour.*

Practitioner/Policy Implication: *The research supports the use of gamification in the banking sector because gamification can encourage young customers to save money.*

Research limitation/Implications: *Even though gamification is a trending topic, its use in the banking sector must adhere to prudence principles.*

Keywords: *badges elements; challenges elements; digital banking gamification; interest in saving; level elements*

INTRODUCTION

Technological developments make game applications also develop. In 2020, according to a survey by Wearsocial and Hootsuite, it was known that around 59% of internet users in Indonesia used game applications. Games are made for entertainment only, but games can also be used as a promotional strategy to increase consumer interest in saving. In addition, according to Budiati (2018), the nature of the millennial generation always wants to try challenges, making game applications preferable. Games have the potential to increase millennial motivation to save. Digital bank XYZ implements this using the gamification feature in its banking services.

Gamification became popular around 2010. Deterding (2011) defines gamification as a game activity applied to non-game activities. Gamification can increase people's motivation to behave in specific ways. Gamification, such as playing games, creates a sense of fun, enjoyment, and challenge. Gamification is used in various fields, such as tourism, where gamification can influence the behaviour of tourists to come to a destination (Sigala, 2015). In the field of education, gamification can increase motivation to learn. Ceker & Ozdamli, 2017 (Chen, 2018). An example of gamification in education is Kahoot, which is an interactive online quiz.

Gamification utilises the mechanics and user experience of a game. Mechanical elements are intended as the main elements, such as points, leaderboard, and badges (Gatautis et al., 2016, Hamari et al., 2014), points, leaderboard, levels, onboarding, badges, challenges/quests, engagement loops, and customisation (Zichermann & Cunningham, 2011). Meanwhile, user experience design describes users' satisfaction level during interactions with gamified elements. There are two gamification models, namely advergame, which uses full games and marketing games, which only adopt part of the gamification elements. (Terlutter & Capella, 2013).

Intense business competition requires banks to provide creative and innovative digital banking services. One of the banking breakthroughs to attract consumers is creating products and services that contain gamification elements. Game elements can easily be embedded within product advertisements. However, more is needed about the success factors of this technology since the growth of digital banks in Indonesia and the shifting of customer segmentation towards the millennial generation, who like challenges. Therefore, banks must include elements of gamification in promoting their products. XYZ digital bank branch has many savings products with various promotional methods. One presents a savings feature with a gamification concept in XYZ digital bank.

This study examines the effect of using game elements such as badges, levels and challenges on interest in buying savings products at digital banks in Indonesia. The concept of gamification comes with elements such as points, leaderboards, levels, onboarding, badges, challenges/quests, engagement loops, and customisation. (Zichermann & Cunningham, 2011). This study focuses on the elements of gamification that are applied in XYZ bank savings features, such as badges, levels and challenges.

LITERATURE REVIEW

This study investigated which factors predict the effect of gamified advertisements using game elements on consumers' intentions to purchase. In this study, intrinsic and extrinsic motivation are expected to emerge using game elements such as badges, levels and challenges.

Gamification

Gamification applies motivational design to persuade other people to behave in specific ways. Behaviour change occurs because triggers are used to a person's motivation. The presence of game elements evokes the experience (Hamari et al., 2014) and promotes intrinsic motivation to engage in activities (Hamari & Koivisto, 2015b). Gamification uses game elements in non-game content (Deterding et al. 2011b). The gamification concept has been successfully applied in various fields such as education, product, and marketing. Zichermann & Cunningham (2011) said that gamification is changing non-game contexts to become more attractive by including game thinking,

making people think they are playing a game. The activities are designed like a game to create a sense of fun, challenge, and motivation. The elements of gamification are:

