

Understanding E-Payment Security Behavior Z Generation's Perceived Explanation

M. N. Ardiansah, Eka Murtiasri, Sarana, Agus Suwondo, Afiat Sadida Accounting Department Politeknik Negeri Semarang (Polines) Semarang Central Java, Indonesia mnardiansah@polines.ac.id

Abstract - This study's purpose is to investigate the factors of epayment security perception for purchase intentions. This research focused on Indonesian demographics and the e-payment experience. SEM was used to analyze data from Z generation representatives. The findings indicate that purchase intention is influenced by ease of use, usefulness, and e-payment security perception. E-payment security is influenced by perceived ease of use and usefulness. Perceived usefulness mediates the relationship between perceived ease of use and e-payment security. The result provides user characteristics following the trend, considering the security aspects of the e-transaction as well as usability and facility factors.

Keywords— e-payment security, e-commerce, customers perception, z generation

I. INTRODUCTION

The existence of e-commerce has had a significant impact on Indonesia's economic position in global business, as illustrated by the growth of e-commerce sales of 134% and the largest market share in the Asia-Pacific region [1]. Ecommerce technologies, which allow for the conduct of business practices in the absence of direct human interaction and include electronic payment known as e-payment, have managed to gain popularity in recent years. E-commerce includes electronic payments as a feature, and these payments are an essential part of the infrastructure for completing the transaction more feasibly [2].

Based on the latest Indonesian population census data in 2021, the number of generation z has reached 27.8% and will increase to 45% in the next five years [3]. The Z generation makes effective use of technology, possesses a pragmatic and open mind, requires experience and appropriate purchasing motives spends more time purchasing items but is less loyal to the brand than the earlier generations did [4]. On the other hand, they have the potential to be more dependable than conventional electronic word-of-mouth publicity [5]. They believe that e-commerce platforms are related to the significance and usefulness of their lifestyles, even though there are several risks related to financial privacy and security [4].

The development of information technology needs to have strong digital security to protect the identification, privacy, and other sensitive user financial resources [6]. It is difficult to obtain data relating to fraudulent e-payments brought on by several security flaws, which have a significant impact on fraudulent activity in corporate finance [7]. In the years 2020-2021, when the pandemic was at its height, there was a rise in fraudulent activity concerning the safety of online transactions that reached 18 percent. This demonstrates how vitally important the safety of online transactions is. particularly e-payments. The Z generation uses technology intensely, has a practical and open mind, needs experience and appropriate buying motives, and spends more time purchasing but is less loyal to the brand than the early generations [8]-[10].

Several previous investigations into the safety of epayments in Indonesia came to some bad conclusions. Epayment security is addressed by certain determinants of epayment, including customer satisfaction, customer intentions, and convenience. However, these determinants are, unfortunately, limited [11]. Other researchers have investigated the extent to which they believe that certain factors, such as perceived usefulness and ease of use, as well as gender as a mediator of e-payment intention, play a role in determining ecommerce purchase intention [12]–[14]. As a result, the impact of e-payment security on customer perception in e-commerce transactions is worth investigating. The purpose of this research was to investigate the factors that influence consumer shopping intentions regarding online payment security. The results of this research will result in increased understanding and insight regarding electronic payments. The research helps with the development of security measures for online commerce and electronic payment systems, both in the classroom and in the real world.

The proposed e-payment security studies found that the presented variables are easy to navigate, sensitive to use, safe, and intended [15]. Several studies have found that the user's perception of how easy it is to use is strongly linked to the function and influences how useful they think the product is [16], [17]. While other research has begun to use modeling to

investigate other potential antecedents of perceived ease of use, this research has only studied the issue of the current extension of TAM.[18], [19]. The perceived ease of using technology ought to have a direct impact on people's attitudes toward using it [20]. As a result, the hypothesis has evolved: H1: There is a positive effect on the relationship between perceived ease and purchase intention.

