Determinants of Continuance Intention to Use On-demand Mobile Service: GO-JEK case

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Abstract

In recent years, on-demand mobile service has become an essential application. GO-JEK is the most popular on-demand mobile service in Indonesia. Understanding the determinants of continuance intention is important in order to retain users. This study tried to examine factors influencing continuance intention to use GO-JEK mobile application by employing Unified Theory of Acceptance and Use of Technology 2 and DeLone and McLean IS Success Model. The model was validated using data collected from 334 respondents. The results indicate that habit, satisfaction, price value, and facilitating condition significantly influence continuance intention. In addition, service quality and performance expectancy have positive effects on satisfaction.

Keywords: *continuance intention; UTAUT2; D&M IS Success Model; On-demand Mobile Service.*

1. Introduction

On-demand mobile service (ODMS) which is an application on smart phones that offer services/goods is an application that is often used because of its practicality. When consumers need a particular service/good, they only have to place an order through a mobile application and be delivered directly to the consumers. Many types of ODMS have sprung up; one of the ODMSs that is quite popular in Indonesia is the GO-JEK application that serves on-demand services such as transportation, logistics, and food delivery. More than 10 million people have downloaded it on Android and iOS.

Retaining users is very necessary for the continuation of a business. A business can run for a long period of time depending on the consumers. The costs needed to get new users are also higher than retaining users. The long-term viability of the information system and its success depend on continued use rather than initial use [1].

However, as the investigation of continued use is equally important as the initial use, the study of the continued use of ODMS is still limited. Therefore, to be able to understand it, this study tried to employ Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) and DeLone and McLean Information Systems Success Model (D&M ISSM).

UTAUT2 which was built to examine the adoption and use of technology in the context of consumers has proven that it is better than its predecessor [2]. Previous studies proved that the variables found in UTAUT2 can also be the determinants of IT post-adoption [3][4].

In contrast to UTAUT2 which have independent constructs that are more oriented to human behavior, D&M ISSM is used to understand and measure the success of information systems, leaning towards the quality of information system. In the D&M ISSM, quality factors influence use and satisfaction. The quality of information system is also important in the post-adoption [5]. Meanwhile, satisfaction cannot be separated from the IS continuance tradition.

The rest of paper is organized as follows. The next section describes theoretical background and hypotheses. The third section presents research methodology. The results are provided in the forth section, followed by a discussion of these results in the fifth section. Finally, limitations of this study and suggestions for future research are given.

2. Theoretical background and hypotheses

2.1 Unified Theory of Acceptance and Use of Technology 2 (UTAUT2)

The Unified Theory of Acceptance and Use of Technology 2 is the development of the Unified Theory of Acceptance and Use of Technology model (UTAUT) which has four constructs that determine the acceptance and use of technology by users, i.e.: performance expectancy, effort expectancy, social influence, and facilitating conditions [6]. UTAUT2 was built with the aim of understanding the acceptance and use of an information technology in consumer context so as to add hedonic motivation, price value, and habits [2].

Performance expectancy describes the use of technology to benefit consumers in carrying out certain activities [2]. Performance expectancy is similar to perceived usefulness as it is rooted in the perceived usefulness in Technology Acceptance Model (TAM) [6] which in previous studies positively influenced satisfaction [1][7]. In addition, perceived usefulness affects continuance intention [8][9] and even becomes a stronger predictor than satisfaction [10].

Effort expectancy is the level of ease perceived by consumers in using technology [2]. The effort expectancy similar to TAM's perceived ease of use has been proven that perceived ease of use has an effect on satisfaction [11]. In previous studies [12][13], effort expectancy has an effect on continuance intention. If users feel that they are still having difficulty using the GO-JEK application, for example because of its difficult appearance, the users can stop using it. Conversely, if the GO-JEK application is perceived as easy, the users are satisfied and can be directly determined to continue using it.

Prior studies show that social influence has an effect on continuance intention [14][15]. Social influence describes consumers feeling that the other people who are important to them think they should use certain technologies [2].

The use of the GO-JEK application must also be supported by other facilities such as the internet. If the users have sufficient supporting facilities and knowledge in using the mobile application, the users continue to use the GO-JEK application. As shown in previous researches [16], facilitating conditions can also influence continuance intention.

Hedonic motivation is a concept of perceived enjoyment which is a pleasure derived from the use of technology [2]. Prior researchers have found that perceived enjoyment influenced continuance intention [17][18]. If someone enjoys using the GO-JEK application, it can create the desire to continue using it.

