



Consumer Perception toward Digital Payment System

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Article Info:

Received: 21 APR 2022
Revised: 16 June 2022
Accepted: 23 June 2022

DOI:

<https://doi.org/10.3126/md.v25i1.53286>

Keywords:

Digital payment,
Measurement model,
Perception,
Privacy,
Security,
Structural model,
Trust.

ABSTRACT

In the modern world, where the current electronic payment system is replacing the traditional payment method, the e-payment system is becoming popular among the new generation and gaining popularity among the older generation. With the gain of popularity, security, and privacy issues are also increasing. The study examined the impact of security and privacy on customers' trust in the case of the e-payment system and its resultant effect on customers' perceived Quality. Descriptive research has been conducted using online responses from 390 customers using e-payment. The study also examined the impact of perceived ease of use and usefulness on perceived quality. The collected data was analyzed by using the structural model and measurement model. The study concluded that trust depends on the security and privacy factor, where privacy and security strongly impact customers' trust in the e-payment platform. And it is also concluded that trust positively impacts customers' perceived quality of the e-payment platform. In Nepal, security and privacy issues are increasing with the increased use of e-payment platforms, so security and privacy are significant factors to consider. Also, Perceived ease of use and usefulness positively impact customers' perceived quality of the system for online transactions.

1. INTRODUCTION

The advancement of wireless and internet technology has created greater opportunities and challenges in the present situation assisting in the development of electronic commerce and service commerce like electronic payment, mobile commerce, online shopping, and many more. The digital payment system is a sure way to transform money from one point to another and is also a medium for the development of technology in the field of the economy (Slozko & Pelo, 2015). The growth of e-commerce has the foundation of the digital payment system, as many corporations and organization express their view in

supporting digital payment systems for their e-commerce development (Peha & Khamitov, 2004). Many researchers define digital payment in different ways. Teoh et al. (2013) stated that digital payment transfers an electronic payment value from a payer to the payee through digital payment channels that allow customers to access and manage their bank accounts and transactions remotely. From another perspective, Peter and Babatunde (2012) viewed a payment system as “any form of fund transfer via the internet.” Another definition suggests that digital payment systems are “payments made in electronic commerce environment in the form of money exchange through digital means” (Kaur & Pathak, 2015). Digital payment has always been the base for the development of e-commerce as digital payment has been the first choice for the individual to make payment the purchase made online (Teoh et al., 2013). The process of the EPS system is represented in the digital payment procedures such as payment of money between the individuals, the payment between the bank and individual, and payment for the service utilized by the individuals. Gao and Waechter (2017) showed that ease of use, privacy, trust, security, and convertibility directly or indirectly have some influence on the intention to use digital payment systems.

Perceived security is the customer’s subjective valuation of the digital payment system’s security (Linck et al., 2006). Customer issues regarding the system’s security are the major obstacles to opting for e-commerce transactions (Orni et al., 2004). Security concerns generally increase when customers engage in online activities and digital payment (Zhou, 2011). According to Gervy and Lin (2000), security was only determining customers to trust e-commerce transactions. Lim (2003) found that security or perception of security causes trust issues, and it is or can play a mediating role between trust and willingness, and in the end combination of them can cause trusting behavior. According to Suh and Han (2003), people are still concerned about the internet being the medium of online banking even though many security mechanisms have been developed. Kumar et al. (2012) found that security in the context of internet banking, as sensed by the users, prepares the foundation for the institutional trust paving the path of internet banking use. Sanayei and Noroozi (2009) stated that trust is proportional to security. Based on the experiences and expectations contained by the customers, they may have a different attitude toward the digital payment system even though the system provides all the necessary security measures (Stroborn et al., 2004).

The service providers have recognized the need to take a step towards ensuring the system’s security to protect customers’ data being obtained by third parties. The development of technology and the internet has raised the bar for security, mainly due to data transmission and unauthorized assets of the account. Laforet and Li (2005) concluded security has a significant impact on the adoption of online banking in China. The ability of an individual to control his/her information in the technological world is a growing concern. Regarding the risk involved in the relationship between m-commerce and e-commerce, researchers have combined security and privacy. However, privacy and security are not entirely the same concept. They do have some form of differences (Veijalainen, 2007). In addition, Vijayasathya (2004) argued that security and privacy are two different constructs. Researchers found that privacy concerns surpass security to some extent. Paola (1999) argued that users might be concerned about the vendors’ intentions and how they will use the information they obtained. For instance, Siau et al. (2003) hypothesized that information privacy is one of the crucial components of trust building, and privacy concern maximizes privacy.

