The Role of Product Knowledge and E-Service Quality on Customer Trust and Intention of Customer to Use Mobile Banking In Banda Aceh

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Abstract

This study aims to determine the effect of product knowledge and e-service quality on banking customer trust and intention to use mobile banking. The population is the banking customers who use mobile banking in Banda Aceh. The sample design used is nonprobability sampling with convenience sampling method and involves 178 respondents. Structural Equation Model (SEM) is used to test the model. The software used is the AMOS and some additional softwares like SPSS and Sobel Calculator. The result shows that product knowledge has no effect on customer trust, electronic services quality effects customer trust, customer trust effects on the intention to use mobile banking, the product knowledge variable has no effect on the intention to use mobile banking. Electronic services quality effects the intention to use mobile banking, customer trust does not mediate the effect of product knowledge on intention to use mobile banking, and customer trust mediates the effect of electronic service quality on the intention to use mobile banking. The originality of this study lies in the new object and the integration of the causality models from several references. The limitation resides in the amount of the object. This model contributes to the academic and practical area, that this can be a reference to enrich the realm of sciences and observe the customers of mobile banking in Banda Aceh.

Keywords: Product knowledge, E-Service Quality, Customer Trust, Intention to Use Mobile Banking.

1. Introduction

(Simanjuntak and Sosrodihardjo, 2014) explained that the traditional economy is generally run through intermediaries or brokers, who operate through individual relations, while the modern economy functions through its banking. Following developments in the modern economic system, aims to bring Indonesia towards a more prosperous and modern society. This is indicated by the existence of financial institutions, especially banks continue to innovate to meet the demand and expectations of customers in providing their services, namely through electronic and internet-based banking.

The growth of internet users continues to increase every year, where in early 2000 internet users numbered as many as 1.9 million people and in 2017 occupied the highest number of 143.26 million of the total population of 265.4 million. The increase in the use of the internet has gradually brought changes towards the development of information technology which has increasingly become more rapid in the 20th century. The internet users will also help replace the position of cash finance into non-cash activities through banking financial institutions. These

events can be seen from developments in information technology which has changed the interaction between the community and financial institutions (Tran and Corner, 2016); (Shaikh and Karjaluoto, 2015); (Soucek and Moser, 2010).

Currently, many electronic payment instrument services such as banking products have sprung up from SMS banking, e-money, internet banking, mobile banking and several other payment applications offered by the banking industry. Mobile banking is one of the latest banking products designed to make it easier for banking customers to make financial transactions independently and can also improve the security of financial transaction services by non-cash transactions. Based on 2014 data on the growth of banking channels in Indonesia, mobile banking or SMS banking occupied the third highest position of 21.8 million users, beating internet banking users, with 7.8 million. This shows that the use of mobile banking is more accessible to individuals by adjusting the time desired by the user.

But the issue of trust can also be a problem for customers when they have to choose to use mobile banking. This statement can be seen from the results of a pilot testing tested on 33 respondents of banking customers in Banda Aceh on the statement that transactions through mobile banking are safe to use, obtaining the lowest approval compared to statements of other trusts. 9 out of 33 respondents disagreed with the security offered by mobile banking. So for electronic and online-based services, it is expected to solve problems related to issues that make customers distrust mobile banking services. Not all banking customers have sufficient trust in web traders who use electronic services to transact with them (Yousafzai, Pallister and Foxall, 2003). (Wang, Chen and Jiang, 2009) supported several statements above that of the various factors that influence trust, knowledge is the main factor that has a large influence.

Customers do need to consider the information they receive for their process first before making a decision. This depends on the information received whether positive or negative. In addition to product knowledge of customer trust in online banking, the quality of electronic services is also a matter that should be considered by banks to ensure the trust of their customers (Chu, Lee and Chao, 2012). Because in the context of online banking, the quality of electronic services is the main focus. Improving the quality of electronic services is important to avoid some cases such as the kidnapping of customer data by a hacker, error applications and various other things that make customers worry about using mobile banking services.

