


## Problems And Handling Of Electronic Payment Systems In The Digital Era In Medan

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Article Info	ABSTRACT
<p><b>Keywords:</b> Usage barriers, Value barriers, Risk barriers, Tradition barriers, Privacy barriers, Facilitating conditions, Intention to Use</p>	<p>Electronic payment system failure refers to a situation where a payment process or financial transaction is not completed as expected. Transaction failure using an electronic payment system can be caused by various factors, which are generally categorized into technical, security, infrastructure, and operational aspects. Therefore, this study aims to investigate technical problems, lack of user understanding, user errors, third-party interference, and high transaction volume levels as causes of electronic transaction failures and delayed funds in electronic payment systems. The problems, and handling of electronic payment systems. For this purpose, an investigation was conducted into technical problems, lack of user understanding, user errors, third-party interference, and high volume levels. The respondents of this study were those who were qualified (Medan residents/have visited Medan), users of electronic payment systems and have experienced problems processing transactions with electronic payment systems. The questionnaire compiled using Google Form was sent to 120 users of electronic payment systems among students using WA and 93 of them returned it. The results of the study showed that barriers to use and risk barriers had a negative effect on interest in using. While value barriers, tradition barriers, privacy barriers, and facilitating conditions had a positive effect on interest in using electronic payment systems.</p>
<p>This is an open access article under the <a href="https://creativecommons.org/licenses/by-nc/4.0/">CC BY-NC</a> license</p> 	<p><b>Corresponding Author:</b> Mei Hotma Mariati Munte Nommensen HKBP University Jalan Sutomo 4A <a href="mailto:meihotmamariati_munte@yahoo.co.id">meihotmamariati_munte@yahoo.co.id</a></p>

### INTRODUCTION

A common problem in electronic payment systems is failure to make payment transactions. Failure of an electronic payment system refers to a situation where the payment process or financial transaction is not completed as expected. Failed transactions using an electronic payment system can be caused by various factors, which are generally categorized into technical, security, infrastructure, and operational aspects. In some areas of Medan, the infrastructure to support electronic payments may be inadequate, such as lack of internet access or POS (Point of Sale) devices. The problem of electricity stability may also be the cause of the failure of electronic payment transactions. Disruptions in the electricity supply can affect the devices used to conduct electronic transactions. The transaction failed because the balance in the user's account was insufficient to complete the payment and exceeding the transaction limit will cause the transaction to be rejected.

The following events are evidence of the failure of electronic transactions in the electronic payment system at merchants. Electronic transactions to make payments to QRIS *merchants* using ShopeePay were carried out by a consumer. The payment status on ShopeePay stated that the payment was successful and the balance had been deducted, but according to the *merchant* the funds had not yet been received. (Trisno, 2021). Another failed electronic transaction occurred at a restaurant located in Medan. The consumer made payments with OVO three times for one transaction. For the first payment transaction, it failed according to *the merchant* but the OVO balance had been deducted. The consumer immediately contacted OVO to confirm the transaction status and it was declared a failure. (Yopie, 2018).

Consumer Media (Wirawan, 2024) reported several incidents of electronic transaction failures as follows. On February 9, 2024, a consumer stated that the QRIS scan was successful but the funds did not enter the DANA merchant. A transaction via QRIS Kredivo carried out on February 29, 2024 was successful, but the balance did not enter the merchant. Even the goods purchased by the consumer have not been received because the merchant is still waiting for the funds to enter. On February 25, 2024 Pamelashop consumers made transactions using QR Kredivo. Initially the transaction was delayed with the application and email stating that it was being processed. After some time the transaction in the application changed to successful. However, the seller stated that the funds had not been received. Another electronic payment system failure experienced by a UOB bank customer with a TMRW savings product. On March 25, 2022, the customer in question made a transaction at Red & White Neo Soho. The customer scanned *QRIS* twice. In the first transaction, the application *was loading* so there was a notification that it had failed. When checked with *the merchant*, the transaction had not been entered. The second QRIS *scan* was carried out, it turned out that the same thing happened. Even for the second transaction, the application immediately *force closed* / exited the application suddenly (Purwinanto, 2022).

