

A STUDY ON THE EFFECT OF GAMIFICATION COMPONENTS ON CUSTOMER LOYALTY TOWARD A DIGITAL BANK

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ABSTRACT

We are in the era of digitalization. Almost all sectors have experienced changes, including banking. The banking landscape is changing with digital banks emerging and attracting the attention of users. Now, the task of digital banks is not only to attract users' attention, but also to retain or make them loyal. Big companies in other sectors have implemented gamification to increase customer loyalty. However, there is no research yet on gamification implementation for digital banks in Indonesia. There are several digital banks in Indonesia, yet there is only one that has implemented gamification components, which is Bank Neo Commerce (BNC). This study aims to analyze the effect of gamification components on customer loyalty toward Bank Neo Commerce. In this paper, the data used were quantitative data collected using an online questionnaire that was distributed to Bank Neo Commerce users that have tried the gamification features. The data were collected from 158 BNC users in Greater Jakarta (Jakarta, Bogor, Depok, Tangerang, and Bekasi) using an online questionnaire. The data were then processed using SmartPLS 3.0 to test the validity, reliability, and hypotheses. Based on the analysis, the gamification components, namely quests, social graphs, levels (leveling system), and virtual goods, do have significant effects on hedonic and utilitarian values, which ultimately affect the users' satisfaction and loyalty. Therefore, other digital banks can consider implementing those gamification elements for their future development to increase customer loyalty.

Keywords: *Gamification, Bank Neo Commerce, Customer Loyalty, Digital Bank, Loyalty Program, SeaBank*

1. INTRODUCTION

Digitalization has become an important element with the tech-savvy generation doing a lot of things online, be it shopping, paying bills, transferring money, reading books, and many others. Digitalization in banking is emphasized by bank management with various motives, such as convenience, efficiency, cost savings, and customer satisfaction [1]. Digitalization in banking is marked by the existence of digital banks. Digital banks are increasingly widespread and are able to compete with conventional banks [2]. Not all digital banks have implemented gamification even though gamification has a significant influence in digital fields, as proven by the world's leading companies, including Nike, Starbucks, and Amazon.com [3].

The banking sector is a sector that must pay great attention to its customers [4], thus efforts to increase user satisfaction and loyalty are very

important, including considering the implementation of gamification. There are several digital banks in Indonesia, such as Bank Neo Commerce (BNC), SeaBank, blu by BCA, Jago, Jenius, and so on. Bank Neo Commerce is the only digital bank in Indonesia that already utilizes gamification. However, it is not yet known how influential the gamification implementation is on customer loyalty. This study aims to determine the effects of gamification on customer loyalty toward the digital bank, so that it could be a consideration for other digital banks to implement it as well.

Bank Neo Commerce is a digital bank that “dares to give more value to the users”. PT Bank Neo Commerce was previously named Bank Yudha Bhakti. BNC offers account opening anywhere, free transfer fees, security, and complete features that include transfers, billing, investments, and so on [5]. The loyalty programs in BNC's mobile application were created using gamification elements, such as

quests, social graphs, levels, and virtual goods as follows:

1. Quests are in the form of tasks for the users to use certain features and get coin rewards after doing them.



Figure 1: Quests on Bank Neo Commerce

2. Social Graphs are in the form of Town Halls, where users can make friends with each other, take coins from other users, give coins to other users, and interact in other ways.



Figure 2: Social Graphs on Bank Neo Commerce

3. Levels (leveling systems) are in the form of regular, silver, and gold memberships.

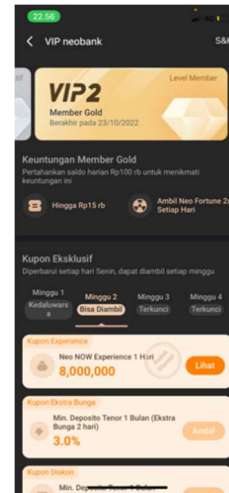


Figure 3: Levels on Bank Neo Commerce

4. Virtual Goods can be obtained by completing certain quests; given by and taken from friends; every week based on membership levels; every day by clicking Neo Fortune in the form of a gacha or an egg filled with cash or vouchers; and every day through daily check-in.