The population of Banda Aceh in 2016 is recorded at 254,904 according to the Aceh Provincial Statistics Agency. The number of banking savings accounts in Banda Aceh is 1,510,359 accounts registered in December 2018 based on data from Bank Indonesia. The amount of savings accounts that exceed the population is influenced by the desire of the community to separate salary accounts, business accounts and personal accounts as savings according to research conducted by Andres, Head of Business Unit inside ID, quoted by Dream.co. For this reason, the researcher makes the data as a basis for the withdrawal of mobile banking customers to be used as research respondents.

2. Literature Review

Mobile Banking

(Miryala and Reddy, 2015) defined that mobile banking is a system that allows customers from financial institutions to transact finances via mobile devices such as cellphones or personal digital assistance. Mobile banking is a new banking product that is growing rapidly in use in several major cities in Indonesia. Technically mobile banking consists of three technological

benefits, namely SMS (Short Messaging System), internet access program (browser) and applications.

Intention to Use Mobile Banking

The use of mobile banking itself greatly influences the user's intention to be able to use it (Khosrow-Pour, 2015); (Dawson and Kim, 2009); (Schierz, Schilke and Wirtz, 2010). Specifically, mobile banking can support users to manage their finances anytime and anywhere (Khosrow-Pour, 2015); (Schierz, Schilke and Wirtz, 2010). The relationship between product knowledge, quality of electronic services and trust with one's intention to use mobile banking is obtained through a discussion of some of the values present in the mobile banking (Nasir, 2013).

Product Knowledge

(Herdianto, 2016) explained in his book that product knowledge is a diverse collection of information that includes brand categories, products, terminologists, prices, features, attributes and trust in products. There are three types of product knowledge, which are divided into the following points:
1) Knowledge in the form of product attributes or characteristics
2) Knowledge in the form of product benefits
   In general there are two types of benefits that customers feel;
   a. The functional benefits are the benefits that can be felt by consumers on the physiological and functions of their products
   b. Emotional benefits, namely benefits from psychological aspects such as emotions, moods or feelings and social angles.
3) Knowledge of satisfaction given a product for consumers

(Tyagi and Kumar, 2004) explained that the human cognitive system generally can interpret all types of information and create knowledge. Humans have two types of knowledge, there is procedural knowledge and general knowledge. In addition, consumers also have three product knowledge in the form of:
1) Knowledge of various product characteristics
2) Knowledge of the good benefits of using the product
3) Knowledge of the value offered by the product in providing satisfaction and advice to Consumers.

Electronic Service (E-Service) Quality

The quality of electronic services (e - service) is seen from the extent to which a website can provide facilities in terms of purchasing or shopping that is efficient and effective, especially in the delivery of products and services (Zeithaml, Bitner and Gremler, 2018). (Barata, 2003) said that the measure of service quality is not only determined by those who serve it but can also be determined by those who are served, as they are those who receive service so that they are able to measure service quality based on their desires and expectations in fulfilling satisfaction.

Customer Trust

In general, trust is something shared between two individuals in a relationship (Chami and Fullenkamp, 2002). (Rousseau *et al.*, 1998) in (Colquitt, Scott and LePine, 2007) developed broadly the definition of trust, "trust is a psychological state consisting of an intention to accept

vulnerability based on positive expectations of the intentions or behavior of others". In the world of digitalization that uses all the internet, trust holds an important part for everyone in determining their activities, especially in online transactions.