Previous research shows that there is a significant positive relationship between value barriers, risk barriers with the use of internet banking. Traditional barriers have a negative and insignificant influence on the use of internet banking (Arif et al., 2020). Tradition barriers (trust) have a negative relationship with intention to use. Value barriers (poor quality control) are positively related to WOM (P. Kaur, Dhir, Ray, et al., 2020). Usage, risk, and value barriers are negatively related to intention to use mobile payment systems (P. Kaur, Dhir, Singh, et al., 2020). Usage barriers, risk barriers, tradition barriers, privacy concerns are positively related to delaying adoption of mobile payment systems; value barriers are negatively related to delaying adoption of mobile payment systems (Khanra, Dhir, Kaur, et al., 2020). Other researchers found that facilitating conditions have a positive effect on behavioral intentions to adopt mHealth (Zahedul et al., 2020). Likewise, the results of other studies, that facilitating conditions significantly affect user attitudes and intentions (Chawla & Joshi, 2020; Sharma et al., 2020). However, the results of other studies showed that facilitating conditions did not significantly affect e-wallet use (Jesuthasan & Umakanth, 2021; Penney et al., 2021).

This research is different from previous research which did not investigate the problems of using electronic payment systems from the perspective of usage barriers, value barriers, risk barriers, tradition barriers, privacy issues, and facilitating conditions. This research is important to do considering that users often experience obstacles in using electronic payment systems. Based on the background, the problem is formulated as follows:

1. Do usage barriers affect the interest in using electronic payment systems in the digital era in Medan?
2. Do value barriers affect the interest in using electronic payment systems in the digital era in Medan?
3. Do risk barriers affect the interest in using electronic payment systems in the digital era in Medan?
4. Do tradition barriers affect the interest in using electronic payment systems in the digital era in Medan?
5. Do privacy barriers affect the interest in using electronic payment systems in the digital era in Medan?
6. Do facilitating conditions affect the interest in using electronic payment systems in the digital era in Medan?

Models for investigating electronic payment system problems and their handling include Technology Acceptance Theory/TAM (Davis, 1989), Unified Theory of Acceptance and Use Technology/UTAUT (Venkatesh et al., 2003), and Innovation Resistance Theory/IRT (Ram & Sheth, 1989).

## METHODS

This study aims to investigate the influence of various barriers that affect user interest in using electronic payment systems based on barriers to use, technical problems, lack of user understanding, user errors, third-party interference, and high transaction volume levels as causes of electronic transaction failures and delayed funds. By developing solutions based on the above factors, it is hoped that electronic payment systems can become more reliable, efficient, and can provide a better user experience in conducting electronic transactions without significant failures or delays.

Sampling techniques that used in this study is a *non-probability sampling technique*. The respondents of this study were those who were qualified (Medan city residents /have visited Medan city), users of electronic payment systems and have experienced problems processing transactions with electronic payment systems. The questionnaire compiled using *google form* was sent to 120 students using *WA* and 93 of them returned it. Thus the response rate is 77.5%. The target place is Medan, because this city is a city with increasing use of electronic payment systems, especially among students. Data analysis using PLS version 3.0.

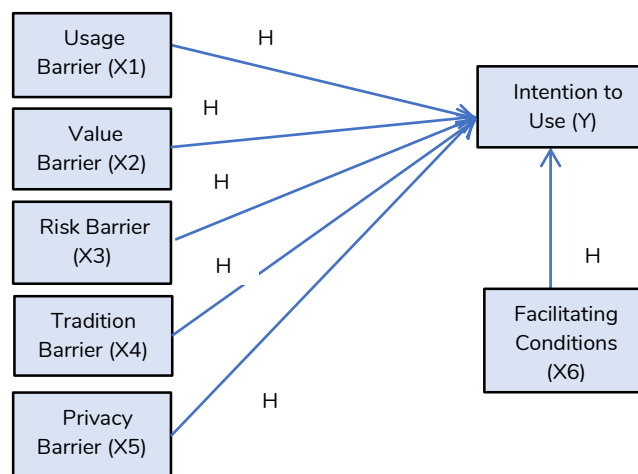


Figure 1. Conceptual Framework

## RESULTS AND DISCUSSION

### Descriptive Statistics

The results of the descriptive statistical analysis of this study are shown in Table 1 below:

Table 1. Descriptive Statistical Analysis

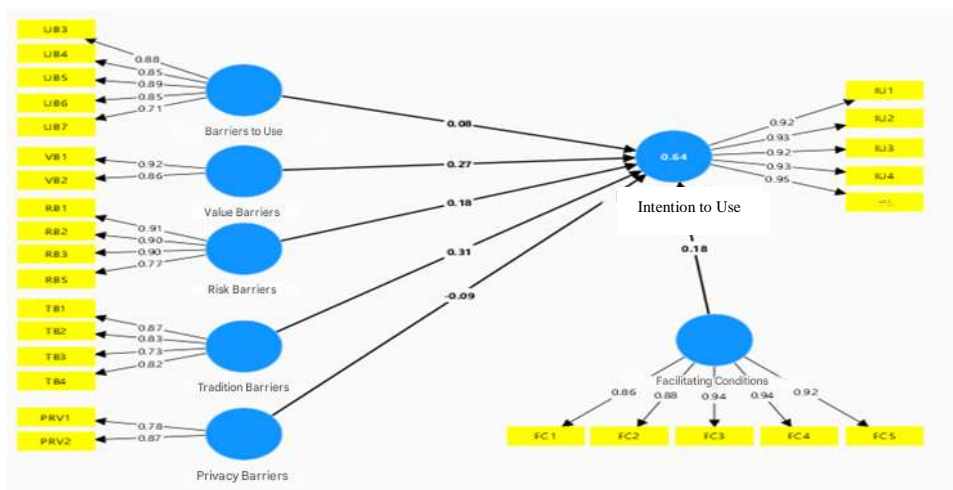
Name	Mean	Median	Min	Max	Standard deviation	Excess kurtosis	Skewness	Cramér-von Mises p-value
UB1	3.28	3.00	1.00	5.00	0.98	-0.60	-0.03	0.00
UB2	3.65	4.00	1.00	5.00	0.85	0.22	-0.52	0.00
UB3	3.40	3.00	1.00	5.00	0.97	-0.76	-0.10	0.00
UB4	3.43	4.00	1.00	5.00	0.99	-0.30	-0.41	0.00
UB5	3.46	4.00	1.00	5.00	0.98	-0.72	-0.14	0.00
UB6	3.49	4.00	1.00	5.00	0.92	-0.08	-0.40	0.00
UB7	3.40	3.00	1.00	5.00	0.93	-0.29	-0.31	0.00
VB1	4.05	4.00	1.00	5.00	0.86	0.49	-0.72	0.00
VB2	3.82	4.00	1.00	5.00	1.04	0.12	-0.74	0.00
RB1	4.05	4.00	2.00	5.00	0.75	-0.30	-0.40	0.00
RB2	4.18	4.00	2.00	5.00	0.75	-0.56	-0.47	0.00
RB3	4.13	4.00	2.00	5.00	0.72	0.20	-0.55	0.00
RB4	3.71	4.00	1.00	5.00	0.82	0.54	-0.58	0.00
RB5	3.91	4.00	1.00	5.00	0.89	0.15	-0.58	0.00
TB1	4.01	4.00	2.00	5.00	0.80	-0.74	-0.28	0.00
TB2	3.85	4.00	1.00	5.00	0.93	0.49	-0.68	0.00
TB3	3.85	4.00	1.00	5.00	0.90	1.49	-0.94	0.00
TB4	3.94	4.00	2.00	5.00	0.85	-0.74	-0.30	0.00
PRV1	3.24	3.00	1.00	5.00	1.08	-0.75	-0.02	0.00
PRV2	3.82	4.00	1.00	5.00	0.95	0.44	-0.77	0.00
FC1	3.94	4.00	2.00	5.00	0.79	-0.46	-0.29	0.00

Name	Mean	Median	Min	Max	Standard deviation	Excess kurtosis	Skewness	Cramér-von Mises p-value
FC2	3.88	4.00	2.00	5.00	0.73	-0.38	-0.15	0.00
FC3	4.00	4.00	2.00	5.00	0.76	-0.47	-0.30	0.00
FC4	4.03	4.00	2.00	5.00	0.78	-0.60	-0.33	0.00
FC5	3.98	4.00	2.00	5.00	0.78	-0.62	-0.24	0.00
IU1	4.24	4.00	2.00	5.00	0.80	-0.79	-0.59	0.00
IU2	4.11	4.00	2.00	5.00	0.80	-0.58	-0.46	0.00
IU3	4.08	4.00	2.00	5.00	0.85	-0.69	-0.47	0.00
IU4	4.10	4.00	2.00	5.00	0.80	-0.67	-0.43	0.00
IU5	4.15	4.00	2.00	5.00	0.84	-0.49	-0.62	0.00

Sumber: Output SmartPLS

### Convergent Validity

Based on Figure 2, it can be seen that all indicators in each research variable have a value > 0.07 so that they can be declared valid. Thus, convergent validity is met and there are no more indicators that must be removed from the research model.



