



Factors Affecting Students' Intentions to Use the University's Electronic Payment System (E-PS)

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Abstract.

Purpose: Most universities prioritize online payment administration because of advances in information and communication technologies, especially for online banking transactions. Benefits of online banking services, such as transactions via Internet banking are very convenient compared to traditional payment methods. On the other side, in traditional payment methods transactions must queue and come directly to the bank. This study was done to find out what factors in Semarang City affected the adoption of university E-PS as online banking.

Methods: 123 students have participated in this research. Six characteristics were considered in a new study model that examined how students' intention to use E-PS was affected: convenience, perceived usefulness, risks, perceived trust and reputation. To validate the research model, the structural equation model approach using PLS-SEM was applied.

Result: The empirical result showed that perceived convenience, perceived usefulness and trust had a significant positive relationship with students' intention to use the University's E-PS. The empirical results showed that perceived convenience, perceived usefulness, and trust had a significant positive relationship with students' intentions to use the E-PS university. Perceived convenience was also found to have a positive and significant effect on the perceived usefulness of students using E-PS. However, the perceived risks showed a non-significant negative relationship with students' intentions to use E-PS.

Novelty: While previous studies have explored the intentions to see E-PS. This research contributes to the literature by investigating the specific factors that influence the adoption of E-PS in the context of tertiary institutions. Additionally, this research provided empirical evidence on the relationship between perceived convenience and perceived usefulness of using E-PS in universities. Overall, this research offers a new perspective on the adoption of E-PS in tertiary institutions and contributes to the development of strategies to improve the adoption and use of E-PS in universities.

Keywords: E-Payment, Students' Intentions, Intention Continuance to Use

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INTRODUCTION

Nowadays, most universities prioritize online payment administration because of advances in the technology of information and communication, particularly in the area of online banking [1], [2]. Electronic payments are the online platform that serves as the foundation for online banking referred to as the core of internet banking transactions, which refers to the online platform that is the basics for online transactions [3]. Someone who uses the Internet benefits from online banking services, this is because transactions via Internet banking are very convenient compared to traditional payment methods that use cash or checks. Another side is that traditional payment methods for payment transactions must queue and come directly to the bank. There are two types of perceived usefulness, those are directly perceived usefulness and indirectly perceived usefulness which are felt when using online payment services. The real perceived usefulness that users get instantly is the immediate advantage that is obtained when the use of online banking. This perceived usefulness can be observed in the form of increased information transparency, speed of transaction, and perceived financial usefulness. The opposite is that the intangible perceived

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usefulness that students get through online payments is indirectly perceived usefulness. In this instance is that online payment can conduct transactions anytime and anywhere by providing better investment option and services to student. It is estimated that there will be an increase in the number of users of the E-PS in universities. nevertheless, the rate of acceptance by the the end users is still quite limited [4], [5]. Some limitations are noticed in traditional E-PS that may limit them from being adopted by users [5] hightligh of prior studies, lack of security, privacy, performance expectations, trust, perceived usefulness and perceived risks are some of the causes of this limitation [6]. Before the use of electronic payment systems, end users need to make sure these factors are effectively activated for them to feel comfortable during the transaction process. On the other hand, further, if these fundamentals are not met in the payment system, students may lose trust in the online activities, which may lead to missed business opportunities. One of the most important problems with E-PS is security, primarily because prior to the online transfer of funds and information, stakeholders do not personally interact. Another concern to users who use E-PS is the perception of risk. The constant pursuit of personal information and credit card information by hackers poses a seriuos threat and is a source of worry for users.

Because this is the foundation for the use and adoption of online applications, electronic payment transactions must be sufficiently reliable [5], [7]. In education, the university is putting a lot of effort into promoting E-PS adoption [5]; nevertheless, the adoption rate among students is still fairly low [8]. The perceived value of E-PS services is minimized as a result of issues with privacy and security that have been noticed. Numerous studies were carried out to look at the elements that affect users adoption of E-PS [9]. According to the literature, business leaders, students, and retail customers of banking services make up the majority of users [10].

