

Integrating Quality Features into Technology Acceptance Model for Examining the Acceptance of Mobile Payment Go-Pay

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Abstract. Go-Pay is the innovation in Financial Technology offered in terms of payment efficiency. The main objective of this study was to bring further insights into consumer intentions to use mobile payments Go-Pay to help improving service quality and increasing user satisfaction of the Go-Jek user. Mobile payment is in a developing stage and consumers are still reluctant to use mobile payment. Data was collected from Go-Jek users who have used Go-Pay as mobile payment systems in Bandung city. A survey study was conducted with the SEM analysis of 200 participants with four out of six hypotheses are supported. Research results demonstrated that there were significant relationships between service quality and intention to use, while there was no significant relationship between perceived ease of use and perceived usefulness to intention to use mobile payment Go-Pay.

Keyword. Quality technology acceptance model (QTAM); intention to use; structural equation model

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INTRODUCTION

Information technology has become an inseparable part of daily life. Along with the increase in human activity, we need support tools to facilitate and provide a sense of comfort for people in carrying out daily activities such as technological developments in financial. The meaning of FinTech is innovation in financial services. FinTech helps people to access financial products and financial literacy easier. Therefore, the mobile payment technology is here as a result of this important development of information technology. Mobile payment which refers to the use of a mobile device to provide financial information, communications and transactions to customers from anywhere and at any time [1]. However, a low acceptance rate of mobile payment services by customers is an important concern of banking organization and financial company worldwide. Therefore, it takes understanding from consumers to understand mobile payment acceptance through examining technological factors that influence user's intention to use mobile payments [2].

Cash payment transactions are replaced by the non-cash payment system based on server and chip by mobile phone. FinTech's growth was also driven by the launching of the grand design efforts to increase the non-cash payments or often referred to as toward a Less Cash Society by Bank Indonesia as the holder of the Indonesian payment system regulatory authority. Less Cash Society is defined as a culture or trend that develops in the community in making payment transactions through non-cash payment media [3]. The mobile payment method, primarily payments using a smartphone, significantly increases payment efficiency compared to conventional payment methods [4].

Online mobile payment can save time and reduce transaction costs. FinTech begins to change human lifestyles in various aspects. One of them is like a transaction activity using online transportation. Online transportation companies see consumer needs to support efficiency and ease in payments, therefore the company provides mobile payment to facilitate consumers to pay.

For example Go-Jek initiated Go-Pay as server-based digital wallet to provide electronic money transaction system [5]. Go-Pay has collaborated with banks in Indonesia, and consumers can

easily pay for top-up via ATM, internet banking, mobile banking and also Go-Jek driver [6]. Go-Pay acceptance in the society is based on quality offered by Go-Jek as service provider, therefore measurements are needed to find out the success of an information system. Through information technology systems, business processes can be carried out easily, quickly, effectively, and efficiently.

The Technology Acceptance Model (TAM) determines a user's acceptance and usage of new technology. Davis (1985) formulated TAM to understand the user's acceptability of information systems and to formulate the conceptual framework of information technology adoption by adapting the theory of reasoned action (TRA) [7].

To assess whether Go-Pay mobile payment technology is accepted or not, it can be measured through the Technology Acceptance Model (TAM) development model with the concept of quality. Quality Technology Acceptance Model (QTAM) focuses on quality and integrates the technology acceptance model and the service quality framework [8]. The only known model that uses service quality variable is the DeLone and McLean Information System Success Model [8]. They define service quality as overall support from the service provider to the users. They imply that service quality becomes important as users now become customers. According to DeLone and McLean, service quality is important for information system success as poor user support will lead to lost customers and sales [9]. If consumer perceptions are filled with high quality services that are useful and easy to use, they will be more likely to use the service and more customers will be willing to use mobile payment [10].

