

DOI: <https://doi.org/10.38035/dijemss.v8i1><https://creativecommons.org/licenses/by/4.0/>

Received: 09 May 2026 | Revised: 16 May 2026 | Accepted: 24 September 2026

How Important is User Interface for Indonesian Digital Payment?

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Abstract: Digital payment services have grown rapidly in Indonesia, with numerous providers competing for market share and shifts in market leadership over time. Fierce competition demands digital payment service providers to understand their customers in order to maintain and increase continuous usage. Literature showed that Perceived Risk and UI/UX can affect Customer Satisfaction and Continuance Intention. Data were collected from 109 respondents in the Greater Jakarta (Jabodetabek) area and analyzed using partial least squares structural equation modeling (PLS-SEM). The results showed that Perceived Risk was negatively associated with Customer Satisfaction, whereas UI/UX was positively associated with Customer Satisfaction. Customer Satisfaction was positively associated with Continuance Intention and significantly mediated the relationships between Perceived Risk and Continuance Intention and between UI/UX and Continuance Intention. The findings highlight the association of UI/UX with Customer Satisfaction and, indirectly, with Continuance Intention among Generation Z digital wallet users in the Jabodetabek area.

Keyword: Continuance Intention, Customer Satisfaction, Digital Payment, Perceived Risk, UI/UX.

INTRODUCTION

Covid-19 encouraged Indonesian customers to embrace cashless payment method resulting in the rise of digital payment method. According to Central Bank of Indonesia, transaction value rose from 305.4 billion IDR in 2021 to 407.5 billion IDR in 2022 (Indonesia Investments, 2023). Rapid rise in transaction value showed more interest in digital payment among Indonesian customers. There are many digital payment service providers in Indonesia and the competition is tough. Research by Neurosensus showed that on the first quarter of 2021, ShopeePay is leading in market penetration and transaction (Pressrelease.id, 2021). Another survey by Kadence International showed that OVO is leading with 31% followed by Gopay with 25% (Catriana, 2022). However, in 2022 research by InsightAsia showed that Gopay is leading with 58%, followed by OVO (Ramadhanty, 2023). These results showed that

competition among digital payment service providers is fierce. Customers have choices and digital payment service providers must understand customers' preferences in order to remain competitive.

To retain customers, digital wallet service providers should understand factors that affect customer's continuance intention. Pangestu and Sakresna (2021) found that customer satisfaction significantly affects continuance intention. Chen, Yen, and Hwang (2022) also found similar results with customer satisfaction significantly affecting intention to continue using service. Tzavlopoulos, et al. (2019) found that Perceived Risk significantly affects Customer Satisfaction, the same result was also found by Khasbulloh and Suparna (2022). Perceived Risk is not the only factor affecting Customer Satisfaction, Tanuwijaya and Suharto (2019) found that UI/UX (User Interface/ user Experience) has significant effect on Customer Satisfaction. Since digital payment service is using digital interface, UI/UX is an important factor for customers.

With the fierce competition in digital payment service industry, companies need to find important factors influencing Continuance Intention. This is important for the service provider companies to stay competitive. This research will study the effect of Perceived Risk and UI/UX on Continuance Intention with Customer Satisfaction as mediating variable. This research combined UI/UX with Perceived Risk in a model to predict Continuance Intention.

There are three research questions to be answered in this research:

1. What is the effect of Perceived Risk on Customer Satisfaction?
2. What is the effect of UI/UX on Customer Satisfaction?
3. What is the effect of Customer Satisfaction on Continuance Intention?
4. Does Customer Satisfaction mediate effect of Perceived Risk on Continuance Intention?
5. Does Customer Satisfaction mediate effect of UI/UX on Continuance Intention?

Yang & Jong (2021) defined continuance intention as a situation where an individual decide to continuously perform an action. Continuance intention means an individual decides to follow through initial action or to consciously continue performing the action. In digital payment service, this can mean the individual decides to continuously use the service in the future. Amoroso & Lim (2017) argued that continuance intention is a rational decision, there is clear intention to continuously use the service. After considering several factors including experience, the individual will rationally choose to use the same service in the future.

To be able to make rational decisions on continuously using a service, an individual will consider previous experience. If the individual is satisfied with the experience, the individual can rationally choose to continue using the service. Li & Fang (2019) found that customer satisfaction played an important role when deciding on continuance intention. When the individual experiences satisfaction, the individual can rationally choose to continuously use the service. This argument is supported by Pangestu and Sukresna (2021) who found that satisfaction will lead an individual to choose using the same service in the future. These studies showed the importance of Customer Satisfaction in affecting Continuance Intention.

