INFLUENCE OF INFORMATION QUALITY, SYSTEM QUALITY, SERVICE QUALITY AND SECURITY ON USER SATISFACTION IN USING E-MONEY BASED PAYTREN APPLICATIONS

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Nowadays technology grow extremely fast and it is helpful in communication and transactions, this effect to human behavior that people consider using technology intentively in daily activites cause of its facilities, one of facilities is digital economic transactions or e-money. Due to increasing of technology, there are some companies run their business form e-money based applications, one of the applications is the PayTren. The purposed of this research is to examine the satisfactory of the user who apply PayTren applications, such as the influence of information quality, system quality, service quality and security. The method of the research is based on DeLone and McLean models, then it will be modified. The research's data is quantitative data. researchers collected 89 questionnaires from the population of PayTren application users in Batam by using a purposive sampling technique. The conclusion of the research show that there is an influence between the quality of information, service quality and security on the satisfaction of e-money users based on the PayTren application, while it is found that there is no influence between the quality of the system on the satisfaction of e-money users based on PayTren applications.

Keywords: *information quality, system quality, service quality, security, user satisfaction, e-money, PayTren*

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1 BACKGROUND

Internet-based technology has become one of the most popular business channels in this last time. Information technology has had a relevant effect on the category of service in world trade. Information technology can help improve efficiency and effectiveness of business processes in making managerial decisions quickly and accurately, so that it cab make solutions, innovation, and make a significant impact through technology.

The number of e-money users because of the often used cash has many weaknesses, such as buyers are expected to bring for the price of goods to be purchased, it is considered less practical.l. Sellers will also be hassless to give the refund so that ignores the right of the buyer to obtain an appropriate return (Adityawarman, 2014). In addition, a lot of fake money in circulating which can cause the community to fooled (Ramdani, Suryani, Gandana, Setyamarta, & Aulina, 2015). Habits of people who want to do something easily are also factors that cause a lot of use of e-money.

Electronic money is cash owned by someone. But the nominal value is converted into an electronic form. In December 2018, the number of e-money transactions in Indonesia from the data of Bank Indonesia is 167,205,578 units of transaction (Bank Indonesia, 2018). Bank Indonesia has also established 36 companies that have a license issuing electronic money, one of them is PT Veritra Sentosa International with its products called PayTren. PayTren is a micropayment that can be used for payment which is one of the appropriate and useful alternatives to facilitate the user to transact, and able to change the payment counters in general.
As reports from DailySocial 2018, recorded that in the last two years the growth of fintech start-up reached 78%, and most of the focus in the payments sector. This result showed that users of based on smartphone application, PayTren entered in the top 5 is 19.27% with the number of respondents 825 people.

This study uses the Information System Success DeLone & McLean model then modified the model in this research. This is done to suit the needs and objectives of research. Based on previous research using DeLone and McLean model also made modifications that adjust their research conditions and needs, that is the research by Tovar, Almazan, and Quintero, (2017) explains that the results of user satisfaction is influenced by the quality system, the quality of information, quality of service support the sustainability of the organization. But different on the results of Stefanofic, Marjavonic, Delic, Culibrk, & Lalic, (2016), that user satisfaction not been affected by the information quality and service quality, but the quality of the system is influential. In the statement, it is known that research uses the Delone & McLean model for the basic of research theory and modified according to research needs.

This research is different from previous research because of modification on DeLone & McLean model is by dividing into four independent variables, that are quality of information, systems quality, service quality and security. Then the dependent variable using the user satisfaction on PayTren applications in Batam. This research is expected to see the effect of the above factors so that it can be used development in information systems in business, especially e-money based applications. Based on the above background exposure, researchers interested in conducting research with the title "The Effect of Information Quality, System Quality, Service Quality and Security on User Satisfaction in Using E-Money based PayTren Applications".

2. THEORETICAL FRAMEWORK
Theory of Information System Success DeLone & McLean

The results of this research were accepted by many part because it is considered valid and in accordance with the needs. The first model for the theory of Information System Success DeLone & McLean 1992 connects several parameters of measuring the success of information systems in which there are information quality, system quality, use, user satisfaction, individual impact and organizational impact.

