

THE INFLUENCE OF TRUST AND SECURITY IN THE USE OF ELECTRONIC PAYMENT SYSTEM IN MANADO

by:

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ABSTRACT

Electronic payment is the way to make in the process of buying and selling customers in real estate market or online market easier. Electronic payments give innovation to consumer with transaction overseas like online shopping. This study aims to determine the influence of trust and security in the use of electronic payment system. Where the independent variables are trust and security influence in using electronic payment system as the dependent variable. This research used quantitative method. The analytical method used was multiple linear regression analysis. The data used in this research is primary data obtain through the questionnaire. The population in this study was taken at mall and superstore in Manado. Samples are taken from 100 respondents using purposive sampling technique. The result found that security is the most influential to usage of electronic payment system, then trust. Indeed, security and trust has significant influence on usage of electronic payment system. In fact customers are scared that during the transactions hackers and Internet interlopers will steal their information. The service providers should improve the security system to prevent fraud. The service provider must build customers trust, avoid the misuse of technologies, protect customer's privacy and maintain the companies' reputation. So the effectiveness of security can be created.

Keywords: trust, security, electronic payment system.

INTRODUCTION

Research Background

Economic system has evolved overtime. This development is characterized by the amount of transactions occurring in the market economy. World economy that is increasingly growing made participating countries to adjust to these developments. Increase in economic markets does not run by it self, but is supported by the information system is increasingly growing as well.

Payment systems used in the economic system is the most important thing in the market. Payment system is simple yet creates little economic context. To scale the level of the world economy should be using electronic payment systems that are more advanced in accordance with technological developments.

Along with the development of technology and information, then start creating a new payment method that is more practical, namely electronic payment. Electronic payment is the way to make in the process of buying and selling customers in real estate market or online market easier. When electronic created the need for e-payment services, traditional cash-based and account-based payment instruments were used as a model of. Simultaneously, new intermediaries such as PayPal succeeded in fulfilling some of the new needs of online merchants and consumers (Dahlberg et al. 2008).

Nowdays, the use of electronic payment is no longer a novelty. We can see in every store / supermarket provides payment for the use of the machine payment card. From the perspective of the consumer, such as internet technology provide greater value, such as comfort, a wider choice of products and services at lower prices.

E-Payment system is efficient and reliable allowing payments faster, better tracking transactions and transparency, in turn, will reduce lead time, lead to cost savings and promote a relationship of trust between buyers and sellers. With the rapid development and adoption of technology in operations involving financial transactions, assimilate and user experience quality technology E-Payment tend to form their own perceptions and expectations. However, differences in perception of the customer to make some people reluctant to use the electronic payment system. Level of security and customer confidence to be one of the driving that makes people continue to use these electronic payment systems.

In this research, researcher are used several data sample based on the demographic factors. There were 57 females and 43 males became the respondents that used to measure each part of variables had influenced usage of electronic payment system. For the method itself, researcher using multiple regression to define all of the variables which having simultaneously or partially effect to the usage of electronic payment system.

Research Objective

There are three main objectives in this research, consist of :

1. To analyze the trust towards using e-payment systems.
2. To analyze the security towards using e-payment systems.
3. To analyze the variable has strongest influence on the use of electronic payment system.

THEORITICAL REVIEW

Customer Behavior

Schiffman and Kanuk (2007:3), consumer behavior is defined as the behavior that consumers display in searching for, purchasing, using, evaluating, and disposing of products and services that they expect will satisfy their needs. Kotler and Keller (2008:75), consumer buyer behavior refers to the buying behavior of final consumers-individuals and household who buy goods and services for personal consumption. Consumer buyer behavior is influenced by the buyer's characteristics and by the buyer's decision process. There are 4 factors that influence the behavior of consumer: Cultural, social, personal and psychological factor. Kotler and Keller (2009:12)

Customer Decision Making

The process of making purchase decision based on cognitive and emotional influence such as impulse, family, friends, advertisers, role models, moods, and situations that influence a purchase. Schiffman and Kanuk (2007:3).