Ventre & Kolbe (2020) defined risk as expectation of losses, this risk is faced by customers when deciding to purchase a good or service. When deciding to purchase something, customers will consider the benefits and losses (Courage, Zakari, and Abel, 2019). If losses are perceived as greater than benefits, customers might refrain from purchase. However, when benefits are perceived as greater than losses, customers might perform the purchase. Pauchard (2019) compared several risks in which are social risk, financial risk, performance risk, time risk, and psychological risk. These risks are affecting customers in adopting mobile payment.

Perceived Risk can affect customer satisfaction in a negative relationship (Tzavlopoulos, et al., 2019). When risk is higher, customer satisfaction will decline. Khasbulloh and Suparna (2022) also found the same result; perceived risk has a negative effect on customer satisfaction.

These studies showed that perceived risk can affect customer satisfaction negatively, resulting in lower customer satisfaction for services that are perceived as higher in risk.

In digital payment service, customers don't have face to face interaction with service providers, customers only interact with user interface of digital application enabling them to conduct digital payment. Himawan & Yanu (2018) stated that user interface can be considered good when it provides ease of use and comfort for customers. Sharma & Tiwari (2021) defined user interface as bridge between user and technical tool that can enable user to finish certain tasks. They elaborate that user experience can be used to gain feedback to improve.

Morville (2004) in Raemy (2017) proposed user experience honeycomb consists of useful, usable, findable, accessible, credible, desirable, and valuable. This model can determine priority in designing the system. Kim (2020) found that user experience honeycomb can provide visualization of overall satisfaction. By using this model, designers can understand how users experience the system. User experience can't be separated from user interface because user experience comes from facing and navigating through user interface.

Tanuwijaya and Suharto (2019) found that good UI/UX can positively affect customer satisfaction. Another research by Rahayu, et al. (2022) also found that good UI/UX can positively affect customer satisfaction. These studies showed the importance of UI/UX for customer satisfaction.

Previous studies showed negative effects from perceived risk to customer satisfaction (Tzavlopoulos, et al., 2019; Khasbulloh and Suparna, 2022). UI/UX has positive effect on Customer Satisfaction (Tanuwijaya & Suharto, 2019; Rahayu, et al., 2022). Then, customer satisfaction also has positive effect on Continuance Intention (Li & Fang, 2019; Pangestu & Sukresna, 2021). Although previous studies have separately examined the relationships between Perceived Risk and Customer Satisfaction and between UI/UX and Customer Satisfaction, limited attention has been given to their simultaneous roles in explaining Continuance Intention through Customer Satisfaction, particularly among Generation Z digital wallet users in Indonesia. Based on previous studies, this research proposed 5 hypotheses to be tested:

Hypothesis 1: Perceived Risk has negative and significant effect on Customer Satisfaction.

Hypothesis 2: UI/UX has positive and significant effect on Customer Satisfaction.

Hypothesis 3: Customer Satisfaction has positive and significant effect on Continuance Intention.

Hypothesis 4: Customer Satisfaction mediates effect of Perceived Risk on Continuance Intention

Hypothesis 5: Customer Satisfaction mediates effect of UI/UX on Continuance Intention

METHOD

This research was conducted using quantitative method to test relationships between variables. There are two independent variables in this research which are Perceived Risk and UI/UX. The dependent variable in this research is Continuance Intention, and Customer Satisfaction is mediating variable. Population used for this research was Generation Z using digital wallets in Jabodetabek area. The final sample consisted of 109 Generation Z digital wallet users from the Jabodetabek area. Given the use of PLS-SEM, sample adequacy should be evaluated based on the statistical power required to detect the expected effects in the structural model rather than solely on an indicator-based rule of thumb. Samples criteria include possessing at least one digital wallet and using at least one frequently. Samples were gathered using convenience sampling method with 109 samples collected from Jabodetabek area in Indonesia by using google form sent to authors' network, 50.94% of samples are females (49.06% males). 49% samples are using more than 3 digital payment service providers and 25.47% using 3.

Statistical test was performed using Structural Equation Modeling – Partial Least Square with 95% confidence level. The first test is validity test by measuring outer loadings of each indicator as shown in Table 1.