Figure 4: Virtual Goods on Bank Neo Commerce

The purpose of this paper is to examine the effects of gamification on customer loyalty towards digital banks, specifically Bank Neo Commerce (BNC) in Indonesia. The banking industry is increasingly turning towards digitalization for convenience, efficiency, cost savings, and customer satisfaction. However, not all digital banks have implemented gamification despite its potential influence in digital fields. BNC is the only digital

bank in Indonesia that currently uses gamification, but its impact on customer loyalty is unknown. This research aims to determine if gamification can increase customer loyalty for BNC and serve as a consideration for other digital banks to implement it.

2. LITERATURE REVIEW

2.1 Digital Bank

The banking landscape has undergone significant changes over the last decade as new types of competitors have emerged from technological developments and the fintech industry. Disruption stemming from financial technology innovation has had a major impact on the business model of banks and consequently, the utilization of banks has led to the creation of technologically advanced banking models. The position of the traditional bank's business model has been disrupted by the development of digital banks. Digital banks are still at an early stage of development, but have the potential to overtake the market share of traditional banks. Traditional banks must monitor the development of digital banks and consider them a serious threat [2].

Some of the differences include customer service time frames, customer service speed, service approach, maintenance costs, service scope, service operator status, service and promotion procedures, as well as operating components. In traditional banks, the customer service time frame is limited to a certain time while in digital banks it is not limited. In traditional banks, service speed depends on the qualifications and experiences of the workers while in digital banks, it is faster. In traditional banks, the service approach is limited to a few channels while in digital banks, there are more choices. In traditional banks, the maintenance costs are high while in digital banks, they are lower. In traditional banks, the operator functions are carried out by workers while in digital banks, they are done by customers. In traditional banks, service and promotion procedures require more time and costs while in digital banks, it is faster through mobile applications, social media, email, and SMS. In traditional banks, the main components of operations are staff and departments while in digital banks are servers and software [2].

2.2 Customer Relationship Management

Customer Relationship Management (CRM) is a strategy for managing customers because

it focuses on understanding customers as individuals, not as part of a group. CRM deals with corporate and consumer relations. In banking, CRM is a sound business strategy for identifying the most profitable customers and prospects and devoting time and attention to expanding relationships with those customers through individual marketing, iteration, discretionary decision-making, and customized services. Everything is realized through various channels that the bank uses [4]. One form of CRM is the loyalty program.

2.3 Loyalty Program

Loyalty Programs can be defined as “marketing programs designed to build customer loyalty by providing profitable customer incentives” [6]. Research [6] found that loyalty programs with gamification elements can help companies differentiate their programs from conventional programs that help increase consumer loyalty. User loyalty is crucial to increase consumers' desire to participate in mobile applications which can increase the effectiveness of mobile marketing.

2.4 Gamification Components

Gamification refers to the use of game design elements in non-game products or services to encourage value-creating behavior, such as increased consumption or greater loyalty [6]. The global gamification market is expected to reach a value of \$22.9 billion by 2022 [3]. Gamification has an important role in customer relationship management through the implementation of a gamified loyalty program [6]. Werbach and Hunter (2012) in book [7] classify the components of gamification as follows: achievements, avatars, badges, boss fights, collections, combat, content unlocking, gifting, leaderboards, levels, points, quests, social graphs, teams, and virtual goods [8]. Of course, not all components must be used, it could be that only a few components are taken for implementation.

In this case, the gamification components in the Bank Neo Commerce application are Quets, Social Graphs, Levels, and Virtual Goods. Quets are one component of gamification in the form of a series of tasks with rewards [8]. Similar to the original game, quets in non-game applications are also in the form of challenges to get rewards. Social Graphs are those that represent the user's contact network [8]. Similar to real games, social graphs in non-game applications also display user connections

and allow users to interact with each other. Levels are what determine the user's development [8]. Like the original game, the leveling system in non-game applications also has conditions, such as maintaining or achieving certain things to level up. Virtual Goods are virtual gifts that have value/benefits [8].

