

The Effect of Perceived Security and Trust Using Mobile Banking Payment Method (In Madagascar)

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Abstract—This study investigates the impact of perceived security and trust using mobile banking on market place. It examines the effect of mobile banking among service quality, customer behavior and buying decision. The findings of the study indicate that among the variables perceived security and perceived trust has significant impacts customer buying decision when shopping online. Moreover, the result expected will be indicate that perceived security had significant positive affect on trust. Service quality improved to be a significant impact on customer satisfaction and buying decision.

Keywords—Mobile banking, security perception, trust perception, Intention to buy

I. INTRODUCTION

The earliest forms of mobile banking came in the form of SMS banking. SMS was the most widespread form of texting messages when the use of mobile phones become more widespread in the late 1990s and SMS banking used that format. However, those banks that offered SMS banking offered a relatively limited service. Moreover, the development of smartphones, such as the Apple iPhone and Smartphone towards the end of the first decade of the new millennium meant that phones were no longer just phones anymore, they were mini computers. This firstly allows people to access online banking through browsers before banks started developing their own dedicated apps.

E-commerce is a commercial transaction through electronic equipment based on internet. During the past ten years, e-commerce grows rapidly since it provides big opportunities for companies to increase sales over internet within any kind of platforms.

Madagascar in term of e-commerce has not enough the ability to use big platforms like amazon. It is an under developed country which technology is insufficient due to the lack of infrastructures, strong network and security issue. Therefore, in that case, the 6 majority of people do not have yet the possibility

to get high technology tools such as smart phones, laptop, and tablet because the cost of internet is no cheap at all so that is the first reason why Madagascar have no possible ways to do such online sales such as these kind of platforms above.

For Malagasy people Facebook is not only a way for communicating but also to make any forms of transaction within the aids of mobile banking that exist in the country. Most of people prefer purchasing product on it since it does not require much times with an affordable price. Attributable to the lack of technology, many people have met a big issue in doing transaction payment since most of people do not own bank account yet. In a low-banking country like the case of Madagascar, mobile money is the best option to dematerialize the sending and receiving of money between individuals, but also for professionals.

There are three operators which provide mobile money in Madagascar which are: TELMA with MVOLA, ORANGE with Orange Money, and AIRTEL with Airtel Money.

Telma Mobile Money namely MVOLA, an independent subsidiary of TELMA telecom group as the leading mobile payment solution in Madagascar, which is offering their mobile channel to provide financial services available at a time where the world is dealing more and more in cashless, long-distance transactions. MVOLA is the first FinTech in Madagascar, launched in 2010; MVOLA's mission is to provide access to affordable and quality financial services to every Malagasy people. MVOLA also develops services innovative savings, advances and insurance solutions.

Mobile banking in Madagascar have some securities and trust issues toward the users. Hence, questions are arisen to clarify and analyze to these problems. First, the perception of security problems affecting the users will be discussed and analyzed in order to better understand and improve the

experiences of the users in the future. Second, the trust issues despite of the security problem stated earlier, does it affect the intention of the customer to purchase goods online while using Mobile banking Third, the combination of these two perceptions will be explained, so the result can be used to innovate and to make a new improvement between the payment's method and the users (customers).

II. THEORETICAL BASIS

A. Buying decision

The buying decision process ranks high among the most studied aspects of consumer behavior; however, recent findings in the study of decision making under conditions of uncertainty (e.g., risky choice) represent potential opportunities for increasing our knowledge of this important and complex facet of consumer behavior.

A particular interest is the fact that several recent reviews in behavioral decision theory have concluded that individual choice varies with the nature of the decision environment [1] It is vital to know the consumer buying decision process. The consumer buying decision process are the decision-making processes begin by the consumer to buy the goods or services in exchange of money in the market before, during and after the purchase of goods or services.

It helps the seller/marketer for selling its goods or services in the market. If the marketer successful to understand the consumer behavior according to the consumer buying decision process towards the goods or services, then it may successful for selling its goods or services.