According to [21], the reliance that consumers evaluate on the transactions conducted through e-commerce leads to an increased risk for more than just their financial health, even though authentication certificates are practically never looked at to confirm that measures are implemented [22], [23]. It has been reported that an individual's intent to use technology will directly impact [24], [25]. The hypothesis, therefore, evolved as:

H2: There is a positive effect on the relationship between perceived usefulness and purchase intention.

Acceptance of electronic payments can be influenced by a variety of factors, including the perceived benefits of e-payments, the ease of using the system, the perceived quality, the perceived security of the system, user confidence in e-payment systems, and perceptions of a reduced level of self-efficiency [26]. Additionally, a few studies have found that perceived usability has a positive influence on perceived security. This is because authentication is a component of the security mechanisms. [27]. According to the findings of [21], customers' reliance on e-commerce transactions exposes them to dangers other than financial ones, even though certificates are rarely recognized for security authentication. This fact can explain how moderate authentication support has a history of perceived security. Thus,

H3: There is a positive effect on the relationship between perceived ease of use and the e-payments security

Customers' intentions were influenced by e-payment security when it came to positively affecting their safety and security. According to some results, using electronic payment methods to transmit private information such as a social security number, credit card number, or bank account number is a safe practice [2]. It is reasonable that the existence of any safety aspect can be closely associated with the successful completion of the transaction. [28]. Thus,

H4: There is a positive effect on the relationship between perceived e-payment security and purchase intention

In addition to all this, it was clearly illustrated that efforts and decisions are reportedly being made to make use of technology to improve the specificity of the findings produced [29]. There is a correlation between the behavior of a user within a technological system, the user's perception of the system's ease of use, and the amount of assistance that the user receives [30]. The engagement of an e-commerce intermediary has an effect not only on ease of use but also on consumers' intentions to make purchases [31]. It has been confirmed that the security of e-payment for purchases is a mediating variable for use in external purposes. Thus,

H5a: Perceived usefulness mediates the relationship between perceived ease of use and e-payment security,

H5b: E-payment security mediates the relationship between perceived ease of use and purchase intention.

II. METHOD

College students who made use of Go-Pay, Ovo, or Shopeepay as an electronic payment method comprised the study's population. It was decided that the purchasing habits of the Z generation would be best represented by the college student. The scales with five points were utilized for the online survey that was used to compile the data that was collected. This questionnaire was distributed to users for two months May and June of 2021. To collect sufficient data, each respondent was required to fill out the questionnaire, and they were also given the ability to share the link with others. The collected information would be optimized without taking into account the sample's proportionality, which would be the case.

The research utilized Structural Equation Modeling (SEM) to analyze the data, which investigated, first, the direct effect of the determinant of intention on online purchasing, and second, the indirect effect on the role of perceived usefulness in the context of the research. Within the framework of SEM, four stages comprise the investigation of the connections between the various variables [32]. First, the measurement model analyzes the validity and reliability of the indicators and the latent variables that they represent. Second, the structural model considers the magnitude of these latent variables by basing its analysis on the content of the theory. R-Square, Predictive Relevance (Q2), and Goodness of Fit are the three metrics that can be utilized to evaluate the structural model (GOF). Third, the presence of any structural errors in the model specification and fit will determine how well the model fits its data. The final step is to put the hypothesis to the test through a process called bootstrapping, which involves resampling each of the original data points. [32]. The decision will be approved if the path coefficient t-value is greater than the t-statistics value (1.96). Exogenous, endogenous, and mediating variables are evaluated utilizing path coefficients, total effects, and particular indirect effects. VAF is a technique for determining the identified level of mediation in a model utilizing the mediating or intervening variable.