Price value is a comparison between the benefits of technology and the cost of using it [2]. Although the GO-JEK application is free, the users still get charged when using the application which is the cost of data packages as this application requires an internet connection. If the usage costs are in accordance with the benefits that the user gets, the price value can positively influence the continuance intention of the GO-JEK application.

Although the concept of habit varies, habit can also be an additional cause of the intention to continue to use technology when its use has become a habit [19]. Habit has been shown to influence continuance intention in previous studies [20][21].

In line with the findings that have been mentioned, then the hypotheses of the study are as follows:

H1a. Performance expectancy has a significant influence on satisfaction.

H1b. Performance expectancy has a significant influence on continuance intention.

H2a. Effort expectancy has a significant influence on satisfaction.

H2b. Effort expectancy has a significant influence on continuance intention.

H3. Social influence has a significant influence on continuance intention.

H4. Facilitating conditions has a significant influence on continuance intention

H5. Hedonic motivation has a significant influence on continuance intention.

H6. Price value has a significant influence on continuance intention.

H7. Habit has a significant influence on continuance intention.

2.2 DeLone and McLean Information Systems Success Model (D&M ISSM)

Initially DeLone and McLean [22] established six dimensions of information system success, namely system quality, information quality, use, user satisfaction, individual impact, and organizational impact. In the updated model, individual and organizational impacts merge into net benefits. In addition, DeLone and McLean [23] added use and service quality. Service quality must be included to measure the effectiveness of information system [24]. Therefore, in an updated model, system, information, and service qualities have an effect on

satisfaction and use. Satisfaction also can influence use. However, use is difficult to interpret, so they also provide an alternative to measure the dimensions of use, namely intention to use.

Based on several previous researches [25][26], satisfaction is a strong predictor of continuance intention. If the users are satisfied with the GO-JEK application, the users intend to continue using it.

Information quality dimension measures the output or results of the information system [22]. The higher the quality of information, the more the user satisfaction will increase. Information quality has been positively proven to affect satisfaction [27][28].

System quality measures the information system, particularly the performance process [22]. Previous studies show that system quality has a positive effect on satisfaction [29][30].

Researchers [31][32] found that service quality could also prove to influence satisfaction. Service quality measures the quality of the service support that is given to users.

Then, the following hypotheses are proposed:

H8. Satisfaction has a significant influence on continuance intention.

H9. Information quality has a significant influence on satisfaction.

H10. System quality has a significant influence on satisfaction.

H11. Service quality has a significant influence on satisfaction.
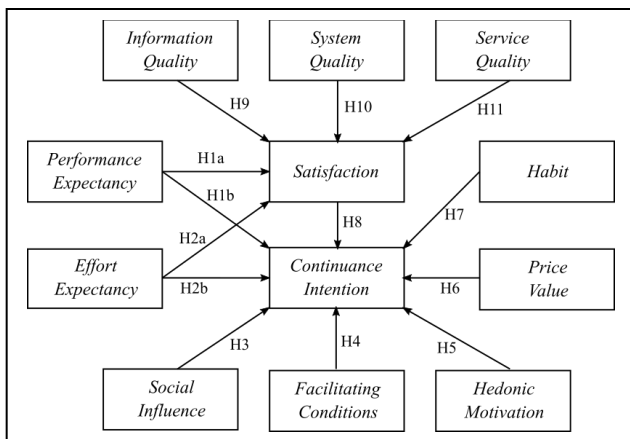
The research model is depicted in Fig. 1.

Fig. 1 Research Model.

3. Research methodology

3.1 Measurement items

All constructs were measured using a Likert scale on a 5-point scale. Other than the indicators for satisfaction, the choices from "strongly disagree" to "strongly agree" were provided. For the predictor variables derived from UTAUT2, they were measured using the measurements belonging to Venkatesh et al. [2]. The construct information and system qualities were adapted from Bailey and Pearson [33] and DeLone and McLean [23], while the service quality took the indicators from Pitt et al. [24]. The measurements of quality dimensions vary greatly, but in this study, the measurement of information quality included accuracy, actuality, reliability, completeness and relevance. The system quality included turnaround time, ease of access, security and reliability. For service quality, it included assurance, responsiveness, empathy and reliability. The satisfaction and continuance intention were measured using Bhattacherjee's version [1]. As the study was conducted in Indonesia, the measurement items were translated into Indonesian.

3.2 Data collection

The data collection was carried out through online surveys for one week starting on 9 June 2018. The questionnaires were built using the Google Form and the questionnaire link was shared through social networks. The participants were 334 active users of the GO-JEK application. The demography respondents are presented in table 1. From the data collected, there are two missing values.