1. Points are the values that players get after completing the task. The system determines the amount.
2. Levels are a sign of achievement obtained by the player.
3. Leaderboard is a board to compare achievements between players.
4. Badges are symbols that are obtained when players have reached a certain game level
5. Challenge/Quest is a challenge for players to continue to a higher level. It contains instructions to proceed to the next level
6. Onboarding is an attempt to introduce the system to beginners so they can play the game.
7. Engagement loops are cycles that allow players to return to play after leaving the game.
8. Customisation functions to help players to manage their needs in the game

XYZ digital bank uses the concept of gamification to motivate its customers to increase the amount of their savings. An example is Smart Savings which visualises a savings account like a city. The city will develop according to the development of customer savings. The concept makes banking become the same thing as gaming. Customers find this feature unique, fun, challenging and different from other banks. They are motivated to increase their savings because they want their savings city to grow.

Intrinsic motivation and extrinsic motivation

Motivation underlies a person to behave in a certain way and can be distinguished between intrinsic and extrinsic motivation. (Banfield & Wilkerson 2014). Intrinsic motivation in games results when one is motivated to do something for its satisfaction (e.g. for fun or challenge).

Intrinsic motivation arises when a person behaves for his pleasure or because of a challenge rather than external pressure or reward (Mekler et al., 2013). In this study, intrinsic motivation is seen in game-elements badges. Each player who successfully performs a specific task will get a badge, symbolising his achievement of saving him at a certain level. Intrinsic motivation is also seen in the game-elements level, which shows a player's development. Levels are a sign for players to know their current position in the game. (Dahlstrøm, 2003)

Extrinsic motivation means one is motivated to do something for its expected outcome (e.g. money, rewards, deadline or pressure). An example of intrinsic motivation is a challenge. A challenge is an offer given to players to take part in challenging opportunities and provide clues to players about what can be done to proceed to a higher level. The most crucial thing is that extrinsic incentives can enhance intrinsic motivation

Self-determination theory

Self-determination theory (SDT) is a macro theory of human motivation and personality. SDT focuses on the degree to which human behaviour is self-motivated and self-determining. SDT distinguishes between autonomous and controlled motivation, based on how individuals behave with complete choice or under pressure (Deci & Ryan, 2015). Autonomous motivation is voluntary behaviour. In contrast, controlled motivation is related to controlled behaviour. Externally controlled (e.g. to get a reward) or internally controlled (e.g. to avoid embarrassment). Autonomous motivation develops when people need competence. The feeling that he has mastered his activity, he is satisfied with his freedom to choose. Gamification research has suggested that games foster competence through gamification elements such as point, level, badge, and challenge. XYZ digital banking uses gamification elements such as badges, stories and challenges on its digital savings.

The gamification elements used by XYZ bank, badges, levels and challenges are shown in Figure 1.



Figure 1. Gamification Elements

Badges element

Players who successfully perform specific tasks will get badges. Badges also serve to indicate the level of the player. Badges are implemented in digital banking as evidence of customer achievement in saving and to show the level of customer savings. The uniqueness of the badges element contained in digital banking is that it can attract customers' interest in saving. This badge is a new way of showing nominal savings. In addition, the badges element has an important role in improving gamification. Therefore, it is suspected that the badges element affects customer interest in saving

H1: Badges elements influence customer interest in saving

Levels element

Levels are used as a medium to show a player's development. Levels are a sign for players to know their current position in the game. The level element shows increased

customer savings, visualised through eras with different names. For example, when a customer has savings of IDR 3,000,000, he is at level 5, including in the medieval era. Level elements are icons, progress bars, or metaphors (bronze, silver, gold, platinum). The level element can motivate customers to save because the increase in their savings can improve the visualisation of the city. It is suspected that the level element influences customer interest in saving.

H2: Levels element affects customer interest in saving

Challenges element

Challenges instruct players about what can be done to proceed to a higher level. The challenges element is a challenge for players to continue to a higher level. Challenges are directions for completing tasks. In this digital savings, there are instructions for the nominal amount of money that must be saved to advance to the next level. This challenge motivates customers to save because they feel

that saving is fun. It is suspected that the elements of challenges impact customer interest in saving.