2.5 Hedonic Value and Utilitarian Value

Overby and Lee (2006) define hedonic value as "the overall assessment of the benefits and costs of experiences, such as entertainment and escape" [9]. In general, hedonic values come from experiences that are valued for their own sake, regardless of the consequences or actual results of that experience [10]. So, hedonic values are more personal in nature, related to aspects of pleasure, pride, and releasing one's fatigue [11].

Meanwhile, Overby and Lee (2006) define utilitarian value as "the assessment of the overall functional benefits and sacrifices" [9]. Utilitarian value comes from instrumental experience or functional support [10]. So, utilitarian values are more practical and have functional values.

2.6 Satisfaction

Oliver (1999) defines satisfaction as a cognitive and emotional evaluation of a customer's experience with a product or service [9]. Satisfaction is the result of a comparison between expected performance and perceived actual performance and costs incurred (Churchill and Surprenant, 1982) [12].

2.7 Customer Loyalty

Oliver (1997) defines customer or user loyalty as "a deeply held commitment to repurchase or re-patronize a preferred product/service in the future resulting in the purchase of the same brand, regardless of situational influences and marketing efforts that have the potential to cause distressing behavior." [12].

3. RESEARCH METHODOLOGY

3.1 Research Type

In this paper, the data used were quantitative data collected using an online questionnaire that was distributed to Bank Neo Commerce users that have tried the gamification features.

3.2 Data Collection

In this study, the online questionnaire was conducted using Google Form and distributed to respondents in Greater Jakarta (Jakarta, Bogor, Depok, Tangerang, and Bekasi). The survey contains eight variables using the Likert scale of 5 in which 1 is "strongly disagree" and 5 is "strongly agree".

3.3 Research Objective

In this article, the research objective is to find out whether the gamification implementation in a digital bank in Indonesia, Bank Neo Commerce (BNC), has a significant effect on the customer loyalty.

3.4 Research Model

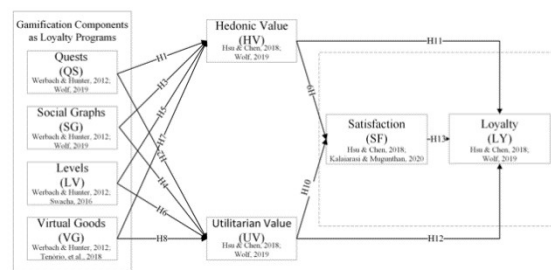


Figure 5: The Research Model

This research inherits the gamification components shown in studies [7], [10], [8], [11] that act as loyalty programs, including quests, social graphs, levels, and virtual goods. Those gamification components are predicted to have significant effects on hedonic value and utilitarian value. According to Hsu & Chen (2018), hedonic value and utilitarian value have significant effects on satisfaction and loyalty [9]. Kalaiarasi (2020) also stated that satisfaction had a significant effect on loyalty [4].

3.5 Data Analysis

In this study, the researcher used the structural equation model - partial least squares (SEM-PLS). The main advantages of PLS-SEM are to ease the "difficult" distribution assumptions needed by the maximum likelihood method to approximate the model using CB-SEM and to make estimations on complex models using small-scale samples [13].

3.6 Hypothesis

H1: Quest (QS) has a significant effect on Hedonic Value (HV)

Quest as a gamification component is included in the self-development motivation and has a sense of pleasure and escape from everyday lives [10]. Thus, quest is expected to have a significant effect on hedonic value.

H2: Quest (QS) has a significant effect on Utilitarian Value (HV)

Quest as a gamification component has a utility because after finishing the quest, the user gets a reward based on the mission [10]. Thus, quest is expected to have a significant effect on utilitarian value.

H3: Social Graph (SG) has a significant effect on Hedonic Value (HV)

Social graph as a gamification component is included in the social connectedness motivation as it allows the user to connect and interact with other users. This interaction raises a(n) enjoyment and sense of belonging. Thus, social graph is expected to have a significant effect on hedonic value.