Research Model and Hypothesis

The following is a general description of the research model under study to provide a basis for the title raised from problem that is occurred within the research environment.
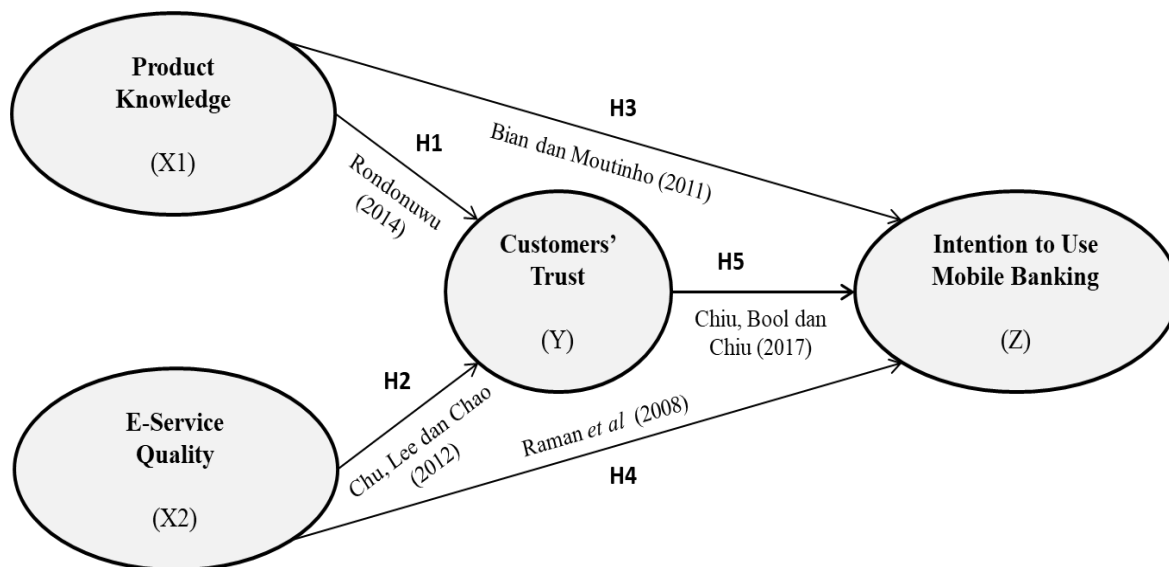

Figure 1. Research Model

H1: product knowledge effects on customer trust
H2: electronic services quality effects customer trust
H3: customer trust effects on intention to use mobile banking
H4: The product knowledge effects on intention to use mobile banking
H5: electronic services quality effects the intention to use mobile banking
H6: customer trust mediates the effect of product knowledge on intention to use mobile banking
H7: customer trust mediates the effect of electronic service quality on intention to use mobile banking

3. Method

The study is conducted in Banda Aceh City and the variables are product knowledge (X1), quality of electronic services (X2), customer trust (Y) and intention to use mobile banking (Z). The population is the banking customers who use mobile banking in Banda Aceh. The sample design used is nonprobability sampling with convenience sampling method and involves 178 respondents. Structural Equation Model (SEM) is used to test the model. The software used is the AMOS and some additional softwares like SPSS and Sobel Calculator. The constructs are built by authors based on the previous causality theories, and special for the e-service quality variable, it uses four dimensions that devide the constructs, that are efficiency, system availability, fulfillment, and privacy.

4. RESULT

Validity Test

This study statistically tests the validity of the data using the Pearson product-moment coefficient of correlation test through the SPSS program.

Table 2. Validity Test

Indicator		Variable	Correlation Coeficient	Critical Value 5% (N=178)	Information
1.	PP1	Product Knowledge (X_1)	0.821	0.147	Valid
2.	PP2		0.872		
3.	PP3		0.886		
4.	PP4		0.877		
5.	PP5		0.743		
6.	E1	E-Service Quality (X_2)	0.756	0.147	Valid
7.	E2		0.611		
8.	E3		0.799		
9.	KS1		0.750		
10.	KS2		0.655		
11.	KS3		0.675		
12.	KS4		0.717		
13.	P1		0.816		
14.	P2		0.650		
15.	P3		0.792		
16.	P4		0.764		
17.	Pr1		0.737		
18.	Pr2		0.766		
19.	Pr3		0.807		
20.	KN1	Customer Trust (Y)	0.815	0.147	Valid
21.	KN2		0.921		
22.	KN3		0.898		
23.	KN4		0.882		
24.	N1	Intention to Use Mobile Banking (Z)	0.869	0.147	Valid
25.	N2		0.871		
26.	N3		0.877		

In accordance with the results of the table above, all variables in this study are valid because they have a correlation coefficient above the critical value of 0.147.