Among these users, the adoption of the university electronic payment system by students is still lacking, and requires additional research. Due to their educational background and ongoing substantial usage of internet services, university students make up a significant portion of the market, which is why user adoption is so important. Furthermore, technology adoption has increased a major research area with researchers in the field of information and management systems, this also points to the fact that the factors influencing this technology vary from one context to another [5], [8], [11]. One of the technologies that has piqued the interest of many academics is E-PS. Moreover, several research studies have been conducted to better understand the factors influencing e-payment adoption in higher education. According to the things that have been mentioned above, this study aims to empirically examine what factors influence the adoption of university electronic payment systems, therefore, the research question is: What factors influence the adoption of E-PS in universities, specifically among students?

METHODS

The study's research methodology was created by combining six elements, including perceived usefulness, ease of use, security, risk, trust and perceived reputation on the continuance usage intention to use university E-PS. Figure 1 shows the developed of the research model.

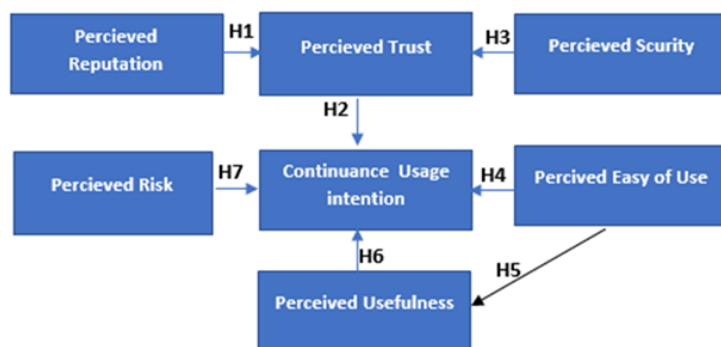


Figure 1. The developed of research model

Reputation and Trust

Customers' view that a company has a good reputation for competence, kindness, and integrity has known as reputation [11]. Previous studies have shown that reputation plays a crucial part in business engagement between firms since consumers prefer to rely on a company's reputation to assess its trustworthiness [12].

Customers are more willing to transact with reliable providers [12], [13], and untrustworthy providers typically lose online business from potential customers [14]. In the instance of payments, experts have called for greater attention to be paid to the reputation of the m-payment platform after highlighting the crucial role that platforms play in increasing users trust [15], [16]. Therefore, it was hypothesized as follows:

H1: Reputation positively and significantly influences trust in E-PS.

Trust

It is possible to enhance people's readiness to use E-PS in their financial transactions by building up their faith in E-PS, which is measured by how much trust they place in them [17]. It is thought that the more people trust an electronic payment system, the less risk they perceive the system to have. In accordance with the available literature, It was discovered that users' adoption of E-PS was significantly influenced by trust [8], [9], [18]. Therefore, the following hypothesis was taken:

H2: Trust has a positive and significant impact on students' continuance intentions to use E-PS

Perceived Security

According to perceived security, "the consumer's perception that Internet vendors will comply with security requirements such as authentication, integrity, encryption and non-repudiation" [8], [15], [19], [20]. Perceived risk is a subset of perceived security, and the two concepts are related to one another. Opinions about inadequate risk and security in internet-based financial services are proven to be effective on customer adoption [21]. A sizeable barrier to using online banking is security; thus, using E-PS mechanisms is impacted. Consequently, it can be said that user confidence in using E-PS relies upon on security/privacy [22].