H4: Social Graph (SG) has a significant effect on Utilitarian Value (HV)

Besides creating a(n) enjoyment and sense of belonging, social graph also has utility as it can increase in-app productivity because the users can see each others' activities that they can motivate or "push" one another to do the same activity [10]. Besides that, in Bank Neo Commerce itself, if a user invites a friend, visits another user, etc., that user gets immediate rewards. Thus, social graph is expected to have a significant effect on utilitarian value.

H5: Level (LV) has a significant effect on Hedonic Value (HV)

Leveling system as a gamification component helps give a visual image of the progress of each user and "celebrates" it, which can increase excitement, pride, and confidence [8]. Thus, the leveling system is expected to have a significant effect on hedonic value.

H6: Level (LV) has a significant effect on Utilitarian Value (HV)

Leveling system has utility because as the user levels up, they get more rewards [8]. Thus, the leveling system is expected to have a significant effect on utilitarian value.

H7: Virtual Good (VG) has a significant effect on Hedonic Value (HV)

Virtual good as a gamification component is in the form of rewards that give happiness to the users [12].

Thus, virtual good is expected to have a significant effect on hedonic value.

H8: Virtual Good (VG) has a significant effect on Utilitarian Value (HV)

Virtual goods have utility because the rewards that are given to the users can be exchanged with real benefits [12]. Thus, virtual good is expected to have a significant effect on hedonic value.

H9: Hedonic Value (HV) has a significant effect on Satisfaction (SF)

Hedonic value focuses on pleasure, emotion, and entertainment. By giving the users pleasure, we give them satisfaction [9]. Thus, hedonic value is expected to have a significant effect on satisfaction.

H10: Utilitarian Value (UV) has a significant effect on Satisfaction (SF)

Hedonic value focuses on benefits, economic values, and "value for money". By giving the users those things, the user will be satisfied [9]. Thus, utilitarian value is expected to have a significant effect on satisfaction.

H11: Hedonic Value (HV) has a significant effect on Loyalty (LT)

The hedonic value of a product or service is related to the happiness of the user, so it can invite them to keep on using the product or service and be more loyal [10]. Thus, hedonic value is expected to have a significant effect on loyalty.

H12: Utilitarian Value (UV) has a significant effect on Loyalty (LT)

The utilitarian value of a product or service is related to the benefits a user gets, so it can make the user keeps on using the product or service and becomes loyal [10]. Thus, utilitarian value is expected to have a significant effect on loyalty.

H13: Satisfaction (SF) has a significant effect on Loyalty (LT)

Satisfaction means the fulfillment of the needs, wants, and hopes of a user. The fulfillment of those things it can make the user keeps on using the product or service and becomes loyal [4]. Thus, satisfaction is expected to have a significant effect on loyalty.

4. RESULT AND DISCUSSION

4.1 Respondent Profile

According to Kontan (2022), as of September 2022, Bank Neo Commerce users in Indonesia reached the number of 19 million, of which 65% of them live in Java and the other 35% live outside of Java [14]. In this study, the researcher used the ten-time rule that the number of respondents has to be ten times the number of variables. Since there are

eight variables, the minimum number of respondents is 80. However, the researcher managed to get 164 respondents of which 158 of them were valid and 6 of them were invalid because they either were not active users or had not used the gamification features.

- If the loading factor is less than (<) 0.7, then the indicator is invalid.

Table 1 below shows the results.

Table 1: Loading Factor Values

Variable	Indicator	Loading Factor
Quests	QS1	0.735
	QS2	0.740
	QS3	0.750
	QS4	0.767
	QS5	0.701
Social Graphs	SG1	0.702
	SG2	0.770
	SG3	0.734
	SG4	0.820
	SG5	0.754
Levels	LV1	0.753
	LV2	0.783
	LV3	0.809
	LV4	0.843
	LV5	0.801
Virtual Goods	VG1	0.767
	VG2	0.788
	VG3	0.726
	VG4	0.787
	VG5	0.771
Hedonic Value	HV1	0.806
	HV2	0.703
	HV3	0.808
	HV4	0.839
	HV5	0.757
Utilitarian Value	UV1	0.755
	UV2	0.823
	UV3	0.731
	UV4	0.736
	UV5	0.743
Satisfaction	SF1	0.739
	SF2	0.723
	SF3	0.729
	SF4	0.732
	SF5	0.745
Loyalty	LT1	0.845
	LT2	0.827
	LT3	0.788
	LT4	0.836
	LT5	0.871

