

Do Facilitating Conditions Still Matter for e-Wallet Users? Testing the Mediating Role of Perceived Ease of Use

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Abstract—This present study aims to examine perceived ease of use as a mediating variable between facilitating conditions and e-wallet usage intention. PLS-SEM was employed to analyze data and formulate research implications. Empirical data were compiled from 120 e-wallet users in Madiun (Indonesia). The results have indicated that the mediating effect of perceived ease of use is significant. In order to increase usage intention, e-wallet service providers are encouraged to facilitate their customers via attractive guidance content.

Keywords—Facilitating Conditions; Perceived Ease of Use; Intention to Use; e-Wallet

I. INTRODUCTION

Digitalization has been a predominant factor in consumer behavior shifting that has led to new nature of living [1], [2]. Societies around the world are more connected due to the growth of information and communication technologies. As a consequence, it becomes easier for consumers to find, compare, and purchase products through the online platforms. Digitalization has also been supported by the advancement of smartphone devices [3]. Various smartphone-based applications have emerged to provide daily innovative and convenient services. An electronic wallet (e-wallet) is one of the innovative services in the financial ecosystem that provides a new way to make payment transactions. E-wallet service requires smartphones for its operation, which makes it a convenient alternative to earlier payment methods [4], [5]. Users can deposit money into their e-wallet via several channels, such as automated teller machines, mobile banking, and online banking [3]. E-wallet applications provide an efficient payment process by utilizing some information, including phone numbers, email, and payment codes [6]. Furthermore, e-wallet services have also been integrated into e-commerce platforms.

E-wallet services have also snatched the attention of many business scholars, particularly about usage intention determinants. Several business studies have admitted facilitating conditions as one of the e-wallet usage determinants [2], [3], [7-9]. According to Chawla and Joshi [7], facilitating conditions refers to technical infrastructure and organizational aspect that encourage users to use e-wallet services. Facilitating conditions allow users to conduct payment transactions by utilizing e-wallet applications smoothly. Previous e-wallet studies have proven the significant role of facilitating conditions in enhancing usage intention [7-9]. However, some studies come out with paradoxical results, such as a study on e-wallet users in Myanmar generating an insignificant influence [3]. The study by Yang et al. in Indonesia also provides the insignificant influence of facilitating conditions on usage intention [2]. Considering the inconsistent findings, this study aims to clear up this research gap by involving a mediating variable in the research model.

Perceived ease of use was proposed as mediating variable between facilitating conditions and intention to use. The selection of perceived ease of use as mediating variable is caused by the following reasons. Firstly, perceived ease of use becomes one of the most influential factors in determining behavioral intention when users face new technology [8]. The expectation of uncomplicated system applications will increase usage intention and be supported by facilitating conditions such as operating

guidance [10]. Users can avoid time-consuming and operating risks in the unfamiliar system if the proper guidance is available [9]. Secondly, perceived ease of use examination as the mediation role between two concerned variables in the e-wallet context remains sparse. Most of the previous studies [2], [3], [9] tested the influence of facilitating conditions on the intention to use directly. Thus, this study attempted to assess the mediating role of perceived ease of use on the link between facilitating conditions and intention to use.

Overall, the current study provides some contributions, both from theoretical and managerial viewpoints. The findings advance knowledge regarding the direct or indirect effect of the facilitating conditions in increasing e-wallet usage intention. Understanding the link between facilitating conditions and intention to use will help other scholars to develop a suitable research model. This study also generates suggestions for e-wallet providers to consider the facilitating conditions in enhancing users' intention to use. The rest of this paper is outlined as follows. The first section presents the hypotheses development and conceptual model. Further, research methods, results, and discussions are revealed. In the last section, the paper concludes with theoretical and managerial implications.

II. HYPOTHESES

As stated in the previous section, facilitating conditions consist of the organizational and technical infrastructure aspects [7]. In the e-service context, organizational aspects deal with any effort from the providers to support consumer needs. For user experience reasons, many e-service providers administer online tutorials and free trial sessions [11]. Both of these treatments are intended for prospective system users who need an initial understanding of system usage. Technical infrastructure also plays an important role in this context [12], [13]. For instance, successful e-wallet usage depends on the suitability between the smartphone specification and system requirement. Chawla and Joshi noted several factors, including the availability of internet connections, required smartphone knowledge, and privacy laws [8]. The above elucidation shows that facilitating conditions are needed to shape behavioral intention and make users operate e-wallet systems easier. Hence, it is rational to propose the following hypotheses.