Security and Trust

With regard to mobile payment (m-payments), security represents the customer's perception of the reliability and security of institutional structures in the m-payments environment, including guarantees, regulations, and transaction promises [23]. Security is regarded as an important element in guarding users from uncertainty and transactional risk. Consequently, it may aid in promoting customer trust in platforms from third parties [12]. If the mobile platform offers a secure and trustworthy structural assurance, customers are more likely to trust it [12]. Customer multiple security guarantees are perceived to be critical to building trust in E-PS [24], [25]. In the context of m-payments, it shows that customer trust will be eroded if they feel insecure. Security can significantly promote m-payment trust building [26]. In light of this, the hypothesis was proposed:

H3: Perceived security has a positive and significant impact on perceived trust to use E-PS.

Perceived Ease of Use (PEU)

According to the basic of the Technology Acceptance Model (TAM), the extended model maintains perceived ease in using of TAM the extended model maintains perceived ease of use of TAM as a direct determinant of attitudes and antecedents of intention to use, either directly or indirectly through its impact on self-efficacy and technical needs. Many studies have been conducted over the last few years, with many providing sample evidence to support the important impact that this element has on the user's intention to utilize a product or service, i.e., whether it impacts perceived usefulness or not [27]–[30].

H4: Perceived ease of use has a positive impact on students' continuance intentions to use E-PS.

Perceived Usefulness

In TAM considerations, It has been said, the perceived usefulness factor is related to numerous important factors, specifically performance, productivity and effectiveness, [31]. The definition of perceived usefulness is "the extent to which a person believes that using a particular system will enhance his or her job performance" [31]. Perceived usefulness has been recognized in the literature as a key factor in technological acceptability [27]. A study reported finding a favorable correlation between perceived usefulness and intention to use technology [32].

Perceived usefulness considers the "perception of positive consequences caused by certain actions" [32]. The perceived usefulness of E-PS refers to the overall payment, which provides more opportunities for financial gain while saving time and effort. Thus, the following hypothesis was formulated:

H5: Perceived Ease of Use has a positive and significant impact on perceived usefulness.

H6: The perceived usefulness has a positive impact on students' continuance intentions to use e-payment.

Perceived risk

The direct impact of a user adoption intentions in online transactions was described as perceived risk [28]. According to the literature, the intention to use E-PS was significantly negatively impacted by perceived risk [8], [33]–[35]. A high risk will have a low intention to use E-PS, on the contrary a low risk will increase use of electronic payment is intended. Therefore, the research presented here develops the hypothesis:

H7: The negative effects of perceived risk on students' continuance intentions to use E-PS.

RESULT AND DISCUSSION

Data Analysis

Analysis of the data and hypothesis testing that had been formulated were validated using Partial Least Squares (PLS-SEM) using a two-step approach, which was the assessment for both the structural and measurement model. The inner model, commonly referred to as the structural model focuses more on the relationship between latent constructs whereas the outer model, or the measurement model shows the relationship between construct and their item [36].

Sample Profile

The total sample used for instrument and hypothesis testing was 123 samples. The characteristics of the respondents were as follows: 38.21% consist of male respondents, and 61.79% consist of female, where the majority of the studies in this field typically found this ratio. The majority of respondents were students from private tertiary institutions, accounting for 56.10%, while 43.90% were from state universities. Another profile of the respondents was their educational background, which ranged from the undergraduate level, with the smallest number from the master's degree. The full profile of the participants is shown in Table 1.

Table 1. Respondent's demographic profile

Demographic Profile	Count	%
Gender:		
Male	47	38.21%
Female	76	61.79%
Total	123	100%
University Status:		
State	54	43.90%
Private	69	56.10%
Total	123	100%
Educational level:		
Diploma	31	25.20%
Master	14	11.38%
Bachelor	78	63.41%
Total	123	100%

Measurement Model Assessment.

The test of reliability and validity of the instruments by estimating discriminant and convergent validity and internal consistency reliability [36]. Factors loading and Average Variance Extract (AVE) was used to assess convergent validity. Cross-loading, the Heterotrait Monotrait Ratio (HTMT), and the Fornell-Larcker criteria were used to evaluate the discriminant validity. Consistency within Composite Reliability (CR) and Cronbach's alpha is used to measure reliability. Referring to Table 2, all variables' Cronbach's alpha and CR values are greater than the recommended value of 0.7. In addition, the factors loading values for all items are higher than recommended value of 0.7. In addition, the AVE value of all the models construct exceeds the threshold value of 0.5 [37], [38]. In the light of this, internal consistency reliability and convergent validity were verified.