B. Perceived Security

Creswell defines perceived security as the degree to which the mobile payment user believes that transaction on mobile payment platforms is secure in both financial and personal information aspects.[2]

From a consumer's perspective perceived security of an electronic commerce transaction may be defined as "the subjective probability with which consumers believe that their personal information (private and monetary) will not be viewed, stored, and manipulated during transit and storage by inappropriate parties in a manner consistent with their confident expectations." Just as consumers may have various beliefs regarding the privacy of their online transactions even if vendors provide assurance regarding all aspects of an individual's concern for privacy, consumers may also possess different beliefs regarding the

security of their online transaction even if all security enforcements are in place.

C. Perceived Trust

Trust is defined as a willingness to rely on an exchange partner in whom one has confidence." [3] Perceived trust is a key component in technology adoption and helps merchants to build strong customer relationship. Perceived trust is defined as an emotional state that encourages one to trust another, which is based on satisfactory behavior of the other. Various researches conducted in the field of technology adoption highlighted the importance of trust as an instrument to enhance customer relationship, and increase credibility and perceived security of the system. Merchants must understand various technological innovations, which might consider favorable or unfavorable, but enhance or diminish trust on the system and ultimately influence intention to use a technology.

III. RESEARCH METHOD

A. Research type

In this research design, researcher will use quantitative associative method. Quantitative research is an approach for testing objective theories by examining the relationship among the variables. The variable, in turn, can be measured, typically on instrument, so that numbered data can be analyzed using statistical procedures. [4]

The purpose of this research is to examine the perception of security and trust in the use of mobile banking services on online market that may affect the buying decision, to determine the relation between security and trust of consumers in online shopping. Lastly, to examine if both security and trust perception affect the purchase decision-making.

B. Variables

1. Independent variable

The independent variable is the cause. Its value is independent of other variables. [5] In the research study, the dependent variable is perceived security and perceived trust.

2. Dependent variable

The dependent variable is the effect. Its value depends on changes in the independent variable.[5] This research, the dependent variable is buying decision

C. Data collection

Researcher will be using quantitative research method in order to collect the data, which include interview, point of view of the customers. Primary

data will be used within this research process for researcher can be able to gather a raw information of specific purposes of the study. This provides a direct access to the subject of the research. Researcher will then go deeply analyze the data by examining the problem of MVOLA mobile banking users in Madagascar.

Researcher will conduct this work by applying Likert scale. It is a question that uses five or seven point scales; it is sometimes referred to as a satisfaction scale that ranges from one extreme attitude to another. Normally, Likert survey occurs a moderate or neutral option in its scale. Therefore, in this study, the questionnaires are going to be distributed through online using google form.

D. Population and sampling

A population is the entire group that researcher wants to draw conclusions about.[6] A sample is the specific group that writer will collect data from.[6] The size of the sample is always less than the total size of the population. In research, the population will be the people of Madagascar who use mobile-banking banking and online shopping.

This research, the sample will be “MVOLA” an SMS banking user in Madagascar. The number of samples is expected to be around 100 respondents in order to gather reliable information on the entire users. Non-probability sampling is a sampling technique in which the researcher selects samples based on the specific criteria.

Here researcher uses age because using MVOLA mobile banking must be over 18 years, it means it is made for those who have complete data in order to secure their personal account in case of harm or fraud. In addition, gender is mentioned for research will explore where is dominating between both male and female. Lastly, profession for knowing how much is the financial ability of the population using MVOLA in Madagascar.

E. Data analysis

It is defined as the way to sort and modeling data to discover useful information for business decision-making [7]. It helps company or an organization to predict the effects of the independent variable on the other dependent variable. Linear regression will be applied in this research type.

F. Correlation.

A correlation shows the direction of the association between 2 or more variables.[8] A positive correlation means that both variables change in the same direction. A negative correlation means that the variables change in opposite directions

1. Positive correlation

It is a relationship between a couple of variables that tend to move in the same way. A positive correlation appears when one variable tends to decrease as the other variable decreases in other word, one variable tends to increase when the other variable increase, as an example of positive correlation, the more company invest, the more profit increase. [8]

2. Negative correlation

Is a relationship between two variables within the opposite direction.[9] When a variable increases, the other decreases. Example, the stock price of a particular company in the energy industry can be compared to an energy index that tracks a broad set of companies that are all energy related.

3. A zero correlation

It is a relationship between two variables, which does not mean one even exists, like the more water you drink the more your phone chargers faster.