Information System Success DeLone & McLean Model in 1992 then developed by maintaining usage variables but added the intensity of use, and added the variable of service quality in consideration that measurement of system effectiveness usually only focus on the products, compared with the service function of provider, so that the variables in the updated Information System Success Model has been supported empirically.

Information Quality

Information quality measures the quality of the output of information system, the quality produced by the information system, especially in the form of a report (DeLone & McLean, 2003). Information quality is characteristic of the output persented in an information system that includes management reports and web pages (Petter & McLean, 2009). Measuring the quality of information is affected completeness, formatting, relevance, accurate, and timeliness.

System Quality

The system quality is characteristic of the desired quality of the information system and the desired quality information is the information of product characteristics (DeLone & McLean, 2003). System quality is performance of system itself, system quality measurement is affected by ease of use, reliability, flexibility, and security.

Service Quality

The quality of service perceived by the user is measured by five indicators adapted from the fields of marketing, there are assurance, emphathy (DeLone & McLean, 2003). Quality of service is associated with a way to meet the needs and desires of the user, and how process of delivering match in accordance with user expectations.

Security

Security can be defined as the level of protection against criminal activity, harm, damage, and loss (Rainer & Prince, 2011). Following this broad definition, the security of information overload all policies and processes designed to protect organizational information and information systems of access, use, disclosure, disruption, modification, or destruction of unauthorized. Security measurement is affected by transmission mechanism, financial security, and the security system (Jin & Park, 2006).

User Satisfaction

According DeLone & McLean (2003) user satisfaction is often used as a replacement measure the effectiveness of information systems. Overall users satisfaction is affected by information quality, systems quality, and service quality. So that the instrument used to measure the level of user satisfaction is to see the level of satisfaction regarding the report or output produced and support services from system providers. Satisfaction is feeling delight or disappointed someone who comes from a comparison between her impression of the performance and outcome of a product and expectations (Kotler, 2005).

Development of Hypothesis
Influence of information quality to user satisfaction

Tovar, Almazan, and Quintero, (2017) stated that the analysis results of variable information is the most important variable in determining user satisfaction, because users consider a system of information capable of providing the accuracy and availability of information as an element of success system. The better quality of information, then higher the user satisfaction rate of the system. information quality cn demonstrate the extent to which information can meet the requirements and expectations for all the users who need the information, so that users will be satisfied with system of given application. On the basis of the description, then formulated the hypothesis:

H1: Information quality positively affects user satisfaction.

Influence of system quality to user satisfaction

The result of Tovar, Almazan, and Quintero, (2017) research, about the effect of the information system on organization showed that the quality system positively affected the user satisfaction, it comes from user's perception that the system is easy to use, user-friendly, fast, and compatible with other system used in the institution. Users should be able to control the information system, so they can work effectively. The quality of the system can determine user response or feeling after using an application system. Therefore, when a system is aasy to use, it will increase user satisfaction. On the basis of the description, then formulated the hypothesis is:

H2: Quality system positively affects user satisfaction

Influence of service quality to user satisfaction

Salameh Ahmad, Zulhumadi, and Abubakar, (2017) in his research explains that the ease of use, interactivity, and the innovativeness of the website has a significant positive correlation with quality of service. As a result, the quality of service significantly affects user satisfaction. Service quality of m-commerce can bridge the communication between users and businesses, so it can give users the satisfaction to access the system anytime and anywhere that makes interaction with each other more effective, in other words m-commerce can provide convenience in handling the transactions. Good service quality will improve user satisfaction. Companies should be able to pay attention to the quality of service provided to its customer, because service is an important factor every business. Services that satisfies its customers is the service that accepted by users is appropriate and deemed exceed user expectations. On the basis of the description, then formulated the hypothesis:

H3: Service quality positively affects user satisfaction

Influence of security to user satisfaction

According Raharjo in research Utami & Kusumawati, (2017), information security is how we can prevent fraud, detect any fraud in an information-based system, where information itself has no physical meaning. Utami & Kusumawati, (2017), also explains in his research that the higher the security of e-money then student's interest in using e-money higher. Users will think of impact it will occur on the security of an e-money used. Users will be tend to use applications that are deemed to provide better data, security of personal data and external data, so user does not not have to worry about executing their transactions. On the basis of the description, then formulated the hypothesis:

H4: Security positively affects user satisfaction

Based on the description of the development of hypotheses described, then the variables used in this research are described in models below:
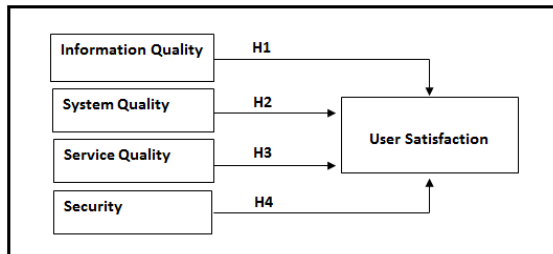
Source: data processing by author (2019)

3. METHODOLOGY

This research uses quantitative approach using primary data. This research uses questionnaire instruments. This method is used to explain and answer the formulation of the problem. This research will test the effect of independent variables (information quality, system quality, service quality and security) on the dependent variable (user satisfaction). Determination of the number of samples using Roscoe method in Sugiyono (2014) criteria for the study sample that will perform with univariate analysis, that is minimum of 10 times the number of variables studied. In this research, there are five variables, four independent variables and one dependent variable that minimum number of members of the sample is 50, so the researchers set number of samples more than 50 and obtained as many 89 samples of research with the category of users PayTren application in Batam city. The research instrument uses a questionnaire adapted from DeLone & Mclean (1992), DeLone & Mclean (2003) and Jin and Park (2006) questionnaires. Measurements in this study used the Likert Scale. Sample selection technique is purposive sampling, with user criteria of PayTren application in Batam city that transacted at least 1 time.

Data Processing and Analysis Techniques

The data were processed using statistical tools such as SPSS 22. Data was analyzed using statistical analysis descriptif, validity and realiability, test the classical assumption of normality test, multicollinearity, and heterocedastity, linear regression analysis and statistical T test. The model of the research equation as follows:

$$Y = \alpha + \beta1X1 + e \dots\dots\dots\dots (H1)$$
$$Y = \alpha + \beta2X2 + e \dots\dots\dots\dots (H2)$$
$$Y = \alpha + \beta3X3 + e \dots\dots\dots\dots (H3)$$
$$Y = \alpha + \beta4X4 + e \dots\dots\dots\dots (H4)$$

Information:

Y	= User Satisfaction
α	= Constant
β1-β4	= Regression coefficient
X1	= Information Quality
X2	= System Quality
X3	= Service Quality
X4	= Security
E	= *error*

4. RESULTS AND DISCUSSION
Respondents characteristics

Distributing of questionnaires conducted by online and directly. Google form of questionnaires using a total of 93 questionnaires, and found some of the data that can not be processed as much as 35 questionnaires. Questionnaires circulated questionnaires obtained as many as 31 and can be processed entirely. Based on this, the samples that meet the criteria totaling 89 samples, can be seen in Table 1 below:

Table 1 Characteristics Data

Information	Frequency
Questionnaires were distributed	124
The questionnaire that can not be processed	35
The samples used	**89**

Source: data processing by author (2019)

Respondents who filled out questionnaires then identified based on gender, age, education, past, type of work and long experience of using *e-money* PayTren-based applications. This identification is

performed to determine the general characteristics of the respondent.