Table 3 depicts the HTMT ratio, where each construct's value cannot be more than 0.90 [39]. Table 4 shows the Fornell-Larcker mixture, where the square root of AVE must be greater than its correlation with the

other constructs [36]. Table 5 shows the collinearity diagnostic, where there is no collinearity in the existing constructs. The results of the analysis of the evidence show that there is no problem regarding the measurement of the assessment model in terms of insult and its validity, similarly, the collected data can be utilized to evaluate the structural model.

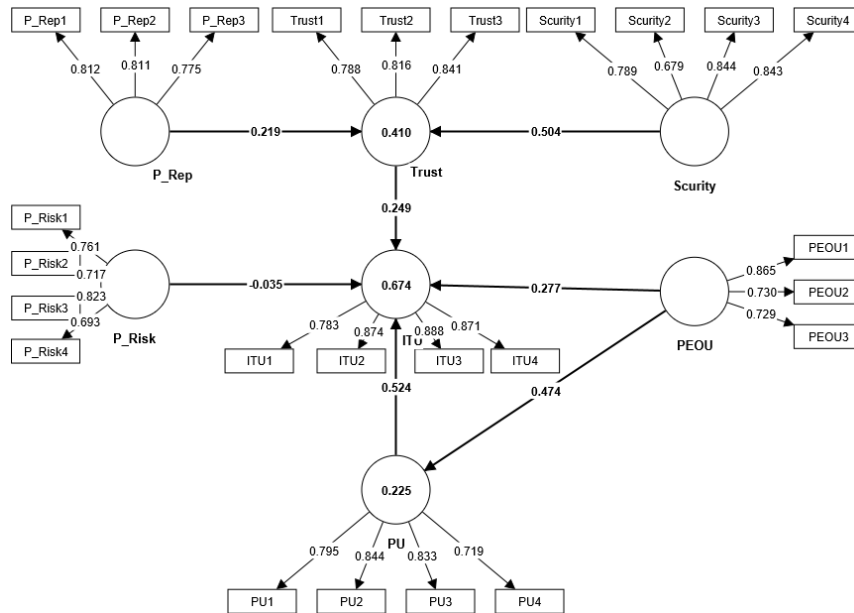


Figure 2. Initial path model

Table 2. Convergent validity & internal consistency

Construct	Items Code	Outer Loading	Cronbach's Alpha	CR	AVE
Perceived Reputation	P_Rep1	0.812	0.718	0.721	0.639
	P_Rep2	0.811			
	P_Rep3	0.775			
Perceived Risk	P_Risk1	0.761	0.745	0.767	0.563
	P_Risk2	0.717			
	P_Risk3	0.823			
	P_Risk4	0.693			
Trust	Trust1	0.788	0.748	0.753	0.664
	Trust2	0.816			
	Trust3	0.841			
Perceived Usefulness	PU1	0.795	0.813	0.833	0.639
	PU2	0.844			
	PU3	0.833			
	PU4	0.719			
Perceived Ease of Use	PEOU1	0.865	0.672	0.702	0.604
	PEOU2	0.730			
	PEOU3	0.729			
Perceived Security	Scurity1	0.789	0.800	0.819	0.626
	Scurity2	0.679			
	Scurity3	0.844			
	Scurity4	0.843			
Intention to Use	ITU1	0.783	0.877	0.833	0.731
	ITU2	0.874			
	ITU3	0.888			
	ITU4	0.871			

Table 3. Discriminant validity: heterotrait-monotrait ratio statistics (HTMT)