H3: Challenges elements affect customer interest in saving

RESEARCH METHOD

The primary purpose of this research is to examine the effect of gamification elements such as badges, levels and challenges on consumers' intentions to save in digital banking XYZ. Research focuses on badges, levels and challenges applied to XYZ digital bank. Data was collected by distributing online questionnaires to respondents. The number of questionnaires returned and processed was 20, above the required sample size. The population of this study are Indonesian resident who live in Jabodetabek. The sampling method used is purposive sampling with the criteria of XYZ digital bank. Respondents had an average age of 21 – 25 (57%), and 68% were female. The majority live in Jakarta (42%). Their highest education is a bachelor's (54%). The Likert scale measures elements of badges, levels, and challenges. The questionnaire made is a closed method. All the variables used in the study were adapted from relevant previous literature and measured via 5-point scales.

RESULT AND DISCUSSION

As the proposed model includes formative and reflective model construct, all model testing was conducted via component-based PLS-SEM. PLS simultaneously assess the measurement and structural model. These two steps are described below

Outer model

The measurement model (outer model) determines the relationship between exogenous and endogenous variables. The measurement model used is measured using convergent validity, discriminant validity, and composite reliability.

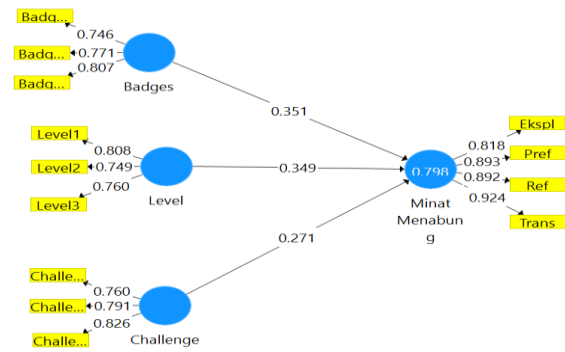


Figure 1. Measurement Model Testing

The results of processing the reflective model show that the factor loading of all manifest variables is higher than 0.7, which means no variables need to be removed or dropped.

Discriminant validity is tested by looking at the cross-loading value. The results of the cross-loading values are badge = 0,775; challenge = 0,793; level = 0,772; intention to save = 0,883. All variables are declared valid because all the cross-loading values are higher than 0.7. The test results for exogenous and endogenous variables for reliability testing using either Cronbach's Alpha or Composite Reliability are > 0.7. Therefore, it can be concluded that the variables tested are valid and also reliable so that it can be continued to test the structural model

Table 1. Reliability and validity constructs

Variable	Indicator	Loading Factor	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Badge	Badges1	0.7458	0.768	0.819	0.601
	Badges2	0.7715			
	Badges3	0.8070			
Challenges	Challenge1	0.7603	0.704	0.835	0.629
	Challenge2	0.7914			
	Challenge3	0.8256			
Level	Level1	0.8079	0.763	0.816	0.597
	Level2	0.7486			
	Level3	0.7596			
Saving interest	Ekspl	0.8181	0.905	0.934	0.779
	Pref	0.8928			
	Ref	0.8925			
	Trans	0.9243			

Inner model

The structural or inner model is used to examine the effect of exogenous variables on endogenous variables. The bootstrapping

procedure was chosen to assess the effect between variables, with a significant two-tailed t value of 1.96

Table 2. Path coefficient measurement

	Original Sample (OS)	Sample Mean (M)	Stand Dev (STDEV)	T Stat (O/STDEV)	P Value
Badge---Intention to save	0,351	0,333	0,097	3,625	0,000 **
Challenge---Intention to save	0,271	0,290	0,128	2.125	0,034 **
Level---Intention to save	0,349	0,346	0,087	4,035	0,000 **

The path coefficient table shows that the badge positively and significantly affects the intention to save. With a probability value (0.000) < alpha 5% with a coefficient of 0.351, thus it can be concluded that a badge can drive the intention to save.