Table 2 Classification of Respondents

Criteria Responden		Total	Percentage
Gender	Man	46	51.7%
	Woman	43	48.3%
Age	21-25 years	35	39.3%
	26-30 years	18	20.2%
	31-35 years	14	15.7%
	≥ 35 years old	22	24.7%
Education last	SMP	7	7.9%
	SMA / SMK	51	57.3%
	Diploma	16	18.0%
	S1	14	15.7%
	S2	1	1.1%
Type of work	Student	18	20.2%
	Private employee	29	32.6%
	entrepreneur	19	21.3%
	Etc	23	25.8%
Experience Application	<1 year	34	38.2%
	1-2 years	37	41.6%
	> 2 years	18	20.2%
Number of Samples		**89**	**100%**

Source: data processing by author (2019)

Descriptive statistics

Here's a table 3 which shows the descriptive statistics of each variable to be analyzed in this study.

Table 3 Descriptive statistics

	N	*Min*	*Max*	*mean*	*Std. Dev.*
Information Quality	89	12	20	16:29	2,181
Systems Quality	89	9	16	13:13	1,848
Service Quality	89	4	8	6.76	.966
Security	89	7	12	10:15	1,474
User satisfaction	89	10	20	17:31	2530

Source: Data processing from SPSS 22

Based on descriptive statistics test in Table 3 are described from N as many as 89 of filling questionnaire by respondent obtained the minimum value of information quality variable is 12 and the maximum value is 20, the system quality variable get minimum value of 9 and a maximum of 20, the service quality variable get minimum value of 4 and maximum of 8, security variable get minimum value of 7 and maximum value of 12 and user satisfaction variable get minimum value of 10 and maximum value of 20. Based on this descriptive test, highest average value is 17,31 followed by the highest standard deviation value is 2.530.

Validity and Reliability Test Results

Results of the calculations is all variables are valid and reliable.

Classical Assumption Test Results
Normality test

Normality test used in the study was Kolmogorov -Smirnov. In this test the decision is obtained when sig> 0.05 then data can be said to be normally distributed. Here are the test results in Table 4:

Table 4 Test Normality

	Residual unstandardized
Kolmogorov-Smirnov Z	0.965
Asymp. Sig. (2-tailed)	.310

Source: Data processing from SPSS 22

Based on above data, it can be seen that the value Asymp.Sig: (2 tailed) amounted to 0.310. It shows that the significance values greater than 0.05, it can be concluded that the data is normally distributed.

Multicollinearity test

A regression model is said to be escaped from multicollinearity test when tolerance values is > 0.10 and the value of Variance

Inflation Factor <10. Here are the test results in Table 5:

Table 5 Test multicolinearity

collinearity Statistics	
tolerance	VIF
0345	2902
0295	3385
0409	2,447
0366	2,732

Source: Data processing from SPSS 22

Based on the above data it can be seen that each variable that meets the requirements of tolerance values> 0.1 and VIF <10. So, it can be concluded that there is no multicollinearity between variables in this regression model.

Heterokedasticity test

Testing is done by using test heteroskedasticity Glejser. If the significance value greater than 0.05, free of heterokedasitas.

Table 6 Test heterokedasticity

variables	significance
Quality information (X1)	0112
Quality Systems (X2)	0323
Quality of Service (X3)	0089
Security (X4)	0359

Source: Data processing from SPSS 22

Based on the above data it can be seen that the value of the significance of the correlation results greater than 0.05. It shows that the variables tested free of heterokedasticity.

Hypothesis Testing Results

Simple linear regression analysis is used to determine the direction of the relationship between the dependent and independent variables. Simple linear regression calculation results can be seen in Table 7.

Table 7 Test Regression Linear Analysis

Model	Coefficients unstandardized		Sig.
	B	Std. Error	
(Constant)	0484	0370	0193
Information Quality	0294	0146	0048
Systems Quality	-0017	0165	0.920
Service Quality	0479	0192	0014
Security	0409	0163	0014

Source: Data processing from SPSS 22

1.   Information quality positively affects user satisfaction

User satisfaction = 0484 + 0146 + 0.294information quality

Based on the equation the first hypothesis known values of information quality coefficient of 0.294 is positive, and the information quality has a significant value of 0048 < 0.05. It can be concluded that the first hypothesis was accepted. That is, the information quality has a positive significant influence to user satisfaction using e-money based Paytren paytren application. If the value of information quality (x1) up 1 unit, then user satisfaction (y) will increase by 0.294 assuming other variables are constant / fixed.