4.2 Data Analysis Using SEM-PLS

The researcher used the SMART-PLS 3 application to analyze the data. The tests were done in two ways, the measurement (external) and structural (internal) models. The measurement model was used to test the model's validity and reliability while the structural model was used to predict the latent variables' relationships. Here is the structure model:

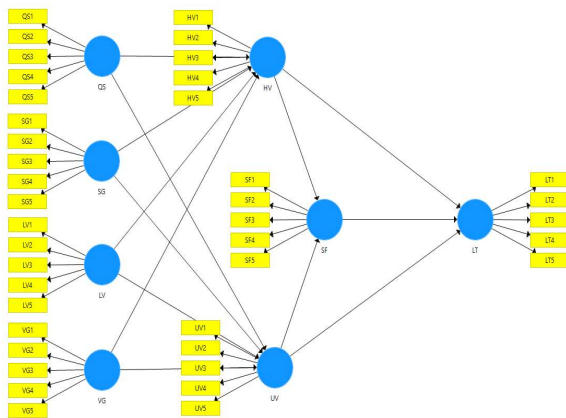


Figure 6: The Structural Model

4.3 The Analysis of the Measurement Model

There are two kinds of tests in the analysis of the measurement model, that are validity and reliability tests. The validity tests consist of construct and discriminant validity tests. The construct validity test can be done by looking at the value of external load and average variance extracted (AVE) while the discriminant validity test can be done by looking at the cross-loading values. The reliability test can be done by evaluating the Cronbach's alpha and composite reliability values.

4.3.1 The Construct Convergent Validity Test with Loading Factors

Here are the criteria for loading factors:

- If the loading factor is greater than (>) 0.7, then the indicator is valid.

According to the results, all of the loading factors are >0.7, thus the indicators are valid.

4.3.2 The Construct Convergent Validity Test with Average Variant Extracted (AVE)

Here are the criteria for AVE:

- If the AVE is greater than (>) 0.5, then the item is valid.
- If the AVE is less than (<) 0.5, then the item is invalid.

Table 2 below shows the results.

Table 2: Average Variant Extracted Values

Variable	Average Variance Extracted
Quests	0.546
Social Graphs	0.573
Levels	0.637
Virtual Goods	0.590
Hedonic Value	0.614
Utilitarian Value	0.575
Satisfaction	0.538
Loyalty	0.695

According to the results, all of the AVE values are >0.5, thus the items are valid.

4.3.3 The Construct Discriminant Validity Test with Cross-Loading

In cross-loading analysis, the researcher finds out if a variable has higher loadings in the same construct or the other constructs.

Table 3: Cross-Loading Values

	QS	SG	LV	VG	HV	UV	SF	LT
QS 1	0.735	0,52 0	0,5 51	0,49 9	0,56 6	0,60 7	0,462	0,5 11
QS 2	0.740	0,60 8	0,6 53	0,57 8	0,62 3	0,63 5	0,482	0,6 14
QS 3	0.750	0,56 8	0,6 01	0,53 8	0,60 7	0,64 2	0,443	0,5 41
QS 4	0.767	0,59 4	0,6 05	0,56 3	0,57 0	0,61 2	0,492	0,5 12
QS 5	0.701	0,59 2	0,5 17	0,54 1	0,54 7	0,52 6	0,445	0,5 24
SG 1	0,519	0.70 2	0,4 42	0,51 9	0,47 0	0,51 4	0,321	0,4 32
SG 2	0,610	0.77 0	0,5 49	0,51 5	0,58 1	0,62 6	0,440	0,5 14
SG 3	0,555	0.73 4	0,4 83	0,53 0	0,53 0	0,57 1	0,372	0,4 74
SG 4	0,652	0.82 0	0,5 83	0,60 6	0,63 3	0,59 7	0,420	0,5 24
SG 5	0,605	0.75 4	0,5 19	0,57 3	0,57 7	0,56 2	0,407	0,4 83
LV 1	0,554	0,47 5	0.7 53	0,49 2	0,53 7	0,58 4	0,383	0,5 19
LV 2	0,659	0,57 5	0.7 83	0,64 8	0,66 5	0,64 4	0,532	0,6 39
LV 3	0,619	0,50 6	0.8 09	0,57 2	0,58 8	0,64 5	0,480	0,5 98
LV 4	0,670	0,59 2	0.8 43	0,57 5	0,66 2	0,68 4	0,446	0,6 01