Furthermore, the challenge also positively and significantly affects the intention to save. With a probability value (0.034) < alpha 5% with a coefficient of 0.271, thus it can be concluded that challenge can also encourage the intention to save.

The level also positively and significantly affects the intention to save. With a probability value $(0.000) < \alpha 5\%$ with a coefficient of 0.249, thus it can be concluded that the level can also encourage the intention to save.

When compared between the three elements, it was found that the Badge value was 0,351, the value Level was 0.349, and the challenge was 0,271. Thus it can be concluded that a badge's effect is stronger than the effect of challenge and level of intention to save.

Based on the results of the path coefficient contained in the table above, it shows that all hypotheses are significant. Significant badges with a $p (0.000)$ value smaller than $\alpha 5\%$ and a large coef of 0.351 have the greatest influence on interest in saving. Significant level with a $p (0.000)$ value smaller than $\alpha 5\%$ and a large coef of 0.349, the second largest effect on saving interest. The challenge is significant with a p -value (0.034) which is smaller than $\alpha 5\%$, and a large coef of 0.271 which has the least effect on interest in saving

CONCLUSION

The literature reviews above conclude that gamification, in general, positively affects saving interest. The concept of gamification used in banking by using game elements such as badges, levels and challenges influences consumer decisions to save. Badges are a symbol of customer achievement in saving. They are displayed with the amount of money saved by the customer. According to Bitter & Shipper (2014), the enjoyment factor encourages someone to be interested in

gamification. The feeling of satisfaction of achieving a certain position makes it challenging. Including the savings amount makes customers feel proud and enjoy their success in saving.

In this paper, we examine how badges predict attitudes toward saving interest. The results show that the game element badge strongly indicates how gamification is perceived as motivation in saving activities. The results also show that game elements such as levels affect the customer's willingness to save, while the challenge element affects the least interest in saving.

This finding aligns with expectations because this gamification concept is a new concept used in digital banking, so it is still in the introduction stage. Therefore, the concept of gamification used is more pleasing to the customer, which is related to internal motivation.

On the other hand, the challenge that is identical to giving rewards has very little effect on interest in saving in digital banking. This aligns with Kim (2015), who said the reward should not always be money. The challenges offered are not in the form of materials but in the form of more advanced games. Such as, you can complete an era in a city. However, the reward in money is not the primary goal. There's nothing wrong if you also give rewards as money or prizes. Maybe this challenge is very attractive to consumers. If the reward given is in the form of money or gifts, it is suspected that it can motivate consumers to save more (Kim, 2015).

This study was designed to determine the concept of gamification in influencing customer interest in saving. There are three gamification elements implemented in the digital bank feature. The three elements are badges elements, levels elements, and challenges elements. Badges are a sign of the customer's amount of savings, which are referred to as levels 1 -24. The higher the level achieved by the customer. Bitter & Shipper (2014) concludes that the enjoyment factor, which is in the appearance of the level of the amount of savings, encourages someone to be interested in gamification. The satisfaction of reaching a certain level made him challenged. Badges in gamification have proven to be the most influencing factor for consumers to save at Bank XYZ. While other gamification concepts, such as levels and challenges used by digital bank XYZ, affect

consumer decisions in buying savings products. Still, the effect of levels and challenges is smaller than badges. This finding aligns with expectations because this gamification concept is a new concept used in XYZ bank, so it is still in the introduction stage. Therefore, the gamification concept used is more pleasing to the customer, which leads to internal motivation. The application of gamification in banking in Indonesia began in 2020 and is still relatively new, so that is one of the weaknesses of this study, where it is very difficult to find respondents who understand the gamification used by Bank XYZ. It is recommended that similar research be carried out again to test whether the effect is the same or changing compared to this study.

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