The results of this hypothesis in accordance with the theory of information system success DeLone & Mclean (1992) where the measurement of information quality is influenced by the characteristics of completeness, formatting, relevance, accurate, and timeliness. This demonstrates to increase user satisfaction the information given system must be qualified by presenting detailed information that covers all the necessary information of the user. Information provided by the system will greatly give satisfaction to users if the information is easy to use, in line with the facts, according to the need and can convince users to make decisions. When the information is already qualified then the user will feel confident to transact and

therefore it affects to user satisfaction, The higher likelihood that consumers are re-conducting transactions using the Paytren app-based e-money app.

The results of this study reinforced by research conducted Tovar, Almazan, and Quintero, (2017) which shows that the quality of information directly influence user satisfaction. Supported by research conducted from Gunawan, (2018) and research Rudini, (2015) which shows the quality of information significantly positive effect on user satisfaction. This study does not support research conducted by Stefanofic, Marjavonic, Delic, Culibrk, & Lalic, (2016) who found that the quality of the information does not affect the user satisfaction.

2. System quality positively affects user satisfaction

User satisfaction = 0484 - 0.017 system quality + 0.165

Based on the equation of the second hypothesis known values of system quality coefficient of -0.017 and has a significance value of 0.920 > 0.05. It can be concluded that the second hypothesis is rejected. This means that there is no effect on the system quality to user satisfaction in using e-money based Paytren application. If the value of the quality system (x2) up 1 unit, the value of user satisfaction (y) will reduced by 0.165, assuming other variables constant / fixed.

These results are not in accordance with the theory of information system success DeLone & Mclean (1992). System quality is performance of the system itself, a condition where one considers it important that the quality of the system can distinguish the characteristics of the product quality and output of an information system.

The results showed that the samples of respondents considered the quality of the system does not affect their satisfaction in using e-money based Paytren application. This can be indicated because the number of samples, objects, sampling sites are used differently from previous studies. The users assume that they use the application because the benefit more from other. The system of an application does not affect their satisfaction in using e-money. This is due to frequent disturptions during transactions at the time of the transaction, where when the system is under repair and upgrading from the central application, the users feel the constraints due to the application updates. he application system also does not affect the user satisfaction indicated by some users who still do not understand thoroughly about the use of the application, such as when the user will conduct transactions wrong transaction select an item that does not correspond to the remaining e-money balance in their application, so that it can be one of the factors that cause the quality of the system does not affect the user satisfaction in using PayTren.

The results support the research by Rudini, (2015) who found the system quality has negative effect and insignificant to user satisfaction. The results of this study did not support the research Tovar, Almazan, and Quintero, (2017) who found the quality system directly influence user satisfaction. Results found by Gunawan, (2018) related to system quality positive significant effect on the quality of the system is also not supported by the results of this research.

3. Service quality positively affects user satisfaction

User satisfaction = 0484 + 0.479service quality + 0.192

Based on the equation of the third hypothesis is known values of service quality coefficient of 0.479 is positive, and has a significance value 0.014 < 0.05. It can be concluded that the third hypothesis is accepted. This means that service quality has a positive significant influence

to user satisfaction using e-money based Paytren application. If the value of quality of service (X3) up 1 unit, the value of user satisfaction (y) will increase by 0.192 assuming other variables constant / fixed.

The results of this hypothesis in accordance with the theory of information system success DeLone & Mclean (2003) where the measurement of service quality is influenced by indicators assurance and empathy. When the quality of service provided, both in terms of services able to provide assurance of risk and doubt, and how to e-money product is able to understand the purposes of its users will be able to improve the user satisfaction of the e-money products offered. Service quality is associated with fulfillment the needs and desires, as well as the accuracy of delivery in balancing user expectations. Services quality make the of Paytren application feel satisfied to use the application as a tool to transact electronically.