Piao et al. (2012) concluded that privacy policy has an important part to play in trust and has significant positive relation. Amoroso and Magnier-Watanabe (2012) concluded that user privacy factors have the upper hand in developing confidence in the context of mobile wallets. Kelly and Erickson (2005) stated that arrival of the new technology and changing trends in doing transactions has made privacy a comparatively more critical matter. Much literature on privacy has made privacy an essential factor for maintaining trust among users. Gunawan et al. (2019) argued that perceived ease of use is when someone believes that using

the system does not require any effort while using the system (free of action). Adamson and Shine (2003) defined the perception of usefulness as the construction of someone's belief that the use of a particular technology will be able to improve their performance. The extent to which one believes that 'using mobile payment services makes the payment process more efficient and more effective' define the perceived usefulness of the mobile payment services (Phonthanakitithaworn et al., 2015). The perceived benefit of any payment service establishes the context of the intention to use payment services. The extent to which perceived effectiveness determines acceptance is expressed in the research related to digital payment acceptance (Francisco et al., 2015), which found that the attitude of the users is greatly impacted by perceived usefulness. In brief, customers tend to use payment services if they find them useful. Gunawan et al. (2019) argued that perceived ease of use is the situation where someone believes that using the system does not require any sort of effort while using the system (free of effort). Rekarti and Hertina (2014) explained the interest of an individual to use a system is the intention, which is defined as doing an action that is generally preferred. Some limitations of mobile wallet usage, like manipulation and complication, cannot satisfy the users for using a digital payment system. Regardless of the level of proficiency of an individual towards the use of the system, ease of learning and use is the critical foundation for the use of the m-wallet by customers (Dai & Palvi, 2009). Various previous studies have statically proved that perceived ease of use significantly positively impacts users' intention to use the system provided (Rigopoulos & Askounis, 2007).

Reliability is the capacity to consistently and accurately fulfill an agreed-upon activity. Banks are recognized for their dependability and consistency in fulfilling financial operations (Singh & Kaur, 2013), but it is also vital to depict this dependability through web-based services. The dependability of online tasks might improve user participation in the service and persuade the user to utilize it again. The HSBC cyberbank site was hacked, resulting in widespread consumer dissatisfaction. As a result, these features of security and secrecy are considered safe. According to some researchers, reliability is also a crucial factor in digital banking success. According to Sokhaei and Afshari (2014), to access any service supplied by an online source, the user must first ensure that the source is safe and accountable and that their data is handled secretly. Cheng and Chan (2009) necessitate sharing private and confidential data. Hence the bank's website must be dependable, trustworthy, and safe. As a result, the feature is regarded as an important component in this study, which examines the impact of e-banking on customer satisfaction and loyalty. Previous research has found a link between dependability and ECS that is both positive and substantial (Hammoud et al., 2018).

Perceived quality, defined as the evaluation of feelings, has been used regularly. The degree to which a user believes that the facility's possession or usage creates positive emotions is called user satisfaction (Rust and Oliver, 1994). According to Cheng and Chan (2009), service can be classified into transaction-specific and cumulative results or overall satisfaction. Transaction-specific satisfaction is a sentimental response to a service's performance on specific characteristics. In contrast, cumulative result or overall satisfaction is defined as satisfaction based on variables that occur due to repeated transactions. Overall satisfaction is considered a vital aspect of perceived service quality by researchers (Taylor & Cronin, 1994) since it mirrors the users' cumulative impact resulting from an organization's facility performance. It so functions as an interpreter of user loyalty. Alternatively, satisfaction is described as a mental state assessment formed by mixing sentiments about unconfirmed expectations with feelings about the user's previous experience of usage (Oliver, 1980). In other words, satisfaction is the sense of enjoyment or dissatisfaction that emerges in an individual due to a product's actual and expected performance being compared. Finally, this research study attempts to answer the question of the relationship and impact between security perceptions, privacy perception, ease of use, trust, and perceived usefulness related to customers' perceived quality to use digital payment platforms.