H1: Facilitating conditions have a significantly positive influence on the intention to use e-wallet services

H2: Facilitating conditions have a significantly positive influence on e-wallet services' perceived ease of use

As formulated by Davis in the Technology Acceptance Model, perceived ease of use has been considered in terms of behavioral intention against new technology [6], [16]. Perceived ease of use refers to the personal perception that using a particular system is effortless [14], [15]. In this context, the perceived ease of use concept evaluates the required efforts in learning and using e-wallet applications. Sharma et al. reveal that e-wallet acceptance is disturbed by several constraints, including user lack of skills, anxiety toward new technology, and system complexity [17]. Those mentioned constraints tend to result in dissatisfaction, particularly for old and inexperienced users [6]. Consequently, users have more intention to use e-wallet apps if they find the easy learning process. Several previous e-wallet studies have resulted in significant associations between perceived ease of use and usage intention [2], [6], [18]. Hence, it is rational to propose the following hypothesis.

H3: Perceived ease of use has a significantly positive influence on the intention to use e-wallet services

Based on the above elucidation regarding relationships among variables in this study, we develop a conceptual model as shown in Fig. 1. The conceptual model explains how facilitating conditions can affect usage intention through perceived ease of use.

III. RESEARCH METHOD

3.1. Data Analysis

This study aims to examine the mediating role of perceived ease of use on the association between facilitating conditions and perceived ease of use. Partial least squares structural equation modeling (hence abbreviated as PLS-SEM) was used to accomplish the proposed objective. Related to our focus on exploring perceived ease of use as mediating variable, PLS-SEM was selected. Hair et al. declare that PLS-SEM is suitable for exploratory studies rather than confirmatory [19]. PLS-SEM consists of two main measurement steps, including the reflective model and structural model measurement [20]. Reflective model measurement, the first step in PLS-SEM, is required to evaluate construct reliability and indicator validity. Meanwhile, the second measurement is intended for the hypotheses examination.

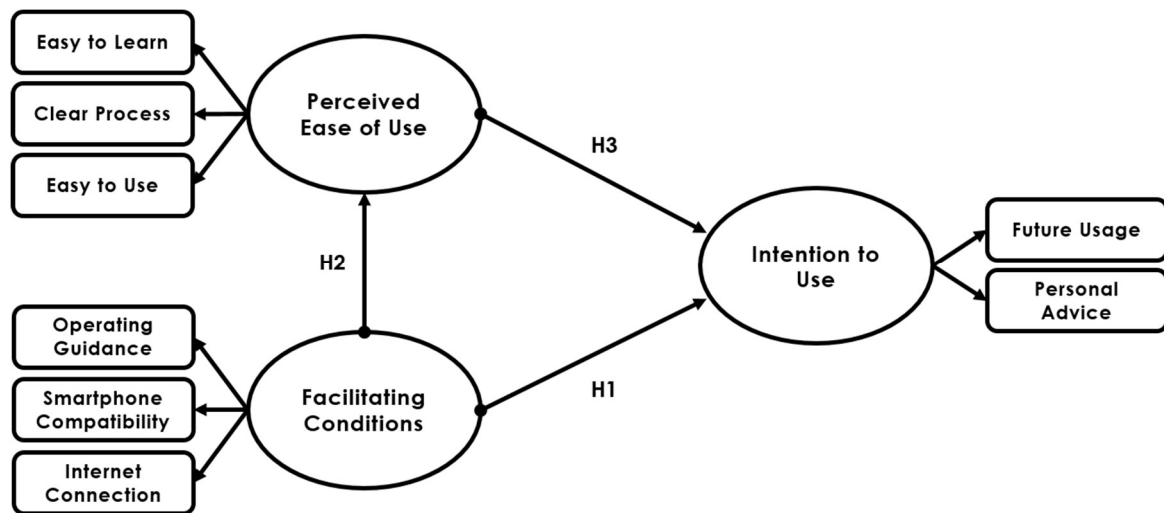


Fig. 1. Conceptual Model

3.2. Measurement Scale

The measurement instrument was developed through two following steps. Firstly, a draft of the questionnaire was created and adapted from past related studies. For facilitating conditions, three indicators (i.e., operating guidance, smartphone compatibility, and internet connection) were adapted from [2], [8]. For perceived ease of use, three selected indicators (i.e., easy to learn, clear process, and easy to use) were referred from [16], [18]. Furthermore, this study employed two indicators (i.e., future usage and personal advice) to evaluate usage intention from e-wallet users [6], [18]. We delivered all those indicators based on a 10-point Likert scale (1 strongly disagree to 10 strongly agree). Secondly, we conducted a pilot test for the questionnaire readability test. Several e-wallet users, containing polytechnic students and employees, were involved in this step. Lastly, minor adjustments were made to our questionnaire regarding the wording context.

3.3. Sample and Data Collection

Considering the unidentified population boundary, this study applied non-probability sampling. Purposive sampling was used to gather potential data. According to Taherdoost [21], purposive sampling, as one of the non-probability categories, is suitable for the exploratory study instead of generalization objectives. Researchers are allowed to receive valuable information through a pre-determined respondent characteristic. The respondent requirement of this study was the e-wallet users who made transactions in the last two weeks before involving in the survey. An online-based questionnaire was used to collect data from e-wallet users in Madiun during June and July 2023. The questionnaire distribution process was conducted by utilization of social media such as LinkedIn and WhatsApp applications. All respondents were given one week to fill out the online questionnaire completely. At the end of the data collection period, 120 questionnaires were received. Related to the minimum sample in this study, we applied the inverse square root method to determine it [22]. The minimum sample number was estimated to be 111 (sig. level 0.05; minimum path coefficient 0.237), which means that the minimum necessity has been fulfilled.