Table 1. Initial Validity Test

	<i>CONTINUANCE INTENTION</i>	<i>PERCEIVED RISK</i>	<i>CUSTOMER SATISFACTION</i>	<i>UI/UX</i>
CI1	0.901			
CI2	0.893			
CI3	0.812			
CS1			0.616	
CS2			0.908	
CS3			0.869	
PR1		0.693		
PR2		0.822		
PR3		0.839		
PR4		0.810		
PR5		0.740		
UIX1				0.541
UIX10				0.785
UIX2				0.675
UIX3				0.672
UIX4				0.799
UIX5				0.858
UIX6				0.730
UIX7				0.838
UIX8				0.761
UIX9				0.769

In the initial measurement model, CS1 (0.616), UIX1 (0.541), and PR1 (0.693) had outer loadings below 0.70. The decision to remove these indicators should consider not only their loading values but also their theoretical relevance, content validity, and the resulting construct reliability and convergent validity. On the second test, all indicators are more than 0.7 as shown in Table 2.

Table 2. Second Validity Test

	<i>CONTINUANCE INTENTION</i>	<i>PERCEIVED RISK</i>	<i>CUSTOMER SATISFACTION</i>	<i>UI/UX</i>
CI1	0.903			
CI2	0.892			
CI3	0.811			
CS2			0.929	
CS3			0.919	
PR2		0.830		
PR3		0.835		
PR4		0.836		
PR5		0.733		
UIX10				0.800
UIX4				0.817
UIX5				0.875
UIX6				0.765
UIX7				0.856
UIX8				0.820
UIX9				0.751

After testing validity, the next step was reliability testing. Result showed that all variables are reliable as shown in Table 3

Table 3. Reliability Test

	<i>Cronbach's Alpha</i>	<i>Composite Reliability</i>
<i>UI/UX</i>	0.914	0.932
<i>PERCEIVED RISK</i>	0.825	0.884
<i>CONTINUANCE INTENTION</i>	0.838	0.903
<i>SATISFACTION</i>	0.828	0.921

Tabel 4. VIF Results

	<i>CONTINUANCE INTENTION</i>	<i>PERCEIVED RISK</i>	<i>SATISFACTION</i>	<i>UI/UX</i>
<i>CONTINUANCE INTENTION</i>				
<i>PERCEIVED RISK</i>			1.023	
<i>SATISFACTION</i>	1.000			
<i>UI/UX</i>			1.023	

The reported VIF values were below the specified threshold, indicating no critical collinearity concerns among the predictor constructs included in the structural model. After testing validity and reliability, the next step was testing relationship between variables. For this purpose, the test was utilizing t-test to determine significance of relationship between variables as shown in Table 4. R Square was also tested as shown in Table 5.

Table 5. T-Test Results

	<i>Effect</i>	<i>T Statistics</i>	<i>P Values</i>	<i>Result</i>
<i>UI/UX -> CUSTOMER SATISFACTION</i>	0.670	9.165	0.000	Significant
<i>PERCEIVED RISK -> CUSTOMER SATISFACTION</i>	-0.155	1.993	0.042	Significant
<i>CUSTOMER SATISFACTION -> CONTINUANCE INTENTION</i>	0.699	11.499	0.000	Significant

Table 6. R Square

	<i>R Square</i>
<i>CUSTOMER SATISFACTION</i>	0.505
<i>CONTINUANCE INTENTION</i>	0.488

RESULTS AND DISCUSSION

Statistic results for Perceived Risk and Customer Satisfaction showed that the t-statistics is $1.993 > 1.96$ and p-value is $0.042 < 0.05$. This result showed that there is a significant effect from Perceived Risk to Customer Satisfaction and the effect is -0.155. According to this result, there is negative and significant effect from Perceived Risk to Customer Satisfaction. Thus, hypothesis 1 is accepted.

Statistics for UI/UX and Customer Satisfaction showed that the t-statistics is $9.165 > 1.96$ and p-value is 0.000. This result showed that there is a significant effect from UI/UX to Customer Satisfaction and the effect is 0.670. According to this result, there is positive and significant effect from UI/UX to Customer Satisfaction. Thus, hypothesis 2 is accepted.

Statistic results for Customer Satisfaction and Continuance Intention showed that the t-statistics is $11.499 > 1.96$ and p-value is 0.000. This result showed that there is a significant effect from Customer Satisfaction to Continuance Intention and the effect is 0.699. According to this result, there is positive and significant effect from Customer Satisfaction to Continuance Intention. Thus, hypothesis 3 is accepted.