2. METHODOLOGY

The data used in this analysis is of primary type. The data is collected by using a structured closed-end questionnaire. The primary objective of the researcher here is to examine the perceived quality and use of digital payment platforms. A quantitative research approach towards descriptive and explanatory casual research design has been implemented to fulfill the objective. The research population consists of all the individuals using digital platforms in the current situation in Nepal. A link to an online Google form has been sent to business people, students, teachers, and people in different professions via social media like messenger, WhatsApp, Viber, and MS-Team for collecting samples. The research population consists of all the individuals using digital platforms in the current situation in Nepal. The exact date of digital payment platform users is unknown. Thus, it isn't easy to include the total population in the study.

Using Cochran's formula for sample size, the researcher used a 95 percent confidence level, an error of 5 percent, and 50 percent response distributions. The minimum sample size is determined as 384. This study utilized a sample size of 500 respondents. However, 390 sample responses were collected by this method. All the variables are measured on a five-point Likert scale, and confirmatory factor analysis (CFA) was utilized for data analysis. CFA combines variables to make a factor based on their factor loadings and prepare a regression model to predict dependent variable based on these factors.

Reliability and Validity

High-quality reliability scores are required for the data being considered for the study (Tavakol & Dennick, 2011). Consistency is the primary measure of reliability. Pallant (2001) stated that Cronbach's Alpha higher than 0.60 is considered a reliable and acceptable index. Cronbach's Alpha of all variables is more than 0.6, indicating that all variables have no serious problem with internal consistency, and the detailed Cronbach Alpha is presented in Table 1.

Table 1
Reliability Analysis

Items	Cronbach's Alpha
PEOU	0.669
PP	0.688
PQ	0.657
PR	0.610
PU	0.714
SP	0.601
TRUST	0.676

Source: Field survey, 2022

Composite reliability is the measure of the internal consistency of the construct. Fornell and Larcker (1981) stated that constructs with CR above 0.70 are more likely to be consistent. Convergent validity measures if two variables are related or not. Convergent validity for the constructs is measured using two criteria (Fornell & Larcker, 1981). The first criterion is to calculate Average Variance Extracted (AVE). Hair et al. (2019) mentioned that the AVE above the value of 0.50 is considered acceptable.

Table 2 shows all the composite reliability values are more than the required value of 0.70, according to Fornell & Larcker. Thus, the consistency of the model can be considered better. The PEOU, PU, and trust values have an AVE above the required value, but few of the other variables have AVE below 0.5.

Table 2*Composite Reliability and AVE*

Items	Composite Reliability	Average Variance Extracted (AVE)
PEOU	0.800	0.500
PP	0.793	0.390
PQ	0.784	0.430
PR	0.748	0.473
PU	0.823	0.540
SP	0.765	0.450
TRUST	0.822	0.607

*Source: Field survey, 2022***Table 3***Outer Loading*

Constructs	PEOU	PP	PQ	PR	PU	SP	TRUST
P1		0.581					
P2		0.617					
P3		0.678					
P4		0.642					
P5		0.623					
P6		0.601					
PE1	0.74						
PE2	0.701						
PE3	0.745						
PE4	0.639						
PQ1			0.727				
PQ2			0.604				
PQ3			0.673				
PQ4			0.553				
PQ5			0.681				
PU1					0.761		
PU2					0.716		
PU3					0.715		
PU4					0.739		
R1				0.625			
R2				0.578			
R3				0.566			
R5				0.697			
R6				0.58			
S1						0.674	
S2						0.709	
S3						0.696	
S4						0.598	
T1							0.812
T2							0.776
T3							0.748

Source: Field Survey, 2022

Here most of the items have an outer loading value of 0.6. The rule of thumb for convergent validity is 1, with a loading factor > 0.7 ; for exploratory research, a loading factor of 0.6 to 0.7 is still acceptable (Ghozali & Latan, 2012). Many variables have an outer loading of 0.6 or above, so the values determined are generally fair.