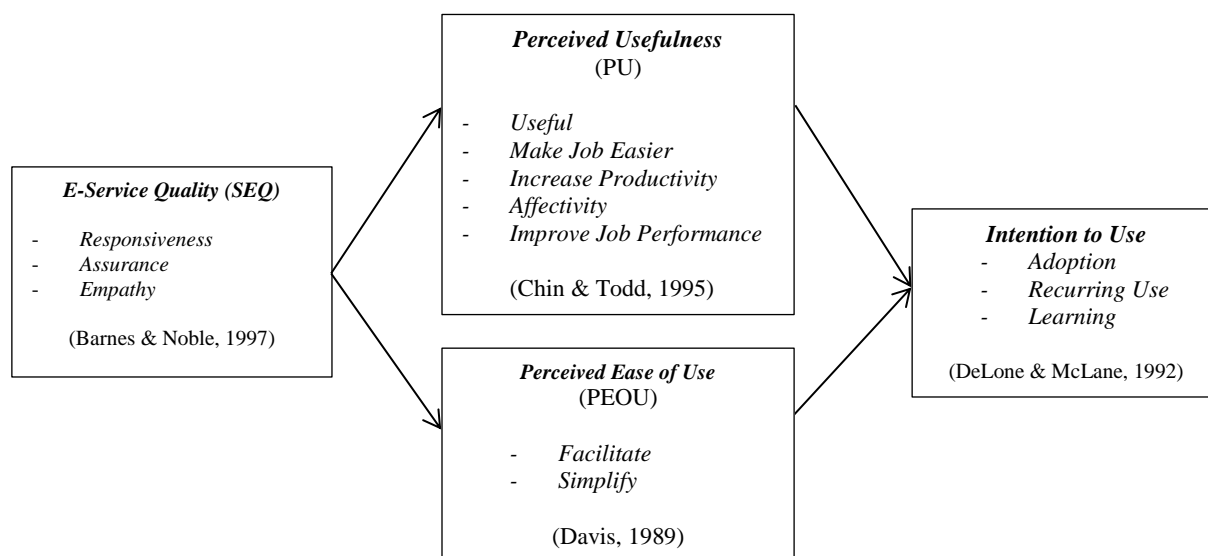


Figure1. Research Model

To measure Perceived Usefulness, the Chin and Todd's items (1995) were used and scale items from Davis (1989) was used for Perceived Ease of Use . E-Service quality is measured with items from Barnes and Noble (1997). To measure intention to use, scale items were adapted from DeLone & McLane (1992).

METHOD

Population and Sample

A survey was used to study the relationships hypothesized in this research. The respondents of this study were consumers of Go-Jek who used mobile payment Go-Pay in Bandung. Based on BPS Indonesia, Bandung City has 3.701.501 people [11], and based on previous research Go-Jek

users in Bandung are mostly of productive age ranging from 17 to 32 years old [12], while according to the results of research from Pratama (2018), the age range of users is between 18 and 30 years.

The sampling technique in this study was purposive sampling or sampling techniques with certain considerations. Purposive sampling is the selection of a group of subjects based on certain characteristics that are considered to have a close connection with the characteristics of the population that have been known previously. In other words, the sample units contacted are adjusted to certain criteria that are applied based on the research objectives or research problems[13]. The respondents of this study were Go-Jek users who have made payments with Go-Pay.

Analysis methods and data using Structural Equation Modeling (SEM), the sample size must meet the minimum sample size for the application of the SEM model. According to Hair, Aderson, Tatham and Black in Kusnendi [14] the minimum sample size for SEM analysis is 100 to 200. In line with some of the opinions above, Joreskog and Sorbom (1988) in Wijanto (2008) state that the relationship between the number of variables and the minimum sample size in a structural model can be seen in table 1 below.

Table 1. Minimum sample size SEM

Variable	Minimum Sample
3	200
5	200
10	200
15	360
20	630
25	975
30	1395

Source : Joreskog dan Sorbom (1988)

Measurement

This study used a semantic differential measurement scale or semantic difference scale. According to Umar (2008), scale is used to measure the meaning of an object or concept for respondents. This scale contains elements of evaluation (such as, good-bad and honest-not honest) and potential elements (active-passive and slow-fast). This scale is used because of interval data. The respondent must describe and support the statement.