4. Regression analysis

Regression analysis identifies the variables that have an impact on another variable.[10] In this research, Researcher will use sample linear Regression.

5. Multiple linear regression.

Multiple linear regression (MLR), also known simply as multiple regression, is a statistical technique that uses several explanatory variables to predict the outcome of a response variable.[11]

The multiple linear regression equation is as follows:

$$\hat{Y} = b_0 + b_1X_1 + b_2X_2 + \dots + b_pX_p$$

Information:

Y=Buying-decision

X1=Independent variable (Perceived security)

X2=Independent variable (Perceived trust)

6. Hypothesis test.

Hypothesis testing is a form of statistical inference that uses data from a sample to draw conclusions about a population parameter or a population probability distribution.[12] First, A tentative assumption is made about the parameter or distribution. Within this hypothesis, researcher can determine the effect of perceived security and trust on the customer's intention to buy goods on online marketplace using mobile banking in Madagascar. Hypothesis test use testing t and testing f.

H1. . Perception security has a positive impact on buying decision using banking online

H2. Trust perception has a positive impact on buying decision using banking online

H3. Perception security and trust perception has a positive impact on buying decision using banking online.

IV. RESULT AND DISCUSSION

The following measurement of the independent variable and dependent variable that will be measure in the table below:

A. Questioner outlet format

Questioner is a set of questions given to the respondents to answer so as the researcher gets or picks their minds on them.[13] For this paper, the researcher will use these kinds of questioners.

B. Online Questionnaire

An online questionnaire is a set of standardized questions that are put together and distributed via online channels. It gathers data from respondents through a set of questions that are administered via online data-collection platforms like Form-plus. [14]

C. Multiple choice questions

Multiple-choice questions are the most popular survey question type. They allow your respondents to select one or more options from a list of answers that you define. [15]

They are intuitive, easy to use in different ways, help produce easy-to-analyze data, and provide mutually exclusive choices. Because the answer options are fixed, your respondents have an easier survey-taking experience.

1. Perception of security using banking online.

What perceived security affect the buying decision through online market place toward mobile banking?

Is there any special requirement for buyers and sellers in order to make deal on online sales?

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2. Trust Perception using mobile banking

What perceived trust affect the buying decision through online shopping?

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Is there any special requirement for buyers and sellers in order to make deal on online sales?

3. Buying decision

Table 1. Questionnaire about perception of security, trust perception and buying decision using mobile banking

No	Questions	Yes	No	perhaps
1	Are you willing to purchase goods online?			
2	Have you ever made online whopping?			
3	How often do you shop online			

Discussion

The result of the survey were collected and gave this result below With the blue area, it represent the percentage of mobile banking or mobile money users from the entire population with 87.41%. Moreover, the rest on the green area shows that 12, 59% of people who are not using it In this research, the study will be focus more details in using MVOLA mobile banking since researcher found out that this is the most used in the island especially when doing online transaction (GSMA Announces Launch of National Interoperable Mobile Money Service Across Madagascar,2016) . These three big operators offering mobile money, TELMA with MVOLA, Orange money and Airtel money.

Based on some researches, a result of survey were conducted in latest 2020 – 2022, show that MVOLA is leading at the top, which represents 68% of users. While Airtel money is at the second place with 35%, of users use it. Finally, Orange money at the range of 18% that is noted that in 2016, if MVOLA was always the first, Orange Money in the other side ahead of Airtel Money. Based on the data about MVOLA, asthe most popular in the country, researcher focused in finding the reason why customers chose it as their first option and tried to identify it with the aid of using pre-survey.

V. CONCLUSION

Based on the research result, we shall analyze if the perceived security and trust has significant effect on the customers buying decision while using mobile banking thru online market place. It is proven that E-payment (mobile banking) is the easiest way to avoid the waste of time, and decreases the routines of people who are always busy on their work, as it does

not require any movement. It is a possibility to manage funds, transfer money, and detect frauds quickly. In addition, with the help of digital banking users have 24/7 access to their accounts (including the possibility to check balance) and reminders about bills payments, loans, and so on. As it grows so fast during the past five years, a big risk occurs as many claims to be from the operator service. Any app, tools or data that can be used to access on users account is a target for scammers.

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