Discriminant Validity

However, Discriminant validity (DV) was measured to ensure no correlation between the constructs, that they were distinct from each other, and that they measured unique aspects. Fornell and Larcker (1981) stated that for better discriminant validity, the square root of AVE for each construct should be greater than inter-construct correlations.

Table 4

Discriminant Validity (Fornell-Larcker approach)

Items	PEOU	PP_	PQ.	PR	PU	SP	TRUST
PEOU	0.707						
PP	0.569	0.624					
PQ	0.632	0.586	0.651				
PR	0.529	0.559	0.552	0.611			
PU	0.671	0.542	0.644	0.496	0.733		
SP	0.47	0.582	0.576	0.448	0.469	0.671	
TRUST	0.492	0.581	0.456	0.481	0.468	0.564	0.779

Source: Field survey, 2022

The square root of AVE for all the constructs is greater than the inter-construct correlations. So, we can say that all the constructs are valid and can be used in the research. However, Henseler et al. (2015) argued that cross-loading and Fornell-Larcker approach is insufficient to measure the lack of discriminant validity. So, they recommend using a heterotrait-monotrait ratio (HTMT) scale to measure discriminant validity in variance-based SEM effectively. The threshold acceptable is 0.90 for similar constructs and 0.85 for distinct constructs. Gold et al. (2001) clarified there is the problem of discriminant validity issues if HTMT values are greater than 0.90. Also, Henseler et al. (2015) mentioned that the threshold value for the discriminant validity with $HTMT_{0.90}$ is 0.90. Here all the values are less than 0.90, so there are no discriminant validity issues.

Table 5

Heterotrait-Monotrait Ratio (HTMT)

Items	PEOU	PP_	PQ.	PR	PU	SP	TRUST
PEOU							
PP	0.821						
PQ	0.938	0.874					
PR	0.796	0.866	0.836				
PU	0.935	0.777	0.989	0.72			
SP	0.744	0.905	0.918	0.735	0.715		
TRUST	0.722	0.838	0.68	0.777	0.671	0.896	

Source: Field survey, 2022

3. RESULTS AND DISCUSSIONS

This section analyzed collected data using descriptive statistics, correlation coefficient, and structural equation modeling (SEM). Table 6 reflects the demographic profile of the respondents using digital payment platforms. The study included a total of 390 respondents. Among them, 219 (56.15%) were male, and 171 (43.85%) were female.

Table 6
Respondent's Profile

Demographic Variable	Categories	Number of Respondents	Percentage
Gender	Male	219	56.15
	Female	171	43.85
Age Group	16 - 25	92	23.59
	26 - 35	93	23.85
	36 - 45	85	21.79
	46 - 55	68	17.44
	Above 55	52	13.33
Education	SEE	40	10.26
	Plus 2	64	16.41
	Bachelor	140	35.9
	Masters	118	30.26
	M Phil and above	28	7.18
Time	1-2 years	134	34.36
	3- 5 years	149	38.21
	6-years above	107	27.44
Total		390	100.00

Source: Field survey, 2022

Table 7
Correlation Coefficient Matrix

Variables	SP	PP	T	PU	PEOU	PQ	R
Security Perception	1.00						
Privacy Perception	0.60**	1.00					
Trust	0.57**	0.57**	1.00				
Perceived Usefulness	0.49**	0.55**	0.47**	1.00			
Perceived Ease of Use	0.50**	0.57**	0.48**	0.65**	1.00		
Perceived Quality	0.60**	0.59**	0.47**	0.66**	0.65**	1.00	
Reliability	0.47**	0.59**	0.50**	0.52**	0.53**	0.56**	1.00

Significant level **<0.001

Among the different domains, a significantly positive relationship exists between privacy perception and security perception ($r = 0.60$, $p\text{-value} < 0.001$). Here we can see that perceived quality shares a higher correlation with perceived usefulness ($r = 0.66$, $p\text{-value} < 0.001$) followed by perceived ease of use ($r = 0.65$, $p\text{-value} < 0.001$). Likewise, there is a significantly positive relationship between trust, security perception, and privacy perception ($r = 0.57$, $p\text{-value} < 0.001$). To assess the measurement model, a confirmatory factor analysis (CFA) was considered to check if the measurement of the construct was parallel with the hypothesized measurement model. In SEM, the first step is assessing the measurement model, which includes construct reliability, composite reliability, convergent validity, and discriminant validity.