E-Payment System

E-Payment is defined here as the transfer of an electronic value of payment from a payer to a payee through an e-payment mechanism. Weir (2006). E-payment services exist as web-based user-interfaces that allow customers to remotely access and manage their bank accounts and transactions. Lim (2008).

Previous Research

Kim (2009) conduct research that is An empirical study of customers' perceptions of security and trust in e-payment systems. This study examines issues related to e-payment security from the viewpoint of customers. This study proposes a conceptual model that delineates the determinants of consumers' perceived security and perceived trust, as well as the effects of perceived security and perceived trust on the use of e-payment systems. To test the model, structural equation modeling is employed to analyze data collected from 219 respondents in Korea. The result show that technical protections and security statements are significant factors for improving consumers' perceived security. Tsiakis and Stephanides (2004) conduct research that is The concept of security and trust in electronic payments. The goal of this research is to show the security and trust in electronic payment system to give solution in the usage of this payment method. Building up a new payment system or an infrastructure of trust for secure transaction is escorted with a significant amount of investments. These investments will compose a worthy return only and if only the new infrastructure is widely

used. Meaning that the hazards of security and trust have been confronted with a high level of success. For public key systems to work properly in the public domain the public key must be freely accessible and also both senders and receivers must have a reliable way of designating that public keys are the keys of parties with whom they wish to transact. Implicates the security and trust issues that are essential for every electronic payment mechanism in order to be accepted and established as a common medium of financial transactions.

Tsiakis, Stephanides and Pekos (2007) conduct research that is Survey of Customers' Conceptions of Security and Trust in E-Payment System. This research shows that both technical contribution and security declaration are significant factors for improving consumers observed security. Consumers observed security is positively related to consumers observed trust and EPS use. The results clearly delineate the role of consumers observed security in building the trust of consumers and the positive impact of both observed security and observed trust on EPS use. This research provides a theoretical foundation for academics and also practical guidelines for service providers in dealing with the security characteristic of e-payment systems.

Conceptual Framework

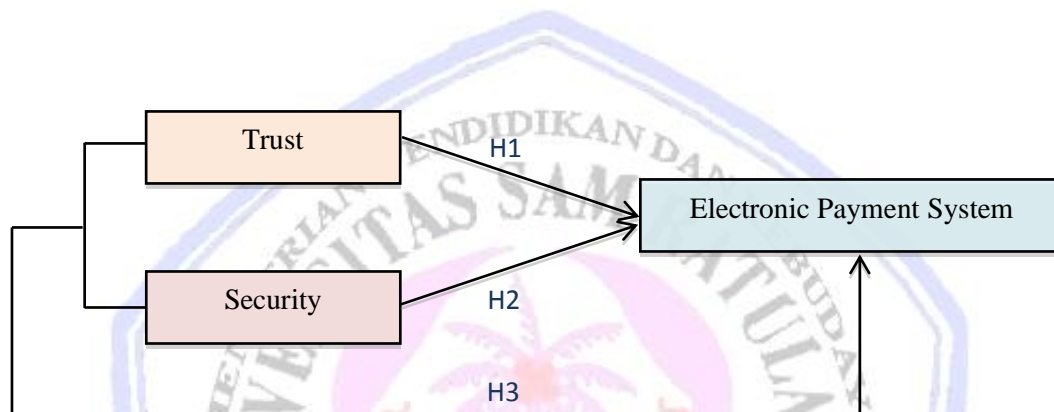


Figure 1. Conceptual Framework

Source : Data Processed, 2014

Research Hypothesis

1. H₁: Trust influences the usage of electronic payment partially.
2. H₂: Security influences the usage of electronic payment partially.
3. H₃: Trust and security influences the usage of electronic payment simultaneously.

RESEARCH METHOD

Type of Research

Type of this research is causal research. Causal research also determines if one variable causes another variable to occur or change. This study will be conducted in quantitative research methods.

Place and Time of Research

The study is done in the city of Manado, North Sulawesi especially against city people of Manado who used electronic payments system as their payment method for transaction. The study is done from November to December 2014.

Population and Sample

Population

This research used population as the data sources to make an appropriate result of data. Population is generalized to the object/subject which is have a certain quantity and characteristic that is required by researcher to studying and to gain conclusion (Sekaran and Bougie, 2009:262). The population are used in this study are the people who used electronic payment as their payments system in Manado.