Table 6. Indirect Effects

	<i>Effect</i>	<i>T Statistics</i>	<i>P Values</i>	<i>Result</i>
UI/UX -> CUSTOMER SATISFACTION -> CONTINUANCE INTENTION	0.468	6.240	0.000	Significant
PERCEIVED RISK -> CUSTOMER SATISFACTION -> CONTINUANCE INTENTION	-0.108	2.000	0.042	Significant

Indirect effects in Table 6 also showed that there are negative and significant indirect effects from Perceived Risk to Continuance Intention through Customer Satisfaction. Results showed that Customer Satisfaction mediates effect of Perceived Risk and UI/UX to Continuance Intention, thus hypothesis 4 and hypothesis 5 are accepted. UI/UX also has positive and significant indirect effects to Continuance Intention through Customer Satisfaction. These results showed that Customer Satisfaction can mediate relationship between Perceived Risk and UI/UX to Continuance Intention. UI/UX has 0.670 effect on customer satisfaction, the design and interface are important for customers in continuing to use digital wallets. Perceived Risk negatively affects customer satisfaction; higher risk reduces satisfaction and eventually dissuades customers from continuance.

Results of this research support previous studies. Perceived Risk has negative and significant effect on Customer Satisfaction (Tzavlopoulos, et al., 2019; Khasbulloh and Suparna, 2022). UI/UX has positive effect on Customer Satisfaction (Tanuwijaya & Suharto, 2019; Rahayu, et al., 2022). Then, customer satisfaction also has positive effect on Continuance Intention (Li & Fang, 2019; Pangestu & Sukresna, 2021). Although results are partially similar to previous studies, this research combined Perceived Risk and UI/UX in a model. The R^2 value for Continuance Intention was 0.488, indicating that 48.8% of the variance in Continuance Intention was explained by its predictor(s) in the estimated structural model. This shows the significance of UI/UX in determining customers' satisfaction and continuance intention. Samples for this research were younger customers that may be attracted to better digital interface. Generation Z customers are digital natives used to having digital services in their lives. They are interested in attractive interface and pleasant user experience.

Customers can gain more satisfaction and have higher continuance intention when perceived risk is lower. Perceived risk has negative effect on customer satisfaction and indirect negative effect on continuance intention, so, digital payment service provider should be able reduce their perceived risk by providing assurance and maintain credibility. This result is expected because higher risk can dissuade customers from using the service.

UI/UX has positive effect on customer satisfaction and indirect positive effect on continuance intention. This result means that digital payment service providers must provide good user interface for customers. Designing good user experience is also important. Among the retained UI/UX indicators, usable (UIX5), findable (UIX7), accessible (UIX8), and useful (UIX4) showed relatively high outer loadings. These values indicate strong relationships between the indicators and the UI/UX construct but should not be interpreted as evidence that these dimensions are necessarily the most important attributes for Indonesian customers.

CONCLUSION

This research was performed to answer three research questions stated in the first part of this paper. Statistical test was performed and showed significant results. So, the answers to research questions are:

1. Perceived risk has negative and significant effect on customer satisfaction. The higher the perceived risk, customer satisfaction will suffer. Customers need to feel secure in using digital wallet, service providers can lower perceived risk by providing credibility.
2. UI/UX has positive and significant effect on customer satisfaction. Good UI/UX can increase customer satisfaction. This means that Indonesian younger customers are affected by UI/UX and the strongest indicators are usable, findable, accessible, and useful. Digital payment providers can increase visibility and access to their services by integrating more payment networks.
3. Customer satisfaction has positive and significant effect on continuance intention. Digital payment service providers must increase customer satisfaction to increase continuance intention. To increase customer satisfaction, they can lower perceived risk and improve UI/UX.
4. Customer satisfaction mediates effect of Perceived Risk to Continuance Intention. Perceived Risk negatively affects customer satisfaction and indirectly affects continuance intention. Digital payment providers need to lower perceived risk to maintain their customers.
5. Customer satisfaction mediates effect of UI/UX to Continuance Intention. UI/UX positively affects customer satisfaction and indirectly affects continuance intention. Interface needs to be useful, usable, accessible, and findable to increase customer satisfaction and continuance intention.

User Interface or UI/UX has significant roles to maintain customer and increase continuance intention. By optimizing user interface to customers' preference, digital payment service providers can increase continuous usage. This research has several limitations; samples were gathered only from Jabodetabek area which might not represent other areas. Sampling method was convenience sampling and might not represent more diverse societal spectrum.

Future studies can aim to gather more samples from other areas or other generations. Research model can also be developed further by adding other relevant variables. Different research methods might also be used to increase depth of the research.

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