Reliability Test

The reliability testing intended in this study is to determine the extent to which the measurement results remained statistically consistent, namely by calculating the amount of Cronbach Alpha with the help of the SPSS program.

Table 3. Reliability Test

No.	Variable	Variable Items	Alpha Value	Information
1.	Product knowledge (X_1)	5	0.896	Reliable
2.	E-service quality (X_2)	14	0.934	Reliable
3.	Customer trust (Y)	4	0.902	Reliable
4.	Intention to use mobile banking (Z)	3	0.841	Reliable

The reliability test results reveals that the instruments contained in this study are reliable because they have alpha values greater than 0.60. For this reason, these research variables have fulfilled Cronbach Alpha's credibility.

Measurement Model Test and Data Analysis

Normality

Normality test is done to find out whether the distribution of research data is normal or not. The Kolmogorov-Smirnov non-parametric statistical test is used in this study to test the normality.

Table 4. One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		178
Normal Parameters[a,,b]	Mean	.0000000
	Std. Deviation	.43443883
Most Extreme Differences	Absolute	.069
	Positive	.064
	Negative	-.069
Kolmogorov-Smirnov Z		.919
Asymp. Sig. (2-tailed)		.367

a. Test distribution is Normal.
b. Calculated from data.

Decision making on the normality test is based on if the significance value is greater than 0.05, it can be said that the data has a normal distribution. Vice versa, the data is said to be not normally distributed if the significance value that is owned is less than 0.05. The normality test results of this study are 0.367 or> 0.05 where the residual data are normally distributed.

Outlier

To detect outliers, the data must first be converted into a standard score (z-score) which has an average of zero with a standard deviation 1. For samples above 80, the z-score threshold is between 3 and 4. So the value z-scores greater than 3 are included in the category of outliers.

Table 5. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Zscore(PP1)	178	-3.10108	1.07015	.0000000	1.00000000
Zscore(PP2)	178	-3.13387	.94780	.0000000	1.00000000
Zscore(PP3)	178	-2.40445	1.10368	.0000000	1.00000000
Zscore(PP4)	178	-2.93567	.85092	.0000000	1.00000000
Zscore(PP5)	178	-3.11047	.89192	.0000000	1.00000000
Zscore(E1)	178	-3.37458	.79678	.0000000	1.00000000
Zscore(E2)	178	-3.03522	.95692	.0000000	1.00000000
Zscore(E3)	178	-3.43834	.97530	.0000000	1.00000000
Zscore(KS1)	178	-2.92218	1.07896	.0000000	1.00000000
Zscore(KS2)	178	-3.12077	.85653	.0000000	1.00000000
Zscore(KS3)	178	-3.30013	.86599	.0000000	1.00000000
Zscore(KS4)	178	-2.55124	1.30815	.0000000	1.00000000
Zscore(P1)	178	-3.03341	.99604	.0000000	1.00000000
Zscore(P2)	178	-3.95363	.88311	.0000000	1.00000000
Zscore(P3)	178	-3.59092	.92097	.0000000	1.00000000
Zscore(P4)	178	-3.59493	.74827	.0000000	1.00000000
Zscore(Pr1)	178	-3.10160	.93804	.0000000	1.00000000
Zscore(Pr2)	178	-3.00373	.82441	.0000000	1.00000000
Zscore(Pr3)	178	-3.24776	.91124	.0000000	1.00000000
Zscore(KN1)	178	-3.30359	.85706	.0000000	1.00000000
Zscore(KN2)	178	-2.85499	1.14649	.0000000	1.00000000
Zscore(KN3)	178	-2.79662	1.20712	.0000000	1.00000000
Zscore(KN4)	178	-2.72770	1.12572	.0000000	1.00000000
Zscore(N1)	178	-3.22392	.86533	.0000000	1.00000000
Zscore(N2)	178	-2.69060	.93763	.0000000	1.00000000
Zscore(N3)	178	-3.96864	.96273	.0000000	1.00000000
Valid N (listwise)	178				

Multicollinearity

Furthermore, to find out whether the regression model has a correlation between independent or independent variables, a multicollinearity test is performed using Variance

Inflation Factor (VIF), if the VIF value <10 or tolerance> 0.10, it means that there is no multicollinearity between the independent variables.