Sample

Sample is the subject of the population. As a part of the population, the sample gives a true picture of the population. The samples were taken from 100 respondents who used electronic payments system as their transaction payment method in mall or super store.

Data Collection Method

This research used primary and secondary data. The primary data obtained directly from the source, taken and recorded for the first time (Sekaran and Bougie, 2009:183). The secondary data is that have already been gathered by researchers, data published in statistical and other journals and information available from any published or unpublished source available either within or outside the organization, all of which might be useful to researcher (Sekaran and Bougie, 2009:184).

Operational Definition and Measurement of Research Variables

1. Trust (X_1) can be described as a customer views on the use of sustainable products. Trust in Electronic Payment System is defined as consumers' belief that e-payment transactions will be processed in accordance with their expectations.
2. Security (X_2) can be described as a crucial factor influencing consumers' trust in online activities. Informing and reassuring consumers regarding the security of their payment options, it will be possible to influence consumers' perceptions.
3. Electronic payment (Y) can be described as the transfer of an electronic value of payment from a payer to a payee through an e-payment mechanism. e-Payment services exist as web-based user-interfaces that allow customers to remotely access and manage their bank accounts and transactions.

Data Analysis Method

Validity and Realibility Test

Validity is a test of how well an instrument that is developed measures the particular concept it is intended to measure (Sekaran and Bougie, 2009:157). To analyze the validity of questionnaire, Pearson Product Moment is used. The purpose of reliability test is to check the consistency of a measurement instrument. The reliability test in this research uses Alpha Cronbach. Cronbach's Alpha is reliable coefficient that can indicate how good items in asset have positive correlation one another.

Multiple Regressions

The method of analysis used in this study is multiple regression models to approach the return. To find out the influence of dependent variable with independent variables used multiple linear regression with the formula:

$$Y = \alpha + \beta X_1 + \beta X_2$$

Whereas:

Y : Electronic Payment System

X_1 : Trust

X_2 : Security

RESULT AND DISCUSSION

Result

Validity Test

The result of the test the validity of acquired three outputs the first is variable trust (X_1), variable security (X_2), and electronic payment system (Y). The value of the correlation is compared with Pearson correlation. R the table sought in significant 0.3 with the two side and the amount of data (n) = 100, then obtained by 0.751 r table. The variation in Y (electronic payment system) is strongly positive associate on of X_1 (trust) and X_2 (security).

Reliability Test

The output can be known from the value of reliability (Alpha Cronbach's) for each variable. Cronbach's Alpha value is 0.701. Because the value above 0.70, then it can be inferred that all the variables in this study is reliability.

Multiple Linear Regression Analysis

Table 1. Multiple Linear Regression Test

| Model | Coefficients ^a | | | | | |
|-------|---------------------------|-----------------------------|------------|---------------------------|-------|------|
| | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1,735 | ,911 | | 1,905 | ,060 |
| | Trust | ,337 | ,061 | ,401 | 5,486 | ,000 |
| | Security | ,512 | ,074 | ,505 | 6,911 | ,000 |

a. Dependent Variable: Electronic Payment System

Source: SPSS 20 Data Analysis, 2014

From the results of the regression equation can be written in the Regression Equation as follows:

$$Y = 1.735 + 0.337 X_1 + 0.512 X_2$$

The explanations of the equation are:

1. Constant 1.735 shows the influence of Trust (X_1), Security (X_2), and Electronic Payment System (Y). It means that, in a condition where all independent variables are constant (zero), Electronic Payment System (Y) as dependent variable is predicted to be 1.735
2. 0.337 is the slope Trust (X_1) meaning if there is increase while other variables are constant then Risk Perception is predicted to increase by 0.337
3. 0.512 is the slope Security (X_2) meaning if there is increase while other variables are constant then risk perception is predicted to increase by 0.512

Classical Assumption

Normality

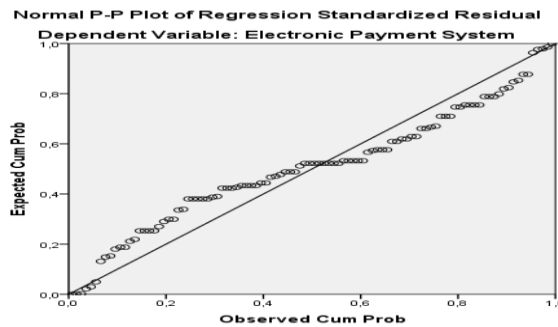


Figure 2. Normality

Source: SPSS 20 Data Analysis, 2014

Figure 2 shows the dots spread around the line and follow a diagonal line, and residual on the model of the regression distributed in an abnormal manner.

