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Validating Mobile Money Services Adoption Model for Trade Transactions in Uganda

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Abstract:
Mobile money transfer services have shown positive contribution on the economic and social development across the globe to individual people, businesses and to the government as well. Unfortunately, despite the numerous benefits of using mobile money services for transactions, the facility is apparently not widely adopted among traders in Kampala specifically and Uganda in general. This paper presents the results of a study that examined the validity of mobile money service (MMS) adoption model for traders in Uganda as an attempt to bridge this gap in developing country. In this study, self-administered questionnaires were distributed to a sample of 200 respondents. Besides, thirty (30) traders were interviewed. Descriptive statistics was used to analyse and present the validation results of the study. The quantitative results were complemented with qualitative results from the interview. The model validation results revealed that performance expectancy, effort expectancy, social influences, facilitating conditions, security and sensitization influence both trader's behavioural intention and use behaviour or adoption of mobile money services for trade transactions. The study concluded that the mobile money services adoption model for trade transaction is valid, hence traders can use it guide them. Furthermore, the study suggests that mobile money service provides should consider tailoring different pocket friendly mobile money services to different segments of traders. In other words, mobile money service providers should improve their marketing strategies and develop new approaches of mobile money services delivery.

Keywords: Validity, Mobile money Services, determinants, UTAUT model, Developing country

1. Introduction

The concept of mobile money dates back to the time when Smart Money was launched by Smart Communication in May 2003 and subsequently G-Cash was launched by Globe Telecom launched in October 2004 in the Philippines. While they do not have many documented user studies, the two offerings have been an invaluable learning ground for other mobile money implementations around the world. This shows that there is a contrast between different models of collaboration that can exist between the two critical sectors of banking and telecommunications(Mendes et al., 2007;Wishart, 2006).

The emergence of mobile money services transformed human's lives with increased convenience, enhancement of the standard of living for the unbanked population and stimulation of economic development(Lonergan et al., 2009). This digital revolution encouraged participants across many industries to advance their venture towards to entering the mobile payment marketplace. Despite the fact that the benefit of mobile money extends beyond the individual and household levels to businesses and organizations(Munyegera & Matsumoto, 2014), there is no definite study on the effective use of mobile money services by traders in Uganda.

Mobile Money Service (MMS) is defined as a service in which the mobile phone is used to access financial services(Baptista & Heitmann, 2010). Mobile money also represents payment and banking services operated under financial regulation and performed through a mobile device(Ho-Young, 2012). It was asserted in the World Bank report (World Bank, 2012) report, that mobile money services is a mobile payment, mobile money transfer, or mobile wallet, commonly referred to as an intersection of both banking and telecommunications services that is operated and performed from a mobile device such as mobile phone, credit or debit card. Tobbin(2011)also said that mobile money transfer services include all the various initiatives such as long-distance remittance, micro-payments, and informal air-time battering schemes that is aimed at bringing financial services to the unbanked using mobile technology. Mobile Money services refers to the use of mobile phones (mobile phone money services) to conduct financial

transactions such as sending and receiving money, paying for goods or services, purchasing airtime, remittances, accessing bank accounts to make deposits or withdrawals, viewing financial statements for bank accounts and/or mobile money and any other closely related service. It is therefore related to a combination of mobile telephones and financial services as adopted by World Bank (World Bank, 2012) to conduct financial transactions as outlined above.

Globally, the success of Mobile Money Services (MMS) led many Mobile Network Operators (MNOs) around the world to venture into offering similar products. In Haiti for example, with a maximum monthly transaction limit of US$1500, the e-wallet is not sufficient to meet all of a trader's financial service needs, whose monthly restocking is worth US$2000. The limit of upper e-wallet is a major challenge and a potential limiting factor for future growth of mobile money in Haiti(Taylor et al., 2011) as well as in Uganda.

In Africa, the declining revenues in the mobile telephone voice business as well as the proliferation of mobile phone handsets, mobile network operators(MNOs) were enticed to undertake the provision of mobile money services(Lachaal & Zhang, 2012). Despite the initiatives to implement this strategy, unfortunately there was low adoption of the service by African adults (70%)(Obgonna, 2013;Chogi, 2010) Uganda inclusive. This is attributed to lack of trust, sensitization, training , exposure, and fear of unreliable internet connectivity services(Uduma, 2011;Obgonna, 2013;Murthy, 2012;Githui, 2011;Davidson& McCarty, 2010).

Furthermore, although mobile financial services have brought mobile phone operators and banks together to take advantage of in Africa, nonetheless, in almost all sub-Saharan African countries, a huge and vibrant informal cash economy and transactions still exists(Taylor et al., 2011).

Much as the proliferation of mobile phones in developing countries presented a substantial opportunity to integrate more users with financial systems at reasonable cost, most potential users including traders Uganda and other African countries, were confused, did not understand how the service worked and feared losing money in the transaction as well as lacked comfort with the phones(Githui, 2011;Moshy & Mukwaya, 2011;Hinman & Matovu, 2010;Ndiwalana et al., 2009;Ndiwalana et al., 2010). Furthermore, although, KCCA launched a partnership with MTN to enable traders pay taxes to city authority using the mobile money services, nevertheless, the service has been condemned for its flaws in terms of inconvenienced urgent transactions, poor network all the time and suffered fraud related cases that have been rampant(Namagembe, 2015). Other issues raised by users including traders were fraud, unreliable network , network failures, inconsistent service quality, inefficient systems delivery, glitches, insufficient number of agents, low float, low cash and liquidity(Mwesigwa, 2013;Murthy, 2012;Kalungi, 2012). In addition, other primary concerns were security and safety of mobile payment transactions, transaction incompleteness, private information disclosure, privacy, use of pin and secrete code, confidentiality, authentication, data integrity, non-repudiation, anonymity, as well as policies on customer's personal information(Mbogo, 2010;Mallat et al., 2008;Swatman et al., 20020).