Table 6. Tolerance dan VIF Value.

Model	Collinearity Statistic on Intention to Use Mobile Banking	
	Tolerance	**VIF**
Product knowledge (X1)	0.410	2.440
E-service quality (X2)	0.309	3.236
Customer trust (Y)	0.338	2.957

It is known that the three tolerance values of the independent variables have values above 0.10 and VIF values below the number 10. The conclusion is that there is no multicollinearity to the regression model of the independent variable and has met the assumptions of multicollinearity test.

Confirmatory Faktor Analysis

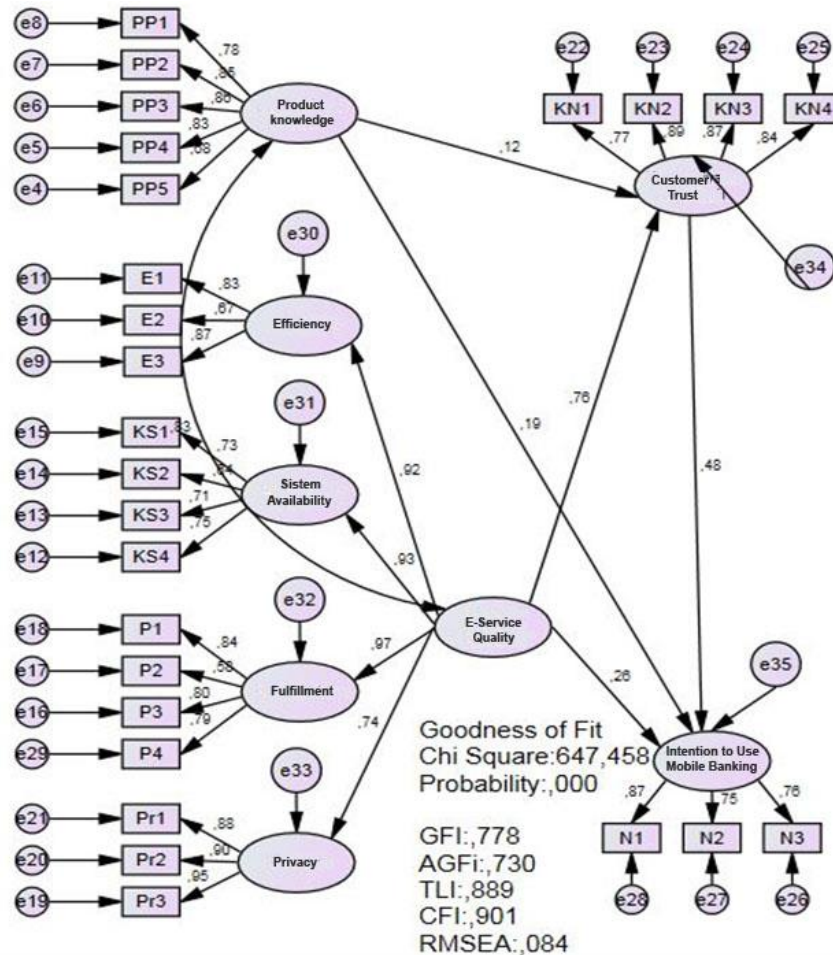The following pictures and confirmatory factor analysis will be explained below.