Table 1: Demography Respondents

Item	Option	Qty.	Percentage (%)
Sex	Male	78	23.4
	Female	256	76.6
Age	<18	21	6.3
	18-24	175	52.4
	25-34	119	35.6
	35-44	14	4.2
	45-54	9	1.5
Education	Lower than High School	3	0.9
	High School	97	2.9
	Diploma	21	6.3
	Bachelor	190	56.9
	Master	22	6.6
	Doctorate	1	0.3

4. Results

The data analysis used the partial least squares structural equation modeling (PLS-SEM) method using the SmartPLS 3.0 [34].

4.1 Measurement model evaluation

All indicator loading met the conditions, except the FC4 indicator on the facilitating condition variable. The loading value must be over 0.7 [35], so the FC4 was removed and the model was recalculated without FC4. The results are provided in table 2 and 3.

Table 2: Indicator Loading, AVE, Composite Reliability

Constructs	Items	Loadings	AVE	Composite Reliability
Performance Expectancy	PE1	0.854	0.730	0.890
	PE2	0.879		
	PE3	0.829		
Effort Expectancy	EE1	0.861	0.793	0.920
	EE2	0.911		
	EE3	0.898		
Social Influence	SI1	0.878	0.800	0.923
	SI2	0.914		
	SI3	0.891		
Facilitating Condition	FC1	0.848	0.736	0.893
	FC2	0.830		
	FC3	0.857		
Hedonic Motivation	HM1	0.923	0.815	0.930
	HM2	0.923		
	HM3	0.861		
Price Value	PV1	0.887	0.784	0.916
	PV2	0.876		
	PV3	0.894		
Habit	HT1	0.873	0.782	0.915
	HT2	0.901		
	HT3	0.879		
Information Quality	IQ1	0.872	0.793	0.950
	IQ2	0.898		
	IQ3	0.900		
	IQ4	0.892		
	IQ5	0.889		
System Quality	SY1	0.840	0.648	0.880
	SY2	0.805		
	SY3	0.739		
	SY4	0.831		
Service Quality	SV1	0.824	0.714	0.909
	SV2	0.860		
	SV3	0.885		
	SV4	0.810		
Satisfaction	ST1	0.878	0.766	0.929
	ST2	0.886		
	ST3	0.876		
	ST4	0.861		
Continuance Intention	CI1	0.907	0.790	0.919
	CI2	0.836		
	CI3	0.922		

As shown in table 2, the values of the Average Variance Extracted (AVE) and composite reliability meet the criteria. The AVE value must be greater than 0.5, while the composite reliability can be accepted if the value is higher than 0.7. Likewise, with the discriminant validity shown in table 3, the root of AVE is greater than the correlation value with other constructs.

4.2 Structural model evaluation

After the measurement model met the requirements, a structural model was evaluated. Fig. 2 illustrates the results of structural model analysis with explanatory power, estimated path coefficient, and p-value.

The model explains 58 percent of the variance in continuance intention. Only habit ($\beta = 0.278$, p <0.001), satisfaction ($\beta = 0.252$, p <0.001), price value ($\beta = 0.141$, p <0.05), and facilitating condition ($\beta = 0.127$, p <0.05) significantly influence continuance intention so that they confirm H4, H6, H7, and H8.

The model also explains 47 percent of the variance in satisfaction. Satisfaction is affected by service quality ($\beta = 0.357$, p <0.01) and performance expectancy ($\beta = 0.171$, p <0.01). It confirms H1a and H11.
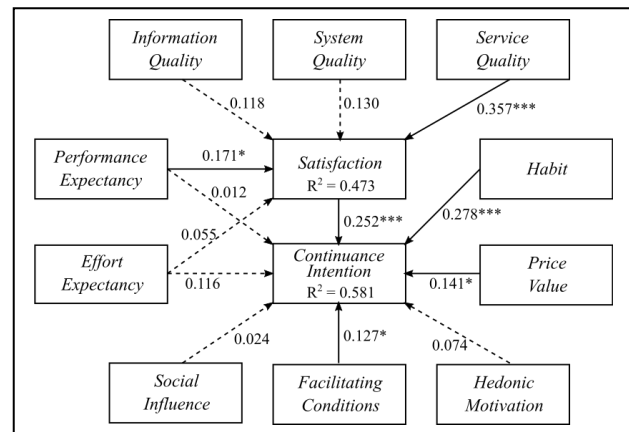

Fig. 2. Results of structural model analysis
Note: * p<0.05; ** p<0.01; *** p<0.001;
⋯⋯▷ not significant; ⟶ significant.