Table 2. Semantic Alternative Score

Alternative Answer	Agree / Good	Scale							Disagree / Bad
		7	6	5	4	3	2	1	
Positive		7	6	5	4	3	2	1	
Negative		1	2	3	4	3	2	1	

Source : Umar (2008)

Structural Equation Modeling

Analysis of the data used in this study is a statistical test of the structural equation model (structural equation model - SEM). The use of structural equation models is based on the condition of free (exogenous) and bound (endogenous) latent variables. In principle SEM is a combination of factor analysis and path analysis. The purpose is to confirm or test empirically and simultaneously

measurement models and structural models that are built on the basis of theoretical studies. Thus, one of the advantages of SEM compared to the regression method and other multivariate methods is the application of SEM procedures simultaneously to a hybrid / full SEM model (a combination of measurement models and structural models).

RESULTS AND DISCUSSION

Of the 200 completed questionnaires, 183 data were used because 17 respondents did not use Go-Pay. Table 3 presents the demographic profile of the respondents. The gender distribution of the study was 63 % female and 37 % male, respectively. The majority of the respondents were young adults between 15 -35 years old.

Table 3. Demographic profile

Demographic	N	%
Gender :		
Female	126	63%
Male	74	37%
Age :		
15-25	116	58%
26-35	84	42%
35-45	-	
Using Mobile Payment Go-Pay :		
User	183	91.5%
Not a User	17	8.5%
Monthly Income :		
< Rp. 1 mio	58	29%
Rp. 1 mio – Rp. 2 mio	43	21.5%
Rp. 3 mio – Rp. 4 mio	54	27%
>Rp. 5 mio	45	22.5%
Go-Pay Spending/Month :		
< Rp. 500 thousand	163	81.5%
Rp. 500 thousand - Rp. 1 mio	30	15%
Rp. 1 mio – Rp. 2 mio	7	3.5%
>Rp. 2 mio	-	-

Structural Equation Modeling (SEM) data analysis techniques was used to test the hypothesis. Before testing the hypothesis, a model assumption test was performed to see whether the model could be analyzed with SEM.

Model Assumption Test Results

There are several assumptions that must be fulfilled in the Structural Equation Model (SEM), including normality, outlier data, and multicollinearity. The results of testing the assumptions are presented as follows.

Data Normality

Normality test needs to be done both for single data normality and multivariate normality in which several variables are used in the final analysis (Ferdinad, Augusty, 2014: 62). Data normality was performed using a critical ratio skew value of ± 2.58 at a significance level of 0.01. The results of testing these assumptions are presented in table 4 as follows,

Table 4. Assessment of Normality

Variable	min	max	skew	c.r.	kurtosis	c.r.
INT3	3.0000	7.0000	-.0441	-.2656	-1.3579	-4.0926
INT2	3.0000	7.0000	-.5306	-3.1983	.3936	1.1861
INT1	3.0000	7.0000	-.4770	-2.8751	.3148	.9488
SEQ5	3.0000	7.0000	.4558	2.7473	-.0767	-.2311
PU1	5.0000	7.0000	-.0352	-.2123	-1.6528	-4.9814
PU2	3.0000	7.0000	-.1939	-1.1688	.1164	.3509
PU3	5.0000	7.0000	.3580	2.1579	-1.3351	-4.0238
PU4	5.0000	7.0000	.0688	.4150	-1.5597	-4.7008
PU5	5.0000	7.0000	.2628	1.5839	-1.3224	-3.9854
PEOU4	3.0000	7.0000	-.4638	-2.7958	-.3304	-.9958
PEOU3	5.0000	7.0000	-.1704	-1.0273	-1.4889	-4.4874
PEOU2	3.0000	7.0000	-.6988	-4.2119	.3338	1.0062
PEOU1	5.0000	7.0000	-.0426	-.2570	-1.5345	-4.6249
SEQ2	1.0000	7.0000	-.7657	-4.6156	1.0533	3.1745
SEQ3	3.0000	7.0000	-.3148	-1.8973	.0997	.3004
SEQ4	2.0000	7.0000	-.5931	-3.5751	.9704	2.9247
Multivariate					83.0190	25.5367

Based on table 4, From the results of the normality test using Amos, the multivariate data were normally distributed based on critical ratio skew value > 2.58.