Figure 2. Confirmatory Factor Analysis Constructive

From the results of the measurement model analysis, the value of chi-square = 647.458 on probability = 0.000 is classified as marginal fit. While RMSEA = 0.084; GFI = 0.778; TLI = 0.889; AGFI = 0.730; and CFI = 0.901 do not meet the criteria and the values indicate marginal fit. More clearly the results of the feasibility test are presented in the following table:

Table 7. Measurement Model

Goodness of Fit Index	Cut off Value	Results	Model Evaluation
Chi-Square	< 329.648	647.458	Marginal
Probability	≥ 0.05	0.000	Marginal
RMSEA	≤ 0.08	0.084	Marginal
GFI	≥ 0.90	0.778	Marginal
AGFI	≥ 0.90	0.730	Marginal
CMIN/DF	≤ 2.00	2.240	Marginal
TLI	≥ 0.90	0.889	Marginal
CFI	≥ 0.90	0.901	Good

The existence of the results of the feasibility test still shows marginal fit, where the value of the factor load is entirely feasible, so a respesification analysis must be done by looking at Modification Indices (M.I.). In respesification, the KS1 indicator is decided to be eliminated by considering the value of Modification Indices (M.I.) which is too high, namely M.I. = 14.725. The following picture is the final result of respesification analysis presented.
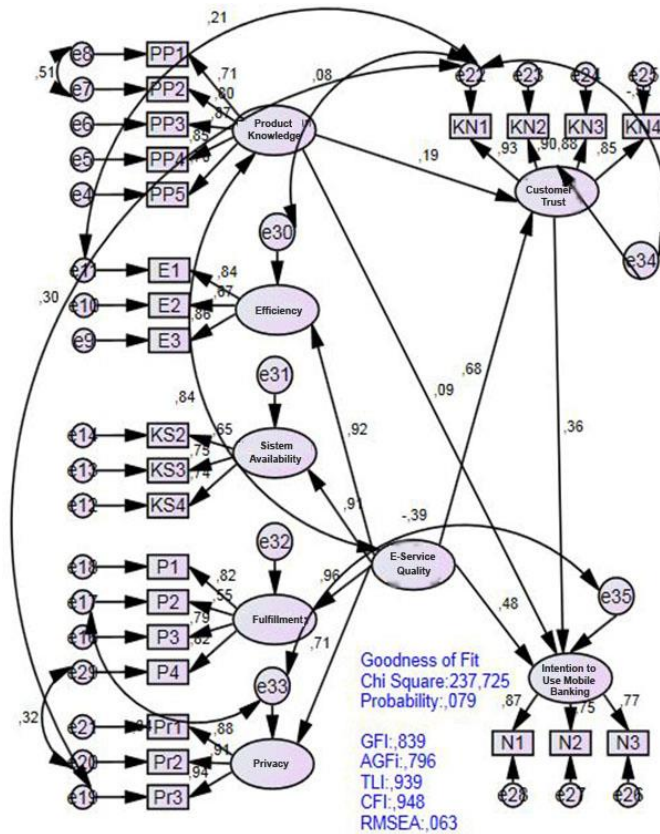

Figure 3. Respefication Analysis of Measurement Model

From the results of the measurement model analysis, the chi-square value = 237.725 on probability = 0.079 is good. While RMSEA = 0.063; GFI = 0.839; TLI = 0.939; AGFI = 0.796; and CFI = 0.948 meet the criteria and the value indicates fit. More details about the results of the feasibility test are presented in the table below:

Table 8. Feasibility Measurement Model

Goodness of Fit Index	*Cut off Value*	**Results**	**Model Evaluation**
Chi-Square	< 329,648	237,715	Good
Probability	≥ 0,05	0,079	Good
RMSEA	≤ 0,08	0,063	Good
GFI	≥ 0,90	0,839	Marginal
AGFI	≥ 0,90	0,796	Marginal
CMIN/DF	≤ 2,00	1,703	Good
TLI	≥ 0,90	0,939	Good
CFI	≥ 0,90	0,948	Good

Looking at the overall table above, it can be concluded that the current measurement model meets the fit criteria by testing the goodness of fit. The output generated from this model can be used as research findings related to the relationship between indicators and their respective constructs.