Table 3: Construct Correlation

	CI	EE	FC	HM	HT	IQ	PE	PV	SI	ST	SVQ	SYQ
CI	*0.889*											
EE	0.521	*0.890*										
FC	0.527	0.633	*0.858*									
HM	0.556	0.454	0.417	*0.903*								
HT	0.586	0.367	0.350	0.518	*0.884*							
IQ	0.506	0.441	0.416	0.550	0.479	*0.890*						
PE	0.538	0.610	0.540	0.536	0.526	0.450	*0.854*					
PV	0.569	0.470	0.484	0.565	0.432	0.467	0.477	*0.886*				
SI	0.462	0.326	0.333	0.518	0.568	0.466	0.493	0.360	*0.894*			
ST	0.605	0.434	0.464	0.537	0.408	0.554	0.486	0.546	0.421	*0.875*		
SVQ	0.499	0.440	0.432	0.561	0.418	0.668	0.475	0.482	0.418	0.633	*0.845*	
SYQ	0.519	0.505	0.458	0.529	0.438	0.743	0.457	0.538	0.427	0.577	0.712	*0.806*

5. Discussion

The results of the study show that habit has the strongest influence on continuance intention. Consistent with previous studies [36][37], habit is one of the antecedents of continuance intention. It is not surprising because the application was actively used. In accordance with Gefen's statement [19], the users considered the use of the GO-JEK application to be a habit, so the users were motivated to continue using the GO-JEK application.

This research also reinforced that satisfaction can be a determinant of continuance intention [38][39]. As it is already said, satisfaction is a variable that is inherent in the IS continuance tradition. User satisfaction is important so that the continuity of an information system can last for a long time. Developers really need to maintain and continue to increase user satisfaction, so they do not stop using the application because their satisfaction is not met.

Satisfaction is positively influenced by service quality that is consistent with previous researches [40][41] and performance expectancy, while information quality and system quality are only close to the significant requirements. Therefore, as satisfaction is an important factor that influences the continuance intention to use, quality must continue to be improved so that user satisfaction also rises. In specific, good service is the most important thing for users. They want a guarantee that the application continues to run well.

Although performance expectancy has an indirect effect on continuance intention, it is not an important factor that can directly influence user's intention to continue using the application. Bhatacherjee [1] also states that perceived usefulness does not have a strong effect on continuance intention.

The other factor that is the motivation for continuance intentions is price value. As the GO-JEK application can be downloaded for free, it is clearly beneficial. The users only need to pay the other costs that arise when using the application, such as internet usage fees that can be said to be quite affordable. The users feel the costs incurred and the benefits are comparable.

Facilitating condition is the additional determinant for the users to intend to continue using the GO-JEK application. It cannot be denied that without sufficient resources and knowledge to use the application and the suitability of the application with related technology that has already been owned by the users, the GO-JEK application will not be used. The facilities needed, such as the internet and smart phones, are crucial tools in order to use the application. As long as the users still have the supporting facilities, they will continue to use the application.

Meanwhile, this study could not find that effort expectancy significantly influenced satisfaction and continuance intention. These findings added to the research list which suggests that perceived ease of use is a less important variable in the post-adoption [1][7][42]. In the post-adoption, the users felt familiar in using the application, so, for the users, the ease of using the application is not the main thing.

Like the study conducted by Tam et al. [3] regarding the continuance intention to use mobile application, social influence and hedonic motivation do not contribute in determining continuance intention either. The user's desire to continue to use the application is not caused by other people even though the people are considered important to them. The pleasure gained when using the application is not the motivation of the users. The GO-JEK application may not a type of application that can really entertain the users even though they get fun and enjoyment when using it.

6. Limitation and future research

This study certainly had several limitations. The data collection in this research was a cross-sectional study, while human behavior tends to be dynamic. Then, further research can do a longitudinal study.

The data collection used online surveys. The participants were too dominated by women and young people even though this was rather natural. The results were potentially biased. Therefore, further research must be carried out.

This study was only limited to the use of ODMS, particularly in the GO-JEK application, so further research can further investigate the integration of UTAUT2 and D&M ISSM for the use of other contexts. Different contexts can also produce different results.

Other relations between existing variables can be further tested. In this study, habit was the strongest predictor, and subsequent research can probe the concept of habit more deeply. In addition, relevant variables that have not been discussed in this study or other theories can be added to explain continuance intention.

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