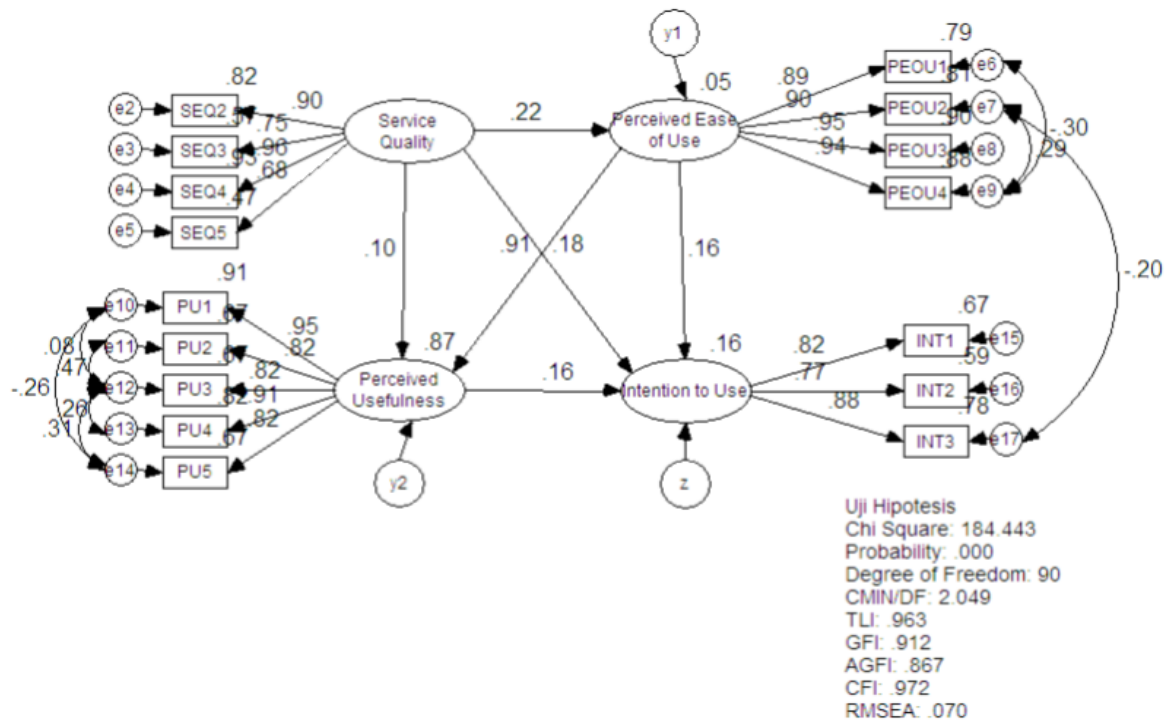


Figure 2. SEM Model

Match Test Results

Match test is carried out to check the level of compatibility between the data and the model, the validity and reliability of the measurement model, and the significance of the coefficients of the structural model. Matching test is carried out through several stages, namely the suitability of the whole model, the suitability of the measurement model, and the compatibility of the structural model.