	ITU	PEOU	PU	P_Rep	P_Risk	security	Trust
ITU							
PEOU	0.801						
PU	0.845	0.621					
P_Rep	0.556	0.519	0.564				
P_Risk	0.516	0.645	0.481	0.682			
Security	0.899	0.843	0.645	0.645	0.567		
Trust	0.667	0.619	0.454	0.629	0.754	0.778	

Table 4. Discriminant validity: fornell and larcker criterion

	ITU	PEOU	PU	P_Rep	P_Risk	Security	Trust
ITU	0.855						
PEOU	0.62	0.777					
PU	0.732	0.474	0.799				
P_Rep	0.44	0.366	0.427	0.799			
P_Risk	0.436	0.479	0.374	0.504	0.75		
security	0.752	0.629	0.532	0.493	0.461	0.843	
Trust	0.541	0.447	0.36	0.467	0.572	0.616	0.815

Note: Off-diagonal values are correlation coefficients, while the diagonal values (bolded) are the square root of AVE.

Table 5. Collinearity diagnostic: variance inflation factor

Exogenous Variable	Endogenous Variable		
	ITU	PU	Trust
PEOU	1.548	1.000	
PU	1.357		
P_Rep			1.322
P_Risk	1.66		
Security			1.322
Trust	1.598		

Structural Model Assessment

Path analysis and to evaluate the structural model, the coefficient of determination (R²) was measured [24], [40]. Value of R² determines how accurately the model predicts. Figure 2 illustrates how the created model explains 41% of the variance in user trust and 22.5% of the variance in perceived usefulness and 67.4% of the variance in university continuance intention to use e-payment. As shown in Table 6, out of the 7 hypotheses that were formulated, 6 hypotheses were supported, while 1 hypothesis was not supported. Hypothesis 1 shows that reputation has a positive impact on the trust of university electronic payment users ($\beta = 0.219$, $p < 0.05$). As a result, hypothesis 1 is supported.

According to Table 6 and Figure 3 findings, trust and the intention to continue using the university's E-PS are significantly positively correlated ($\beta = 0.249$, $p < 0.05$), hypothesis 2 is supported. Therefore, hypothesis 2 is supported. Additionally, there is a strong correlation between user trust and security in university E-PS ($\beta = 0.504$, $p < 0.05$). Likewise for hypothesis 4, hypothesis 5, and hypothesis 6 are all supported. While it was found that there was no significant negative relationship between risk and intention to use the university's E-PS ($\beta = -0.035$, $p > 0.05$), as a result, hypothesis 7 was not supported.

The results of testing the research model confirm the role of ease of use, perceived usefulness and trust to support students' continuance intentions to use the university's E-PS. This therefore underscores the importance of ensuring the proper match of the variables that support students' continuance intentions to use university electronic payments. Meanwhile, high risk will affect students' low continuance intention to use the university's electronic payment system. From the findings of this study, students are not significantly affected by the risks of using the E-PS, this can be explained because reputation, trust, security, perceived ease of use and perceived usefulness are more dominant in determining students' intentions to use the university's electronic payment system. In essence, empirical results of this study provide reinforcement for previous studies, namely by examining and evaluating the elements that effect students to use the university's E-PS.