The results of this study reinforced by research conducted Salameh Ahmad, Zulhumadi, and Abubakar, (2017) which showed that service quality directly affects the user satisfaction, supported by research conducted Tovar, Almazan, and Quintero, (2017) and research Rudini , (2015) who found a positive effect on the quality of service user satisfaction, but does not support research conducted by Stefanofic, Marjavonic, Delic, Culibrk, & Lalic, (2016) which found that the quality of service does not affect the user satisfaction.

Security positively affects user satisfaction
User satisfaction = 0484 + 0.409security + 0.163

Based on the equation of the fourth hypothesis known values security coefficient of 0.409 is positive, and has a significance value 0.014 < 0.05. It can be concluded that the fourth hypothesis is accepted. This means that security has a significant positive influence user satisfaction using e-money based Paytren

application. If the value of the security (X4) up 1 unit, the value of user satisfaction (y) will increase by 0.163 assuming other variables constant / fixed.

The results of this hypothesis is accordance with the research by Rainer & Prince (2011) which the security is defined as the level of protection against criminal activity, danger, destruction, and loss. When the system can provide both security and secure identity fraud, then one's satisfaction will increase. In this case the security related to e-money, is the user feel protected either from fault of transmission mechanism that resulted in the e-money can not be used, or felt protected from damage and theft and security assured of the system. This security is what makes the users feel confident and increasingly adds to their satisfaction in using e-money.

The results of this research reinforced by research conducted Gunawan, (2018) which found that security has apositive effect on user satisfaction. This results also supported by research Utami & Kusumawati, (2017) which indicates that the security factors affect the satisfaction and interests of students using e-money.

The following is a table of 8 summary results of hypothesis testing:

Table 8 Summary of Hypothesis Test

variables	Coef.	Sig.	result
Information Quality	0294	0048	supported
System Quality	-0017	0.920	not Supported
Service Quality	0479	0014	supported
Security	0409	0014	supported

Source: Data processing from SPSS 22

Coefficient of Determination

The coefficient of determination used are adjusted R-squared. Determination coefficient test results are shown in Table 9.

Table 9 Test Coefficient of Determination

Model	Adjusted R Square	Std. Error of the Estimate
1	0526	0.21483

Source: Data processing from SPSS 22

Based on the above it can be seen that the value of *adjusted square* by 0526. It shows that 52% of the variation variables can be explained by the variable information quality, system quality, service quality and security. The remaining 48% is explained by other variables outside the research

5. CONCLUSION

Through the process of data processing and a series of tests performed in this research, it can be concluded. (1) A partial t test indicates that the information quality has statistical positive influence direction towards user satisfaction and also significant that the first hypothesis is supported. This means that when the information of an e-money product is highly qualified then the user satisfaction is increased to use the e-money. (2) a partial t test indicates that the system quality has a negative effect statistically direction towards user satisfaction and significant value indicates not have a significant effect, so that the second hypothesis is not supported. This means that the quality system has important implications for the satisfaction of users using the Paytren application. (3) a partial t test indicates that service quality has a positive influence statistically direction towards user satisfaction and also significant that the third hypothesis is supported. This means that when a service than a product of e-money is very qualified then increased user satisfaction for the use of e-money. (4) a partial t test indicates that the security has a positive influence statistically direction towards user satisfaction and also significant that the fourth hypothesis is supported. This means that when a secure e-money products that increase user satisfaction for the use of e-money. This means that when a service than a product of e-money is very qualified then increased user satisfaction for the use of e-money. (4) a partial t test indicates that the security has a positive influence statistically direction towards user satisfaction and also significant that the fourth hypothesis is supported. This means that when a secure e-money products that increase user satisfaction for the use of e-money. This means that when a service than a product of e-money is very qualified then increased user satisfaction for the use of e-money. (4) a partial t test indicates that the security has a positive influence statistically direction towards user satisfaction and also significant that the fourth hypothesis is supported. This means that when a secure e-money products that increase user satisfaction for the use of e-money.

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