Hypotesis Analysis

Analysis of the results of data processing at the full SEM model stage is done by the suitability test and statistical tests.
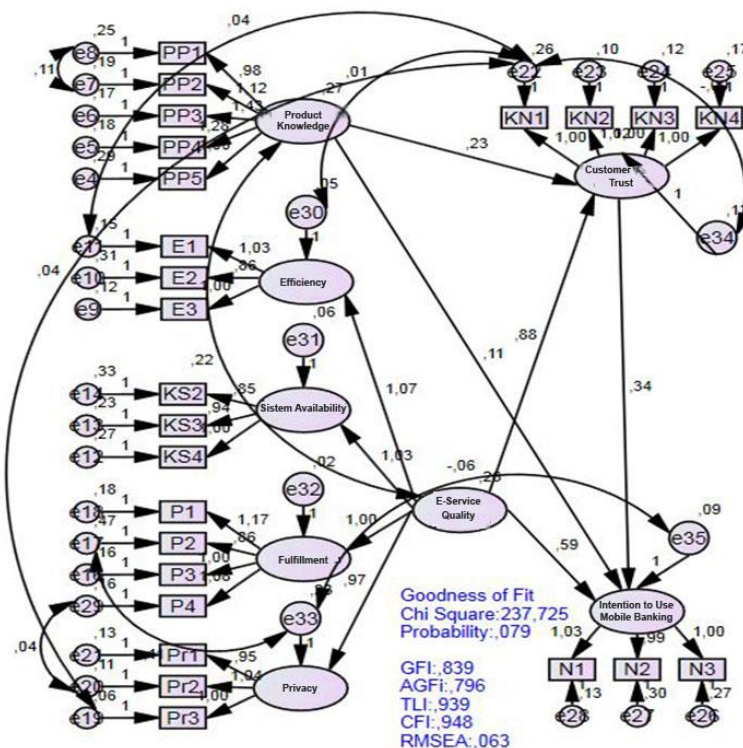

Figure 4. Structural Equation Model (SEM)

Direct Effect

The following is the tests of the five research hypotheses based on the Critical Ratio (CR).

Table 9. Regression Weight

			Estimate	S.E.	C.R.	P
Customer trust	<---	Product knowledge	0.23	0.121	1.927	0.054
Customer trust	<---	E-service quality	0.88	0.143	6.179	0.000
Intention to use MB	<---	Product knowledge	0.11	0.138	0.801	0.423
Intention to use MB	<---	E-service quality	0.59	0.190	2.124	0.000
Intention to use MB	<---	Customer trust	0.34	0.108	3.166	0.002

Based on the SEM analysis results in the table above, there are two hypotheses that have no effect, namely the effect of product knowledge on customer confidence at a significance level of 0.054 and the effect of product knowledge on intention to use mobile banking with a significance level of 0.423. The table above shows that the product knowledge variable has no effect because the significance value is more than 0.05. While other variables have significance values below 0.05 meaning that these variables have influences. The result of product knowledge that does not affect the intention was supported by Mountinho and Bian (2011) and Andaleeb and Anwar (1996) that said the product knowledge does not affect the trust.

Table 10. Hypothesis Conclusion

Hypothesis	Hypothesis	CR Cut off >1.96	P Value Cut off < 0.05	Information
H1	The effect of product knowledge variable (X1) on customer trust (Y)	1.927	0,054 (Sig. > 5%)	H_1 Rejected
H2	The effect of electronic service quality (X2) on customer trust (Y)	6.179	0,000 (Sig. < 5%)	H_2 Accepted
H3	The effect of customer trust (Y) on intention (Z)	3.166	0,002 (Sig. < 5%)	H_3 Accepted
H4	The effect of product knowledge (X1) on intention (Z)	0.801	0,423 (Sig. > 5%)	H_4 Rejected
H5	The effect of electronic service quality (X2) on intention (Z)	3.124	0,153 (Sig. < 5%)	H_5 Accepted

Based on the table above it explains that the product knowledge has no effect on customer trust, while the quality of electronic service has an effect on customer trust. Electronic

service quality and customer trust effects intention, while product knowledge has no effect on intention.