Sumber: Output SmartPLS

Figure 2 The model results from the PLS algorithm

### Reliability

Table 2. Cronbach's alpha and Composite reliability values

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Value Barriers	0.75	0.79	0.89	0.80
Usage Barriers	0.89	0.90	0.92	0.71
Privacy Barriers	0.53	0.54	0.81	0.68
Risk Barrier	0.89	0.92	0.93	0.76
Traditional Barriers	0.83	0.85	0.89	0.67
Facilitating	0.95	0.95	0.96	0.82

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Conditions Behavioral Intention to Use	0.96	0.96	0.97	0.87

Sumber: Output SmartPLS

Based on table 2, the Cronbach's Alpha value and Composite Reliability value for the variables FC (Facilitating Conditions), IU (Interest in Using), RB (Risk Barriers), TB (Traditional Barriers), UB (Use Barriers), V (Visibility) and VB (Value Barriers) have values greater than 0.7 which indicates that the constructs in this study can be stated as consistent because they have good reliability values and are categorized as valid. Meanwhile, the Cronbach's Alpha value and Composite Reliability value for the PRV (Privacy Issues) variable have values smaller than 0.7 which indicates that the PRV variable does not have good reliability values.

### Hypothesis Testing

**Table 3.** Hypothesis Testing Results

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistic ( O/STDEV )	Nilai P values (P values)
Value Barriers -> Intention to Use	0.27	0.26	0.12	2.28	0.02
Usage Barriers -> Intention to Use	0.08	0.08	0.10	0.85	0.39
Privacy Barriers -> Intention to Use	-0.09	-0.08	0.11	0.85	0.40
Risk Barriers -> Intention to Use	0.18	0.18	0.12	1.54	0.12
Tradition Barriers -> Intention to Use	0.31	0.32	0.14	2.24	0.03
Facilitating Conditions -> Intention to Use	0.18	0.18	0.12	1.55	0.12

Sumber: Output SmartPLS

### The Influence of Usage Barriers on Interest in Using

The first hypothesis investigates whether barriers to use have a negative effect on the interest in using electronic payment systems. The results of data processing that have been carried out indicate that the barrier to use variable does not have a significant positive effect on the interest in using variable. This can be seen from the t-statistic value of 0.85 (less than 1.96), the p-value of 0.39 (more than 0.05) and the coefficient value of 0.08 which indicates a positive relationship with the interest in using. Thus, the data processing results support this hypothesis and can accept the results of previous research where barriers to use occur

when innovation conflicts with current consumer workflows and habits (P. Kaur, Dhir, Bodhi, et al., 2020; P. Kaur, Dhir, Ray, et al., 2020). The same results were also proven by research (Arif et al., 2020) that barriers to use had a negative effect on interest in using internet banking.

#### **The Influence of Value Barriers on Interest in Using**

The second hypothesis states that perhaps value barriers have a negative effect on the interest in using electronic payment systems. However, based on the results of data processing that has been carried out, it shows that the value barrier variable has a significant effect on the interest in using. This can be seen from the t-statistic value of 2.28 (more than 1.96), the p-value of 0.02 (less than 0.05) and the coefficient value of 0.27 which indicates a positive relationship with the interest in using. The research results are not in line with previous research showing that value barriers have a negative relationship with interest in use (S. Kaur & Arora, 2020) in the context of electronic payment systems. Other research results show an insignificant relationship between value barriers and intention to use (P. Kaur, Dhir, Singh, et al., 2020). Previous research also reported that value barriers have no impact on intention to use (León, 2021).