Structural Model

After the models' reliability and validity were shorted out, the issue was to study the relationship between the exogenous and endogenous variables during the structural model analysis. SEM is the method to demonstrate if any relation prevails between the constructs used in research based on their covariance matrix (Hu et al., 2019). The structural model was evaluated with explanatory power and the t-value of the path coefficients. Hair et al. (2016) suggested Structural Model's key criteria for assessment are R2 values, effect size (f^2), and predictive relevance (Q2).

Collinearity Assessment

Collinearity is the prime issue in the research, so the issue of collinearity should be removed to proceed with the research process. The value of VIF should be within the range so that the collinearity issue is eliminated. For this purpose, collinearity between the constructs was examined, and all the constructs with (Variance inflation) VIF below 5 are acceptable for collinearity (Hair et al., 2016).

Table 8

Collinearity Assessment

Constructs	VIF	Constructs	VIF	Constructs	VIF
P1	1.306	PQ1	1.431	R1	1.248
P2	1.357	PQ2	1.326	R2	1.314
P3	1.259	PQ3	1.279	R3	1.109
P4	1.411	PQ4	1.209	R5	1.202
P5	1.315	PQ5	1.312	R6	1.204
P6	1.164	PU1	1.475	S1	1.223
PE1	1.331	PU2	1.447	S2	1.262
PE2	1.327	PU3	1.289	S3	1.191
PE3	1.251	PU4	1.335	S4	1.145
PE4	1.218			T1	1.389
				T2	1.368
				T3	1.237

Source: Field survey, 2022

All the VIF values in Table 8 are below the considerable value of 5. So, all the items of the constructs were retained for the research purpose.

Coefficient of Determination

The coefficient of determination indicates the explanatory power of the exogenous variables on endogenous variables. It was used to assess the ability of the independent variable on the dependent variable showing how much of the change in the dependent variable can be explained by the independent variables. The adjusted R² of PQ is 0.554 meaning that the variables making up PQ explained 55.4% of changes in ITU, and the remaining 44.2% of changes were explained by the variables not considered and outside the study. The coefficient of determination of the variable Perceived Trust (PT) was 0.415 means that the variables making up PT (Perceived security and Perceived Privacy) explained 41.5% of changes in PT, and the remaining 58.5% were explained by the variables outside and not considered in the study.

Table 9

Beta between the Variables

Relationship	Beta
SP -> PT	0.342
PP -> PT	0.382
PT -> PQ	0.058
PEOU -> PQ	0.224
PU -> PQ	0.406
PR-> PQ	0.204