Overall Model Fit

The suitability test for all models was conducted to evaluate the degree of compatibility or Goodness of Fit (GOF) between the data and the model in general. Based on the data processing results using AMOS, the obtained test results are as follows:

Table 5. Research Model Testing

Criteria Model Fit	Criteria Model Sustainability	Result Model	Interpretation
Probability	$\geq 0,05$	0,000	Close Fit
Normed Chi Square (NCS) or CMIN/DF	(1,00-5,00)	189.443/91=2.082	Good Fit
Goodness of Fit (GFI)	$\geq 0,90$	0,91	Good Fit
Adjusted GFI (AGFI)	$\geq 0,90$	0,87	Close Fit
Root Mean Square Error of Approximation (RMSEA)	$\leq 0,08$	0,071	Good Fit
Tucker Lewis Index (TLI)	$\geq 0,90$	0,962	Good Fit
Comparative Fit Index (CFI)	$\geq 0,90$	0,971	Good Fit

The suitability test of the model above produces a probability value (p-value) of 0,000 < 0.05 indicating the close fit model. Goodness of fit (GFI) value of 0.967 \geq 0.90 indicates a good fit model. The Adjusted GFI (AGFI) value of 0.915 \geq 0.90 indicates a good fit model. Root Mean Square Error of Approximation (RMSEA) value of 0.089 \geq 0.08 indicates a marginal fit model. Tucker Lewis Index (TLI) value of 0.959 \geq 0.90 indicates a good fit model. Normed Fit Index (NFI) value of 0.854 \leq 0.90 indicates a marginal fit model. Comparative Fit Index (CFI) value of 0.985 \geq 0.90 indicates a good fit model.

Based on this information, although not all Goodness-of-Fit shows the Fit model, it can still be said that the overall model is fit because according to Maholtra (2010: 733) the minimum size that can be used is absolute (such as GFI, AGFI), one size which is absolutely bad (such as RMSR, SRMR, RMSEA) and one comparative measure (such as NFI, NNFI, CFI, TLI, RNI). Based on the statement, each size is represented so that it can be said that the model is fit.

The magnitude of each latent variable in direct effect (Standardize effect) is presented in the table 6 as follows.

Table 6. Direct Effect

No.	Variabel	Direct Effect
1	Service Quality \rightarrow Perceived Ease of Use	0,22
2	Service Quality \rightarrow Perceived Usefulness	0,10
3	Service Quality \rightarrow Intention to Use	0,18
4	Perceived Ease of Use \rightarrow Perceived Usefulness	0,91
5	Perceived Ease of Use \rightarrow Intention to Use	0,16
6	Perceived Usefulness \rightarrow Intention to Use	0,16

The results of the significance test of the estimated path coefficients in the model after trimming are all significant at the 5% error rate or the P value of each path coefficient has a value < 0.05. It can be said that the model is the best fit model in explaining the phenomenon of research, therefore the model will be used as an empirical basis for answering the proposed research problem.

Table 7. Regression Weights

			Estimate	S.E.	C.R.	P
Perceived Ease_of Use	←	Service_Quality	.1483	.0479	3.0982	.0019
Perceived_Usefulness	←	Service_Quality	.0569	.0199	2.8658	.0042
Perceived_Usefulness	←	Perceived Ease_of Use	.7848	.0535	14.6605	***
Intention to Use	←	Perceived_Usefulness	.1877	.2780	.6753	.4995
Intention to Use	←	Perceived Ease of Use	.1684	.2351	.7164	.4737
Intention to Use	←	Service_Quality	.1252	.0538	2.3276	.0199

Hypothesis 1

H1.0 = Service Quality (SEQ) has no significant effect on Perceived Ease of Use (PEOU)
 H1.1 = Service Quality (SEQ) has a significant effect on Perceived Ease of Use (PEOU)
 The value of the relationship between SEQ and PEOU is 0.22 with a probability <0.05 (p = 0.0019) meaning H1.0 is rejected and H1.1 is accepted.

Hypothesis 2

H2.0 = Service Quality (SEQ) has no effect on Perceive Usefulness (PU)
 H2.1 = Service Quality (SEQ) has a significant effect on Perceived Usefulness (PU)
 The value of the relationship between SEQ and PEOU is 0.10 with a probability <0.05 (p = 0.042) means that H2.0 is rejected and H2.1 is accepted.