LV 5	0,661	0,57 1	0.8 01	0,52 8	0,58 7	0,66 4	0,517	0,5 59
VG 1	0,611	0,64 8	0,5 64	0.76 1	0,52 3	0,63 2	0,474	0,6 40
VG 2	0,574	0,57 6	0,5 88	0.78 2	0,61 4	0,58 9	0,469	0,6 02
VG 3	0,501	0,42 7	0,4 86	0.72 6	0,53 8	0,48 6	0,372	0,4 78
VG 4	0,556	0,50 8	0,5 69	0.78 1	0,57 8	0,60 3	0,487	0,5 82
VG 5	0,582	0,61 5	0,5 03	0.77 1	0,56 7	0,54 3	0,538	0,6 19
HV 1	0,580	0,59 1	0,6 00	0,57 0	0.80 8	0,45 9	0,387	0,4 98
HV 2	0,458	0,44 5	0,4 78	0,39 0	0.70 3	0,32 3	0,278	0,3 88
HV 3	0,652	0,63 3	0,6 18	0,59 0	0.80 8	0,54 7	0,419	0,5 66
HV 4	0,722	0,61 1	0,6 62	0,66 6	0.83 9	0,62 4	0,511	0,6 49
HV 5	0,634	0,59 5	0,6 10	0,60 9	0.75 1	0,56 1	0,453	0,6 44
UV 1	0,573	0,64 4	0,5 59	0,56 5	0,41 5	0.75 5	0,486	0,4 70
UV 2	0,704	0,61 8	0,6 90	0,65 0	0,58 5	0.82 3	0,575	0,5 69
UV 3	0,595	0,55 1	0,5 91	0,55 2	0,46 1	0.73 1	0,508	0,4 14
UV 4	0,637	0,52 6	0,6 15	0,51 1	0,53 3	0.73 6	0,444	0,5 63
UV 5	0,593	0,54 2	0,6 04	0,54 0	0,48 9	0.74 3	0,472	0,4 97
SF1	0,544	0,45 0	0,4 69	0,51 3	0,50 6	0,51 1	0.739	0,4 88
SF2	0,391	0,36 2	0,4 38	0,41 7	0,30 7	0,43 2	0.723	0,3 70
SF3	0,409	0,38 3	0,4 37	0,47 4	0,36 5	0,47 4	0.729	0,4 60
SF4	0,452	0,33 9	0,3 87	0,39 1	0,34 6	0,49 5	0.732	0,4 52
SF5	0,494	0,36 8	0,4 41	0,43 7	0,41 3	0,49 0	0.745	0,4 61
LT 1	0,644	0,56 2	0,6 67	0,68 7	0,60 0	0,60 0	0,550	0.8 45
LT 2	0,612	0,53 7	0,6 34	0,60 7	0,63 1	0,52 1	0,475	0.8 27
LT 3	0,554	0,47 1	0,5 37	0,57 8	0,53 3	0,50 1	0,484	0.7 88
LT 4	0,594	0,51 7	0,5 68	0,64 7	0,57 4	0,55 9	0,516	0.8 36
LT 5	0,644	0,58 4	0,6 38	0,65 6	0,63 8	0,58 8	0,524	0.8 74

According to the results, the cross-loading of each indicator to its variable is greater than to the other variables, thus the variables are valid.