III. RESULT AND DISCUSSION

The data collected had 152 items, but only 136, as 16 data did not complete. The results show that Table 1 presents the demographics of the respondents. Table 1 shows that the respondents consisted of 71 females (52.2%) and 65 males (47.8%), with 65.4% of respondents using e-commerce over the last nine months. With an accumulated percentage of 83,8%, most respondents had an account balance of less than IDR 500.000,00 per month. Most of the respondents (41,3%) chose mobile banking as a top-up amount option. Respondents in this study are frequent users of the e-payment feature with moderate financial intensity. Apart from being a student, there is also an age that does not yet have expansive needs.

A result found in panel A shows that the indicator loading factor for each latent variable was more than 0.7. The measurement of AVE was valid, and the discriminant test indicated that it had an AVE measurement of greater than 0.5. It showed that each variable is valid. The development of the difficulties in panel B shows that the Composite Reliability of each variable is more significant than 0.7, demonstrating that each variable is reliable.

TABLE I. DESCRIPTIVE STATISCIC

Descri	ption	Amount Percentag	
Sex	Male	65	47.8%
Sex	Female	71	52.2%
	< 3 months	18	13.2%
E-Commerce used	3 – 9 months	29	21.4%
E-Commerce used	9 – 12 months	46	33.8%
	> 12 months	43	31.6%
Balance of e-payment per month (IDR)	<200.000	22	16.2%
	201.000 - 500.000	88	64.7%
	501.000 – 1.000.000	26	19.1%
Top-up options	Merchant	32	23.5%
	ATM	24	17.6%
	Mobile banking	56	41.3%
	Internet banking	24	17.6%

The path coefficient and R2 were used to evaluate the structural model. At level 5% significance, all the path coefficients shown in Table 3 were significant. The path coefficient and R2 were used to evaluate the structural model. According to the adjusted R2 value, perceived ease of use (PEU), perceived usefulness (PU), and purchase intention (PI) all have moderate display variation. Table 2 Panel C examined the goodness of fit model as well. Determine the goodness of the fit model between the estimation model and the optimally obtained model by comparing the values of SRMR between the saturated and estimation models.

TABLE II. THE INNER, OUTER, AND GOODNESS OF MODEL

A. Convergent and Discriminant Validity Test							
	Outer Loading Factor						
Indicators	Purchase Intention	Perceived Ease of Use	Perceived Usefulness	E-Payment Security			
a1	0.872	0.884	0.837	0.815			
a2	0.877	0.844	0.982	0.812			
a3	0.853	0.987 0.882		0.869			
a4	0.811	0.846	0.859	0.864			
a5	-	0.923	1	0.857			
AVE	0.887	0.878	0.897	0.888			
Square AVE	0.786	0.771 0.804		0.788			
B. Reliability Test							
Composite Reliability	0.932	0.921	0.971	0.933			
Cronbach alpha	0.879	0.923 0.927		0.892			
C. Goodness of Fit Model							
R ²	0.771	-	0.665	0.559			
Adjusted R ²	0.751	-	0.688	0.568			
SRMR:	0.089						
•	0.089						

The research was divided into two phases: the first examined the direct impact of perceived usefulness, perceived navigational convenience, and e-payment security on purchase intentions. Secondly, mediation affects e-payment security. It was done under the conditions of [32]: firstly, significant direct effect coefficients between variables; secondly, significant total effect coefficients between variables; and three, identifying whether the indirect effect value is greater than the direct effect value, so it is concluded that the variables mediate the relationship.

TABLE III. THE RELATIONAL EFFECT

	Direct Effect		Total Effect		
	Coeff	ρ	Coeff	ρ	
PU → PI	0.511	0.000*			
EPS → PI	0.251	0.016*			
PEU → PI	0.417	0.008*			
PEU → PU	0.671	0.000*			
PEU → EPS	0.384	0.000*			
$PU \rightarrow EPS \rightarrow PI$	0.279	0.001*	0.329	0.000*	
PEU → EPS → PI	0.349	0.000*	0.385	0.000*	
$PEU \rightarrow PU \rightarrow EPS$	0.283	0.002*	0.351	0.000*	
PEU → PU → EPS →PI	0.238	0.046*	0.369	0.000*	
*Significant level at alpha 5%					

Table 3 shows that the most direct effect coefficients are significant at the 5 percent level and for the perceived ease of use coefficient (0.417; p=0.008). These results supported H1, H2, H3, and H4. These findings also showed perceived usability and e-payment security and indicated fulfillment of the first mediating condition. Due to the statistical significance of all total effect values of 5 percent concluded that it supported the second mediating condition.