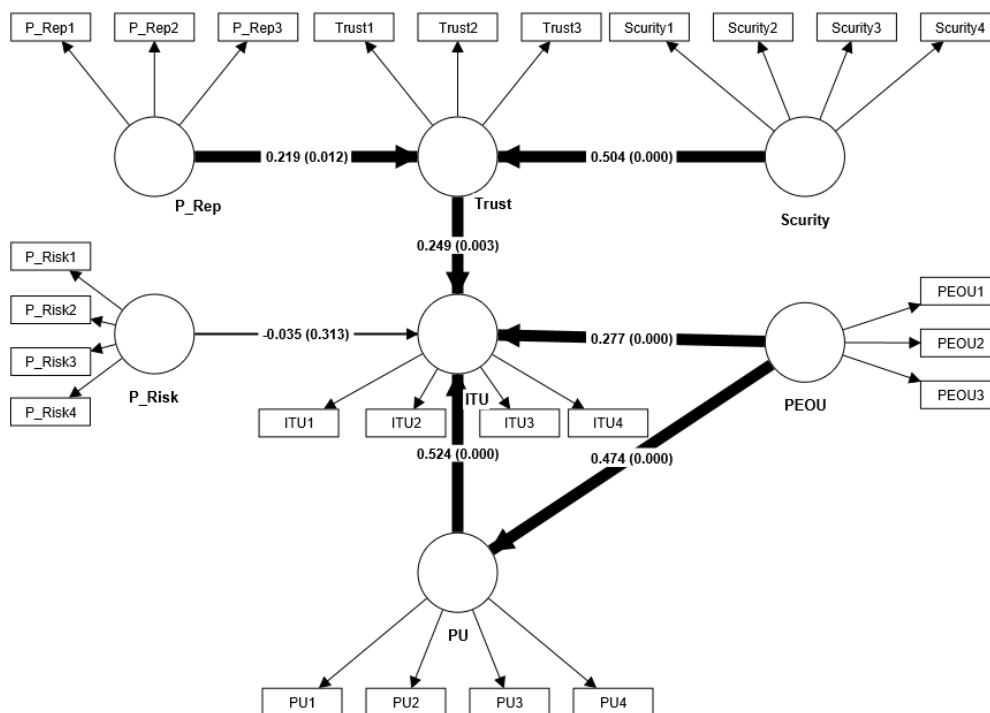


Figure 3. Structural model assessment results

Table 6. Summary of hypotheses testing

Hypothesis	Path	St. Beta	St. Error	T -value	P- values	Decision
H1	P_Rep -> Trust	0.219	0.097	2.261	0.012	Supported
H2	Trust -> ITU	0.249	0.089	2.838	0.003	Supported
H3	Security -> Trust	0.504	0.078	6.426	0.000	Supported
H4	PEOU -> ITU	0.277	0.076	3.83	0.000	Supported
H5	PEOU -> PU	0.474	0.081	5.739	0.000	Supported
H6	PU -> ITU	0.524	0.065	8.506	0.000	Supported
H7	P_Risk -> ITU	-0.035	0.071	0.485	0.313	Not Supported

CONCLUSION

Contributions and Implications

Adoption of technology has been an interesting area of research for scientists researching information systems, one of which is E-PS technology. This please see the reality that different contexts have different drivers impacting this technology. This research attempts to understand more about the factors that affect students' intentions using E-PS at the university. A new model is proposed in this study, in which six variables (perceived reputation, perceived trust, perceived security, perceived risk, perceived usefulness, and perceived ease of use) affect students' intentions to use E-PS. The results demonstrate a positive and

substantial association between perceived ease of use and students' propensity to adopt E-PS. It was also results that perceived risk had a negative and insignificant how students' intentions are related to use of E-PS. These findings agree with previous studies in the e-payment domain. The model clarifies 67.4% of the variation in the intention to adopt E-PS. Furthermore, the model also explains 41% of the variance in trust for. Despite the fact that several research were done to examine the adoption of E-PS, according to reports, there weren't many studies done at higher education institutions generally, and the Semarang region was one of them. By creating a new model that can forecast students' intention to use E-PS in general education institutions, this study and its conclusions contribute to the body of knowledge on the adoption of electronic payments.

Limitations and Future Research Directions

The results of the research study contribute to the electronic payment literature. The limitations of this study that should be taken into account for future research. This limitation is because data collection is only limited to universities in Semarang City, Central Java Province, Indonesia. Caution is needed to generalize the results of this study to the context of other educational institutions. This study also uses incidental sampling techniques in data collection, thereby limiting the generalizability of the results. The limitations of this study need to be considered in further research.

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