Indirect Effect

The testing of the mediating effect of product knowledge on the intention to use mobile banking through customer trust is explained as follows:
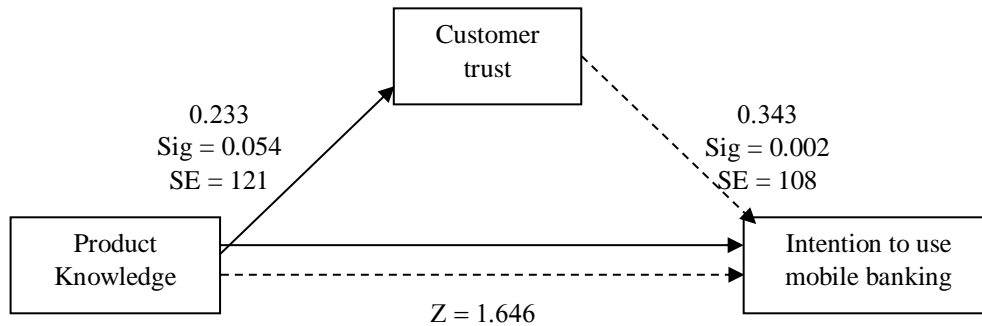

Figure 5. The Effect of Product Knowledge on Intention to Use Mobile Banking

through Customer Trust

From the calculation of the sobel test above obtained Z value of 1.646 <1.98 with a significance of 5% proves that customer trust does not mediate the effect of product knowledge on intention. Furthermore, testing the effect of electronic service quality on the intention to use mobile banking through customer trust is explained below:
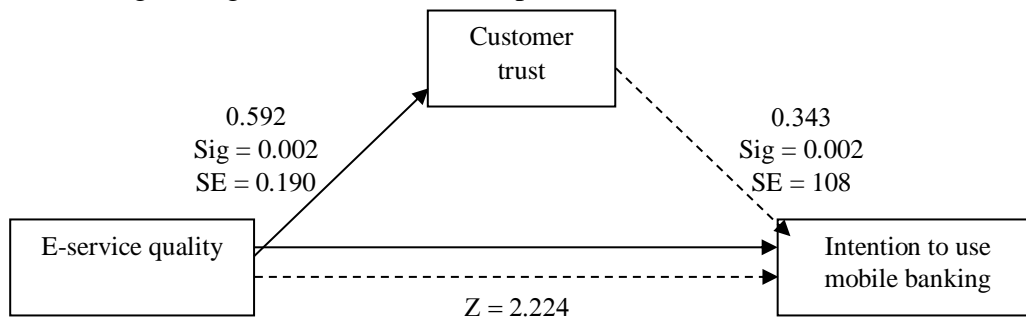

Figure 6. The Effect of Mediating E-Service Quality on Intentions to Use Mobile Banking through Customer Trust

The calculation of sobel test above obtains a Z value of 2.224> 1.98 with a significant percentage of 5% proving that customer trust has a mediating effect on the quality of electronic services on the intention to use mobile banking.

So we can see that in this model, the H6 is rejected and H7 is accepted, and this conclusion reveals that customer trust can be as a mediation variable only for the effect of the electronic service quality.

6. Conclusion

The result shows that product knowledge has no effect on customer trust, electronic services quality effects customer trust, customer trust effects on the intention to use mobile banking, product knowledge has no effect on the intention to use mobile banking. Electronic services quality effects the intention to use mobile banking, customer trust does not mediate the effect of product knowledge on intention to use mobile banking, and customer trust mediates the effect of electronic service quality on the intention to use mobile banking. These all findings illustrate the condition of intention of customer to use mobile banking in Banda Aceh. This can be a reference for the practical managers especially the companies that create the mobile banking. Some implications are mapped. The object of mobile banking research can be developed and expanded in its scope to get more comprehensive and generalized data and results. For banks in the context of increasing the use of mobile banking in Banda Aceh, each bank should continue to improve the quality of its electronic services and provide the information correctly and simply, so that customer trust in mobile banking products will also increase.

The originality of this study lies in the new object and the integration of the causality models from several references. The limitation resides in the amount of the object. This model contributes to the academic and practical area, that this can be a reference to enrich the realm of sciences and observe the customers of mobile banking in Banda Aceh.

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