IV. RESULT AND DISCUSSION

4.1. Respondents Profile

According to the demographic distribution profile (see Table 1.), respondents in this study are dominated by female users. The majority of respondents are young (below 21) and identified as undergraduate students. Additionally, it is reported that GoPay become the most used e-wallet application by 53.33% respondents. In terms of monthly average transactions, almost half of the respondents conduct below three transactions. These demographic distributions are similar with other e-wallet studies [2], [9].

Table 1. Demographic Profile of Respondents

Demographic Profile	Description	Frequency	Percentage
Gender	Male	50	41.67%
	Female	70	58.33%
Age	Below 21	63	52.50%
	21 - 30	26	21.67%
	31 - 40	24	20.00%
	Above 40	7	5.83%
Occupation	Entrepreneur	25	20.83%
	Employee	32	26.67%
	Undergraduate Student	63	52.50%
Most Used Apps	GoPay	64	53.33%
	Ovo	56	46.67%
Monthly Transaction	Below 3	58	48.33%
	3 - 5	49	40.83%
	Above 5	13	10.84%

Source: Processed Data (2023)

4.2. Reflective Model Assessment

In the first stage, the validity and reliability of each latent construct were examined. Regarding convergent validity aspect, all indicator loadings and average variance extracted (AVE) are required to be higher than 0.50 [19]. As represented in Table 2., all indicator loadings and AVE have reached the suggested value. It means that the convergent validity of our constructs has been established. Confirming the presence of internal reliability requires Cronbach's Alpha (CA) and Composite Reliability (CR) to be greater than 0.70. Table 2. presents that both CA and CR have reached the mentioned cut-off value. In summary, all measurement results in this study confirmed satisfactory validity and reliability.

Table 2. Reflective Model Assessment Results

Construct (Indicator)	Loading	CA	CR	AVE
Facilitating Conditions		0.733	0.849	0.652
▪ Operating Guidance	0.825			
▪ Smartphone Compatibility	0.776			
▪ Internet Connection	0.821			
Perceived Ease of Use		0.855	0.912	0.776

▪ Easy to Learn	0.896			
▪ Clear Process	0.880			
▪ Easy to Use	0.866			
Intention to Use		0.706	0.858	0.752
▪ Future Usage	0.944			
▪ Personal Advice	0.784			

Notes: CA (Cronbach Alpha); CR (Composite Reliability); AVE (Average Variance Extracted)

Source: Processed Data (2023)

4.3. Structural Model Assessment

The structural model was examined using the non-parametric bootstrapping procedure. Following Hair et al. [19], we applied 500 replications for the mentioned procedure. According to hypotheses testing, the significance of path coefficients was evaluated using resulted t-value. As presented in Table 3., it is clear to imply that H2 and H3 are supported. H1 is found to be rejected since resulted t-value is less than 1.96.

Table 3. Structural Model Assessment Results

Hypotheses	Direct		Indirect		Total	
	B	t-value	B	t-value	B	t-value
H1: Facilitating Conditions → Intention to Use	0.112	1.198	0.161	2.936	0.273	3.152
H2: Facilitating Conditions → Perceived Ease of Use	0.356	4.093			0.356	4.093
H3: Perceived Ease of Use → Intention to Use	0.453	4.469			0.453	4.469

Source: Processed Data (2023)

4.4. Mediation Analysis

The mediation role of perceived ease of use was tested using mediation analysis by Carrion et al. [23]. According to the path significance results in Table 3., we found that the indirect effect of facilitating conditions toward usage intention is significant. Meanwhile, the direct impact of facilitating conditions on usage intention is not significant. As elaborated in [23], the complete mediation criterion is indicated when the direct impact is insignificant, whereas the indirect one is significant. Therefore, it can be concluded that perceived ease of use completely mediates the relationship between facilitating conditions and usage intention.

4.5. Discussion

Through the bootstrapping procedure, this study revealed that the influence of facilitating conditions on intention to use is not significant. A similar finding was reported in other previous studies [2], [3]. This finding indicates that the existing infrastructure and supporting services are insufficient. However, facilitating conditions are still needed to provide guidance for e-wallet users. In the context of Indonesian users, especially millennials and Gen Z, how easily an e-wallet application can be learned is important.

V. CONCLUSION

This study was conducted to examine perceived ease of use as a mediating variable between facilitating conditions and usage intention. From the academic viewpoint, the present study proves the mediating role of perceived ease of use based on technology acceptance perspective. In order to increase usage intention, e-wallet service providers should try to support the learning process via social media such as YouTube and Instagram.

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