4.3.4 The Construct Reliability Test with Cronbach's Alpha and Composite Reliability

The Cronbach's alpha (CA) and composite reliability (CR) of a variable should be between 0.6 to 0.8 for the variable to be considered reliable and 0.8 to 1.0 to be considered very reliable.

Table 4 below shows the results.

Table 4: Cronbach's Alpha & Composite Reliability Values

Variable	Cronbach's Alpha	Composite Reliability
Quests	0.792	0.857
Social Graphs	0.813	0.870

Levels	0.857	0.898
Virtual Goods	0.826	0.878
Hedonic Value	0.844	0.888
Utilitarian Value	0.815	0.871
Satisfaction	0.786	0.853
Loyalty	0.890	0.919

According to the results, all of the CA and CR are more than 0.6, thus the variables are reliable. Moreover, the CA and CR of Social Graphs, Levels, Virtual Goods, Hedonic Value, Utilitarian Value, and Loyalty are greater than 0.8, thus they are very reliable.

4.4 The Analysis of the Structural Model

The analysis of the structural model helps predict the relationships between latent variables and can be tested by looking at the R-Squares and Path Coefficients.

4.4.1 The Analysis of the R-Squares

R square is also known as the coefficient of determination which describes how far the dependency of the data can be explained by independent data. R square has a value between 0 – 1 with the provision that the closer to number one means the better (the higher the confidence level).

Table 5: R-Square Values

Variable	R-Square
Hedonic Value	0.716
Utilitarian Value	0.771
Satisfaction	0.450
Loyalty	0.607

According to the results, the R-Square values are between 0-1, thus the confidence levels are high.

4.4.2 The Analysis of the Path Coefficients

The analysis of the path coefficients can be done by looking at the T-Statistic and P-Value. The T-Statistic is used to get to know if there is a significant difference between two variables and how they are related while the P-Value is used to measure the probability of the result, assuming the null hypothesis is true. A P-Value of 0.05 or lower means the variables are statistically significant.

Table 6: Path Coefficient Values

	T-Statistic (O/STDEV)	P-Value	Information
Quests -> Hedonic Value	2.585	0.010	Accepted
Quests -> Utilitarian Value	3.458	0.001	Accepted
Social Graphs -> Hedonic Value	2.598	0.010	Accepted
Social Graphs -> Utilitarian Value	2.725	0.007	Accepted
Levels -> Hedonic Value	3.025	0.003	Accepted
Levels -> Utilitarian Value	4.268	0.000	Accepted
Virtual Goods -> Hedonic Value	2.140	0.033	Accepted
Virtual Goods -> Utilitarian Value	2.132	0.033	Accepted
Hedonic Value -> Satisfaction	2.187	0.029	Accepted
Utilitarian Value -> Satisfaction	5.985	0.000	Accepted
Hedonic Value -> Loyalty	6.060	0.000	Accepted
Utilitarian Value -> Loyalty	2.523	0.012	Accepted
Satisfaction -> Loyalty	3.620	0.000	Accepted

According to the results, looking at the p-values, all of them were less than (<) 0.05. Thus, it can be inferred that out of the 13 hypotheses proposed, all of them were accepted. Furthermore, Levels -> Utilitarian Value, Utilitarian Value -> Satisfaction, Hedonic Value -> Loyalty, and Satisfaction -> Loyalty have the P-Value of 0.000, thus they have the most significant effects among all variable relations.

4.4.3 Discussion

Quest (QS) has a significant effect on Hedonic Value (HV). Thus, the previous research projects by Wolf (2019) and Werbach & Hunter (2012) are confirmed. So, to increase the hedonic value that has to do with happiness, digital banks can implement the gamification element of quests, e.g., daily check-in, then reward the users for doing it, to increase the pleasure of the users in using the digital bank applications each day.

Quest (QS) has a significant effect on Utilitarian Value (HV). Thus, the previous studies by Wolf (2019) and Werbach & Hunter (2012) are confirmed. So, to increase the utilitarian value that has to do with tangible benefits, digital banks can implement the gamification element of quests, e.g., monthly missions, then reward the users for completing them, to give real benefits to the users for using the digital bank applications.