Multicollinearity

Table 2. Multicollinearity

| Model | | Collinearity Statistics | |
|-------|------------|-------------------------|-------|
| | | Tolerance | VIF |
| 1 | (Constant) | | |
| | Trust | ,944 | 1,059 |
| | Security | ,944 | 1,059 |

Source: SPSS 20 Data Analysis, 2014

Table 2 show that the quality of services and trust of customer decision purchase of having value tolerance more than 0,1 while VIF, the value of less than 10 so that it can be inferred that does not happen multicolleration between an independent variable in a model of regression.

Heteroscedastisity

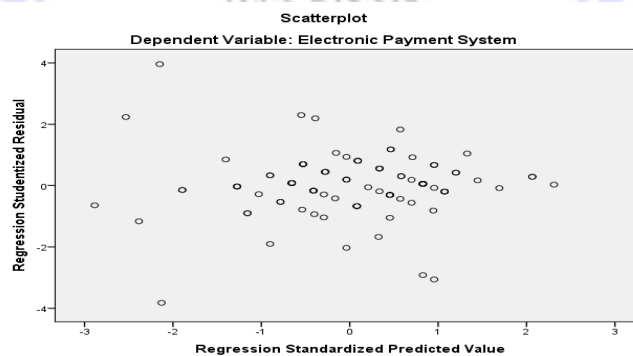


Figure 3. Heteroscedastisity

Source: SPSS 20 Data Analysis, 2014

Hypothesis Testing**Table 3. Coefficient Correlation (r) and (r²)**

| Model Summary ^b | | | | | |
|----------------------------|-------------------|----------|-------------------|----------------------------|---------------|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
| 1 | ,715 ^a | ,511 | ,501 | 1,355 | 1,763 |

a. Predictors: (Constant), Security, Trust

b. Dependent Variable: Electronic Payment System

Source: SPSS 20 Data Analysis, 2014

The output obtained figures R Square of 0,501 or 51.1%. This shows that the percentage of independent variables that influence trust and security to the electronic payment system of 51.1% or variations of free variables used in the model was able to explain a 51.1% variation in the independent variable. While the remaining 48.9% is affected by other variables that are not included in this research model.

Simultaneously (F-test)**Table 4. Simultaneously Test Analysis (F-test)**

| ANOVA ^a | | | | | | |
|--------------------|------------|----------------|----|-------------|--------|-------------------|
| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
| 1 | Regression | 186,367 | 2 | 93,183 | 50,716 | ,000 ^b |
| | Residual | 178,223 | 97 | 1,837 | | |
| | Total | 364,590 | 99 | | | |

a. Dependent Variable: Electronic Payment System

b. Predictors: (Constant), Security, Trust

Source: SPSS 20 Data Analysis, 2014

$F_{count}=50.716$ obtained with a significance level is 0,000. $F_{count} > F_{table}$ (F_{count} greater than F_{table}), then the regression model can be, $50.716 > 3.16$ then reject H_0 . It means the regression model can be used to declare that the independent variable X_1 (Trust) and X_2 (Security) simultaneously effect the dependent variable Y (Risk Perception). Therefore, hypothesis 3 (H_3) has accepted.