Hypothesis 3

H3.0 = Service Quality (SEQ) has no significant effect on Intention to use (Int)
 H3.1 = Service Quality (SEQ) has a significant effect on Intention to use (Int)
 The value of the relationship between SEQ with Int is equal to 0.18 with a probability <0.05 (p = 0.0199) means that H3.0 is rejected and H3.1 is accepted.

Hypothesis 4

H4.0 = Perceived Ease of Use (PEOU) has no significant effect on Perceived Usefulness (PU)
 H4.1 = Perceived Ease of Use (PEOU) has a significant effect on Perceived Usefulness (PU)
 The correlation value between PEOU and PU is 0.91 with probability <0.05 (p = *** very significant) meaning H4.0 is rejected and H4.1 is accepted.

Hypothesis 5

H5.0 = Perceived Ease of Use (PEOU) has no significant effect on Intention to Use (Int)
 H5.1 = Perceived Ease of Use (PEOU) has a significant effect on Intention to Use (Int)
 The value of the relationship between PEOU and Int is 0.16 with probability <0.05 (p = 0.4737) means that H5.1 is rejected and H5.0 is accepted.

Hypothesis 6

H6.0 = Perceived Usefulness (PU) has no significant effect on Intention to Use (Int)
 H6.1 = Perceived Usefulness (PU) has a significant effect on Intention to Use (Int)
 The value of the relationship between PU and Int is 0.16 with a probability <0.05 (p = 0.4995) meaning that H6.1 is rejected and H6.0 is accepted.

DISCUSSION

Technology is the most important element for human life today, and with the help of technology all matters can be done easily and efficiently. The results showed that Service Quality had a significant effect on Perceived Ease of Use and Perceive Usefulness, these supported by the results of previous research by Ahmad (2019) who conducted research on the Perceived Usefulness of e-banking in Pakistan and perceived ease of use.

Another result states that Service Quality has a significant effect on Intention to Use. This is supported by research from Yen, C. and Lu, H. with their results showing that service quality affects online buyer loyalty.

Perceived Ease of Use and Perceived Usefulness had no significant effect on Intention to use, as supported by Santoso (2010) who suggested that the insignificance between PEOU and PU on Intention to Use was based on the ease of the information system offered. However, Perceived Ease of Use with Perceived Usefulness are two variables that influence each other, where PEOU and PU are the grand theory of Davis's (1989) Technology Acceptance Model.

The concept of perceived ease of use shows the degree to which a person believes that the use of information systems is easy and does not require the user's effort to be able to use it. This concept includes the clarity of the purpose of the use of information systems and ease of use of the system for the purpose in accordance with the wishes of users (Davis et al., 1989). This concept provides the understanding that if the information system is easy to use, then users will tend to use it. Therefore, in developing an information system, it is necessary to consider the perceived usefulness and perceived ease of use of the user of the information system.

CONCLUSION

The main objective of this study was to bring further insights into consumer intentions to use mobile payments Go-Pay offered in terms of payment efficiency. Mobile payment is in a developing stage and consumers are still reluctant to use mobile payment.

In order to retain the customers, Go-Jek must try to achieve a high level of E-service quality. As a result, customers will enjoy the benefits of the mobile payment technology, and it would indirectly benefit Go-Jek as well. From this study, it can be concluded that at the intention to use is influenced by the service quality offered. This concept provides the understanding that if the information system is easy to use, then the user will tend to use the information system.

Based on statistical results, high service quality will give consumers a positive attitude through their perceptions about the usefulness and ease of use. With high service quality, consumers will see that the service is more valuable and easier to use. Through this perception their positive attitude will be built which in turn will lead to positive intentions.

For further research, it can be done in a different context to validate more concrete models such as the role of trust or risk can be added to the model to fully explain the more efficient use of mobile payments.

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