Social Graph (SG) has a significant effect on Hedonic Value (HV). Thus, the previous papers by Wolf (2019) and Werbach & Hunter (2012) are confirmed. So, to increase the hedonic value that has to do with escapism, digital banks can implement the gamification element of social graphs, for example, allowing the users to connect with their friends, to increase the fun of using the digital bank applications.

Social Graph (SG) has a significant effect on Utilitarian Value (HV). Thus, the previous research projects by Wolf (2019) and Werbach & Hunter (2012) are confirmed. So, to increase the utilitarian value that has to do with real utility, digital banks can implement the gamification element of social graphs, for instance, allowing the users to interact with other users, then reward them for the interactions, to give practical benefits to the users for using the digital bank applications.

Level (LV) has a significant effect on Hedonic Value (HV). Thus, the previous studies by Swacha (2016) and Werbach & Hunter (2012) are confirmed. So, to increase the hedonic value that has to do with excitement, digital banks can implement the gamification element of leveling system, e.g., a membership with silver, gold, and platinum levels, to give pride to the users for achieving a higher level in the digital bank applications.

Level (LV) has a significant effect on Utilitarian Value (HV). Thus, the previous papers by Swacha

(2016) and Werbach & Hunter (2012) are confirmed. So, to increase the utilitarian value that has to do with functional benefits, digital banks can implement the gamification element of leveling system, then reward the users for achieving a higher level.

Virtual Good (VG) has a significant effect on Hedonic Value (HV). Thus, the previous research projects by Tenório, et al. (2018) and Werbach & Hunter (2012) are confirmed. So, to increase the hedonic value that has to do with enjoyment, digital banks can implement the gamification element of virtual goods, for example, in-app coins as rewards, so the users can have fun collecting them.

Virtual Good (VG) has a significant effect on Utilitarian Value (HV). Thus, the previous studies by Tenório, et al. (2018) are confirmed. So, to increase the utilitarian value, digital banks can implement the gamification element of virtual goods, e.g., giving rewards in the forms of vouchers and cashback.

Hedonic Value (HV) and Utilitarian Value (UV) have significant effects on Satisfaction (SF). Thus, the previous papers by Kalaiarasi & Mugunthan (2020) and Hsu & Chen (2018) are confirmed. So, to increase the satisfaction that has to do with the match of expectation vs. reality, digital banks can add hedonic value aspects using the mentioned gamification elements.

Hedonic Value (HV), Utilitarian Value (UV), and Satisfaction (SF) have significant effects on Loyalty (LY). Thus, the previous papers by Kalaiarasi & Mugunthan (2020), Wolf (2019), and Hsu & Chen (2018) are confirmed. So, to increase the users' loyalty that has to do with the users keep on using the digital bank application, the users use the digital bank application even more, and the users recommend the digital bank application to their friends, the digital bank can add hedonic value, utilitarian value, and satisfaction aspects using the mentioned gamification elements of quests, social graphs, levels, and virtual goods.

5. CONCLUSION

To conclude, gamification components in Bank Neo Commerce, i.e., quests, social graphs, levels, and virtual goods, all have significant effects on the hedonic value (related to the sense of pleasure, pride, escape, and belonging) and utilitarian value (related to functional benefits). The hedonic and utilitarian values have significant effects on

satisfaction and loyalty. Satisfaction also has a significant effect on loyalty. Thus, those gamification components that affect the hedonic value, utilitarian value, and satisfaction, have significant effects on customer loyalty toward the digital bank, especially the leveling system as it has the P-Value of 0.000, which means it is statistically most significant.

This research contributes to some new findings on gamification and digital banking. In Indonesia, Bank Neo Commerce is the only digital bank with several gamification components. The results of this study can contribute to the decision-making of other digital banks to implement the gamification components as well.

The limitation of this research was that this is only a case study of one digital bank in Indonesia and the data were only from the people in Greater Jakarta. The upcoming research can discuss more about the other digital banks (once they implement the gamification components in the future) and include more samples from outside of Greater Jakarta.

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