Source: Field Survey, 2022

Figure 1
Structural Model

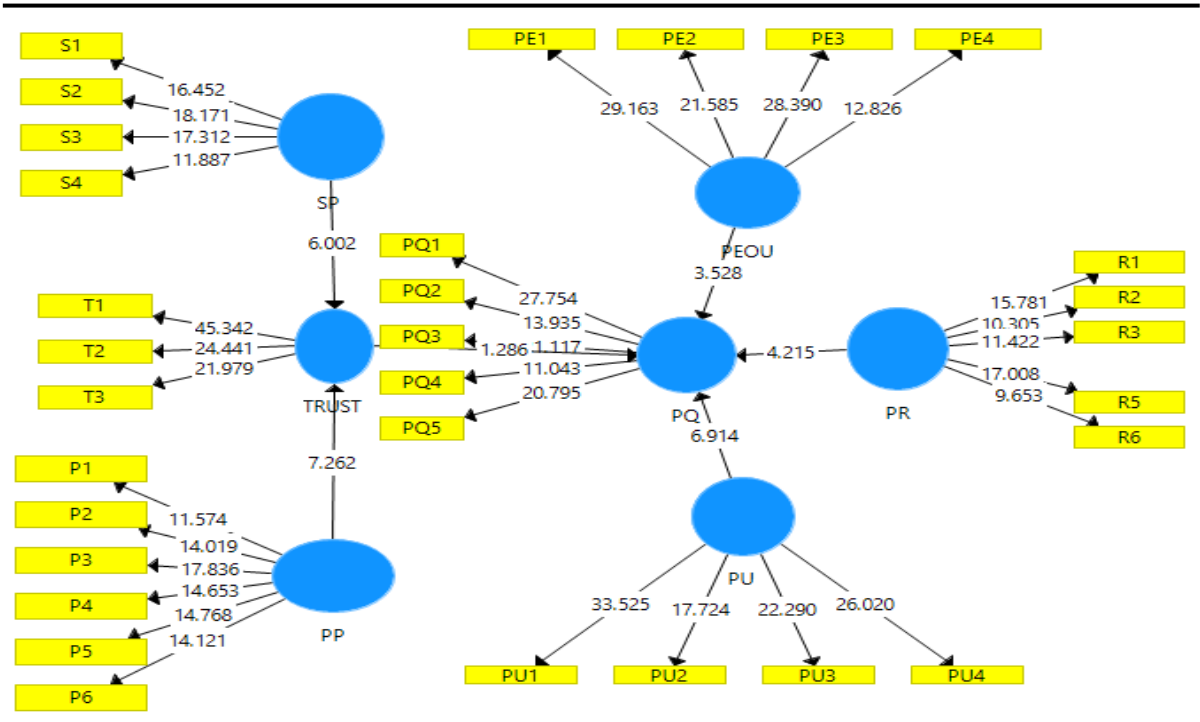


Table 9 depicts the beta value between the variables considered in the research. Perceived usefulness (PU) has a greater value of beta than Perceived Quality (PQ), which indicates that perceived usefulness has a greater impact on Perceived Quality. Perceived Trust beta to the Perceived Quality has a minimum value of 0.058. From this, we can see that the two variables are not so much related to one another that the impact of the Perceived Trust on the Perceived Quality is not so significant. And respectively, the Beta between SP -> PT, PP -> PT, PEOU -> PQ, PR-> PQ are 0.342, 0.382, 0.224, and 0.204, and from this value of the beta, we can conclude that the impact of these variables on one another are moderate. Security has a significant impact on mobile banking utilization. This finding is consistent with the result of Laforet and Li (2005) due to the security facility of mobile banking creates trust in the digital payment system. Information privacy is the process of building trust in mobile banking utilization because it provides a perceived safeguard for users, which is consistent with the finding of (Siau et al., 2003). In addition, trust is one of the most fundamental concerns for the digital payment system because it creates value for the user and increases their confidence. This finding is consistent with Al-Sharafi et al. (2018).

4. CONCLUSIONS AND IMPLICATIONS

The primary purpose of the research was to understand the impact of security and privacy perceptions on customers’ trust in the digital payment system and its impact on perceived quality. The study focused on identifying the relationship between security perception, privacy perception, perceived trust, perceived ease of use, perceived usefulness, and perceived reliability. The results indicated a significant positive association between security perceptions and perceived privacy on perceived trust. The study also showed that perceived trust, ease of use, usefulness, and reliability have a significant positive relation to the intention to use. With the increase in security and privacy perceptions of individuals, their trust in the digital payment platform increases. This will subsequently lead to an increase in the perceived quality of digital payment platforms. And this research also found that

perceived ease of use and perceived usefulness will lead to an increase in perceived quality. In today's technological arena, where people are more dependent on technology, where technology has been an essential part of life, it's hard to stay away from it. Even in the case of e-payment, technology has taken over the old means of payment, and more and more individuals are using the e-payment platform. From the results, it can be observed that people are more concerned about the privacy factor as compared to the security factor. This indicates that people are worried about possible information leakage while using the e-payment platform.

Moreover, the study confirmed that perceived usefulness has a more significant impact on perceived quality than perceived ease of use. Hence, customers seek a higher degree of a useful e-payment platform to trust e-payment platforms easily. This study further paves the way to conduct research considering the more extensive area coverage in geographical basic. In addition, the study suggests to utilize detailed path analysis in the structural model in future research.

Conflict of Interest

The authors declare that there is no conflict of interest to disclose.

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