#### **The Influence of Risk Barriers on Interest in Using**

The third hypothesis states that risk barriers may have a negative effect on the interest in using electronic payment systems. This is in line with the results of data processing that has been carried out showing that the risk barrier variable does not have a significant effect with a positive direction on the interest in using variable. This can be seen from the t-statistic value of 1.54 (less than 1.96), the p-value of 0.12 (more than 0.05) and the coefficient value of 0.18 which indicates a positive relationship with the interest in using. Risk barriers can be a potential barrier to the acceptance, use, and intention to recommend mobile payment services due to the uncertainty they create (P. Kaur, Dhir, Singh, et al., 2020). Risk barriers have also been shown to be unrelated to delays in the adoption of mobile payment services (Khanra, Dhir, Kaur, et al., 2020).

#### **The Influence of Traditional Barriers on Interest in Using**

The fourth hypothesis also states that risk barriers may have a positive effect on the interest in using electronic payment systems. This hypothesis is in line with the results of data processing that has been carried out, which shows that the tradition barrier variable has a significant effect on the interest in using. This can be seen from the t-statistic value of 2.24 (more than 1.96), the p-value of 0.03 (less than 0.05) and the coefficient value of 0.31 which indicates a positive relationship with the interest in using. The fourth hypothesis tests the influence of traditional barriers (trust) on the interest in using. The results of the study (P. Kaur, Dhir, Ray, et al., 2020) showed that traditional barriers occur due to trust issues, for example they do not trust and feel unsafe using a particular system. When users lose trust in the electronic payment system, they will refrain from using it.

#### **The Influence of Privacy Barriers on Intention to Use**

The fifth hypothesis investigates whether privacy barriers have a positive effect on the interest in using electronic payment systems. The results of data processing show the opposite result, that the privacy barriers variable does not have a significant effect with a

negative direction on the interest in using variable. This can be seen from the t-statistic value of 0.85 (less than 1.96), the p-value of 0.40 (more than 0.05) and the coefficient value of -0.09 which indicates a negative or opposite relationship to the interest in using. Privacy concerns are associated with the fear of exposing consumers' sensitive personal and financial information to unauthorized access (Khanra, Dhir, Islam, et al., 2020). Privacy risks are associated with users' anxiety about the disclosure of sensitive user information (F. D, 1985).

### **The Influence of Facilitating Conditions on Interest in Using**

The sixth hypothesis states that facilitating conditions have a positive effect on the interest in using electronic payment systems . Based on the results of data processing that has been carried out, it shows that the facilitating condition variable does not have a significant effect in a positive direction on the interest in using variable. This can be seen from the t-statistic value of 1.55 (less than 1.96), the p-value of 0.12 (more than 0.05) and the coefficient value of 0.18 which indicates a positive relationship towards interest in using. Facilitating conditions towards the intention to use electronic payment systems (Ajzen, 1980). These results are supported by other researchers, that every problem can be overcome through the help of others (Leong et al., 2020).

## **CONCLUSION**

Users who are less skilled in using technology or lack of understanding of the electronic transaction process can cause errors in entering data or performing payment steps, which then result in transaction failure. The level of user understanding and awareness of the electronic payment system affects the electronic payment system. Handling of electronic payment system problems is overcome by following infrastructure improvements, use of more reliable technology, improving data security, reliable infrastructure, and user education and training. Infrastructure improvements, use of more reliable technology, improving data security, reliable infrastructure, and user education and training. The improvement of the electronic payment system infrastructure is intended to obtain reliable technological infrastructure, system scalability, service availability, infrastructure security, provision of backup, and regular updates and maintenance. Reliable technological infrastructure updates and improves the technological infrastructure that supports the electronic payment system, including network servers and transaction platforms to ensure the availability and reliability of services. System scalability ensures that the electronic payment system infrastructure can handle large transaction volumes quickly and efficiently, and can be increased in capacity in accordance with growth in usage. Service availability ensures the availability of electronic payment system services without interruption so that users can transact whenever needed. Strengthening the security of electronic payment system infrastructure by implementing technological security measures such as firewalls, detection, and real-time security monitoring. Providing backup infrastructure that is ready to be used in emergency situations or major system failures to ensure the continuity of electronic payment system operations. As well as conducting software updates and routine maintenance of technological infrastructure periodically to ensure optimal performance and system security. Future

research is expected to investigate the interest in continuing to use electronic payment systems by increasing the number of respondents, and testing other variables such as performance expectations.

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