Test Partially (t-test)**Table 5. Partially Test Analysis (t-test)**

| Variables | T | t-table | Description |
|----------------------------|-------|---------|-------------|
| Trust (X ₁) | 5,486 | 2,00 | Accepted |
| Security (X ₂) | 6,911 | 2,00 | Accepted |

Source: SPSS 20 Data Analysis, 2014

T-Test

The partial influence for each independent variable will be explained as follows:

1. Trust (X₁) and Electronic Payment System (Y)

t_{count} value on Trust (X₁) is equal to 5.486 with a significance level is 0.000 while the t_{table} is 2.00. So, $t_{count} > t_{table}$ or $5.486 > 2.00$, so H_0 is rejected. Therefore hypothesis 1 (H_1) is accepted, Trust (X₁) has partial effect on Electronic Payment System (Y).

2. Security (X₂) and Electronic Payment System (Y)

t_{count} value on Security variable (X_2) is equal to 6.911 with a significance level is 1.905 while the t_{table} is 2.00. So, $t_{count} > t_{table}$ or $1.180 < 2.00$, so H_0 is rejected. It means hypothesis 2 (H_2), Security (X_2) has partial effect of the Electronic Payment System (Y).

Discussion

The result, it revealed that Risk Perception of electronic payment system (Y) is affected by the Trust (X_1) and Security (X_2). The value of R Square is 0.511, this means that 51.1% while the rest 48.9% other factor is not included in this research but explained by other variables/causes. R Square table also explained that $R=0.715$ which also explains the variation in Y is strongly positive association by X_1 and X_2 .

The result of the multiple regression analysis shows that the value of significance obtained for security is $0.512 > \alpha = 0.05$. It means that security has significant effect on risk perception. T-test result shows that security has partially effect on the use of electronic payment system and F-test result shows that security has simultaneously effect on electronic payment system. In this case the instrument that used to measure the security variable is safety, access credit and privacy.

The significant influence occurred in this research because security did exist in this case, where people are using electronic payment system. Security in the electronic payments system is also considered as one of the access credit that guarantee privacy and security in the use of electronic payment than cash. So the safety, access credit, and privacy are important for using electronic payment system.

The result of the multiple regression analysis shows that the value of significance obtained for trust is $0.337 > \alpha = 0.05$. It means that trust has significant effect on electronic payment system. T-test and F-test result shows that trust has partially and simultaneously effect on electronic payment system. In this case the instrument that used to measure the security variable is experience, confidentially, transaction size.

The significant influence occurred in this research is security and trust did exist in this case, where people are use electronic payment system. People in Manado also show that trust in electronic payment system is important. Experience in using electronic payment system will be the basis for further use of the electronic payment system. Confidentially paymet experience in using the electronic system will make the transaction entrust both small-and large transactions using electronic payment. So the experience, confidentially and transaction size are important for using electronic payment system.

Security has significant and partial effect on electronic payment system, while the instrument that used to measure the security variable is the safety, access credit and privacy. Safety in payment system is the most important thing while using electronic payment system. Access credit with payment system helps people easier doing transaction. Overall, electronic payment system is useful for people nowadays. Everyone use online transaction for their daily life. Like people who shopping in mall or other shopping system like shopping online. Then security and trust is some factor that influence people use electronic payment system, with another factor like promotion.

CONCLUSION AND RECOMMENDATION

Conclusion

The results of the research, it can be drawn conclusions as follows:

1. The partial analysis, it turns out the result of the study prove that all independent variable (trust and security) have positive effect on dependent variable is the usage of electronic payment system at Mall and Super store in Manado. That is according to the consumer, both independent variables were trust and security is important when choosing payment method.
2. Simultaneously testing, apparently the result of research proves that all the independent variables (trust and security) simultaneously have a significant effect on the dependent variable usage of electronic payment system.
3. The result of multiple regression test showed that all the independent variables (trust and security) positive influence on using electronic payment system. The highest positive influence on using electronic payment

system is security as indicated from the value of the regression coefficient of 0.512 then followed by the variable trust of the indicated value of the regression coefficient of 0.337.

Recommendation

The suggestion put forwards as complement of the result of research that can be given as follows:

1. Security as the highest influence on using electronic payments system. For company that provide the electronic payments method should keep and improve the level of security to increase usage of electronic payment system to prevent fraud.
2. When increase the level of security, the level of trust automatically increase. As the secure payment method, the consumer will get good experience to trust that payment method to repeatedly choosing that payment method. So, overall the recommendation of this research is improve the level of security to increase the level of trust.

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