It was also found that the indirect effects of Perceived ease of use on Purchase intention through E-payment security were significant (0.349; p=0.000), and the indirect effects of Perceived usefulness on Purchase intention through E-payment security (0.279; p = 0.001) were also significant statistically at the 5%. The results also showed the indirect effect coefficient of Perceived ease of use towards Purchase intention through E-payment security (0.349; p = 0.000) and Perceived Ease of Use on E-payment security through Perceived Usefulness (0.283; p=0.002). It was also significant that the indirect effect of perceived ease of use on purchase intention was driven by perceived usefulness and electronic payment(0.238; p=0.046).

There are intermediary effects to consider, and the indirect coefficients shown in the table are reduced relative to the total coefficients, which implies that there are intervening effects [33]. There are also intermediary effects to consider, and the indirect coefficients shown in the table are reduced relative to the total coefficients, which implies that there are intervening effects. Following these findings, it was determined that hypothesis H5a and H5b was supported.

The direct effect of the perception of easy use, perceived usefulness, and e-payment security or the predictors of purchase intention showed that it was easy to use. Furthermore, the interaction of predictors and other variables in controllability occurs only in the form of the affected result when the result is periodic or unsigned. TAM suggests that intention is directly related to actual usage behavior [34]. Moreover, the findings show that the Z generation of e-

commerce conduct uses its perception of the usefulness and security of trading to be determined directly. Because of their capacity and adaptability to quickly use the technological features of the company, easier usability has received less attention. This finding is consistent with [10] that, due to their nature, students are less aware of the ease of technology. There are two stages in online buying behavior. The first step is to be concerned about consumers' perceptions of the initial online shopping experience and its implications, such as perceived risk or doubts about payment or product receipt. The second phase concerns products repurchased from the same online shop [35], [36].

When the respondents were in the first stage, the Z generation depended on the perceived risk or the payment or receipt of the product. This generation is initially based on the perceived threat or doubts regarding the payment or receipt of the product. It has a direct and vital effect on electronic payment security. It shows that it will contribute to understanding e-payment security with correct knowledge of perceived convenience and usefulness simultaneously.

The main principle in this paradigm is that various transformation processes mediate the behavioral consequences of stimuli within modern people. Theorists as varied as [37], and [38] share that postulating entities or processes intersecting between input and output is essential. Mediators explain the importance of external physical events in internal psychology. Whereas moderator variables indicate when particular effects occur, mediators, discuss how or why these effects occur [33]. The accepted hypotheses confirmed occurred in connection with the characteristics of the Z generation regarding the acceptance of technology. This evidence is demonstrated by their sensitivity to electronic mouth words (e-WORM) and willingness to use technology only to follow trends. They only ever use e-payments for temporary purposes, so the security of e-payments does not affect their desire to conduct business deals electronically in the future. [39], [40].

IV. CONCLUSION, LIMITATION, AND FUTURE RESEARCH

The Z generation perception regarding the effect of epayment security could be described as follows: first, the purchase intention is significantly influenced by perceived usefulness, ease of use, and e-payment security, which has clarified their characterization. Second, the e-payment security aspect is directly affected by the perceived ease of ecommerce use, which is practically understood as a contemporary lifestyle. Third, there are intermediary effects of perceived usefulness and e-payment security in mediating perceived ease of use on customer purchase intentions. This study's population can be expanded into larger generations, even in different areas of the region, but only based on the findings of this study. This research could be developed by comparing various payment security platforms. More advanced payment methods in the future will be available, and the role of e-payment in a model could change between mediator and moderator.

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