2. Literature Review

2.1. Mobile Money Services Adoption in Uganda

Despite the fact that MTN Uganda launched Mobile Money since March 2009, and the rapid customer adoption of mobile money, however, the number of customers who were transacting was significantly lower(Davidson & McCarty, 2010). Despite the explosive growth of mobile money service deployment, the challenges of its adoption in Uganda were lack of understanding and sensitization on the procedures of performing transactions among users. In addition, population ignorance and illiteracy, lack of trust, training and exposure were among the problems inhibiting the adoption of MMS by users in general as well as traders(Obgonna, 2013;Murthy, 2012;Githui, 2011;Davidson & McCarty, 2010). Furthermore, fear of unreliable internet connectivity services, poor and inconsistency in quality of services, insufficient number of agents are also among the issues challenging the potential adopters MMS(Murthy, 2012). Fraud, untrained and uncoordinated agents, lack of regulatory framework, float, cash, and liquidity during peak hours of business are some of the inhibitors of MMS adoption including fraud(Joseph, 2013;Kyeyune et al., 2012;Murthy, 2012). Other challenges of MMS adoption are fear of losing money in transactions, anxiety and lack of comfort with phone, lack of security, and safety(Kalungi, 2012;Mbogo, 2010;Hinman & Matovu, 2010).

Lonergan et al., (2009) on the other hand said that most businesses today are looking to solve two key challenges, which is improving business performance and reducing costs of transactions. This dual objective can deliver significant benefits and position your organization to emerge from the downturn with a stronger and more competitive profile. Furthermore, transaction volume is another challenge for most traders, as there is a limited amount to be transacted on daily basis. If the above-mentioned issues are not taken care of by the mobile money service providers, hence, they may constitute challenges that may inhibit the adoption of MMS by traders.

2.2. Benefits of Mobile Money Services

The benefit of mobile money services are the activities from which the user gains as a result of using mobile money services. Nyaga(2013) mentioned that the benefits of mobile money service other than sending and receiving cash includes reliable saving option of money for many low income earners, reduction in loss of sales, good audit trail, and quicker transaction than cash at the point of sales. Kyeyune et al., (2012) asserts that the system is perceived to be more secure since the money is not held on a user's simcard but rather on a central server, which protects it from loss and theft, hence a safer, accessible and more reliable saving option. They further asserted that while in Kenya the mobile money services has been used to pay for air ticket and transfer of money in and out their bank accounts, in Uganda, new applications like school fees and bill payment functions have improved domestic productivity by saving working people the time normally spent in queues to pay school fees, airtime and utility bills. In addition, mobile money services enables traders to pay for goods and services, payment for bills, transports and receive payments from customers and other

business partners(Subex Limited, 2011). A study conducted by the Consultative Group to Assist the Poor(CGAP, 2013) revealed that, at low transaction values, using e-wallets and mobile money transfers is on average 38 percent cheaper than going through formal financial channels.

3. Theoretical Perspective of the Study

Mobile payment procedures are essentially information technology (IT) procedures and channels through which users (traders) make various payment transactions. Since, mobile money services procedures are basically, information technology (IT), hence, the Unified Theory of Acceptance and Use of Technology (UTAUT) proposed by Venkatesh et al. in the year 2003(Venkatesh et al., 2003) was adapted as a primary theoretical framework to examine the proposed study. The UTAUT theory holds that four key constructs 1-performance expectancy; 2-effort expectancy; 3-social influence, and 4-facilitating conditions are direct determinants of usage intention and behaviour. Gender, age, experience, and voluntariness of use are posited and hypothesized to mediate the impact of the four key constructs. (Venkatesh et al., 2003).

Since the UTAUT theory aims to explain user intentions to use an Information Systems (IS) and subsequent usage behaviour, and mobile money services procedures are basically information technology procedure, hence, it can fit into the study of mobile money service adoption. Furthermore, Tobbin(2011) argued that since the determinants of adoption in m-banking and m-payment environment are almost similar, and UTAUT was used in the study of M-banking and M-payment, hence, it should be applicable to mobile money services adoption study as well.

Critical literature review and comparison of several theories in relation to factors used in this study against the factors in other scholars' works similar to this study created a gap for research. The relevant constructs identified from the literature review were sensitization, security, and moderating variables such as volume of sales, level of exposure, legal issues, and nature of trade. Furthermore, the common theories used in related studies were Technology Acceptance Model (TAM), Diffusion of Innovation (DOI) theory and Unified Theory of Acceptance and Use Theory (UTAUT). TAM model was used thrice, DOI twice and UTAUT thrice, as well as thrice in non-Mobile money service related studies. In other words, some of the above models/theories were used in mobile devices (non-mobile money services) studies. Hence, they can also help in the guiding the research. On the other hand, some studies only considered constructs without referring to particular theories/models.

4. Research Model

The research framework in figure 1 illustrates the position of the identified determinants of mobile money services adoption model namely performance expectancy, effort expectancy, social influences, facilitating conditions, sensitization, and security. The moderating variables depicted in the research framework are gender, age, volume of sales, level of exposure, nature of trade, and legal issues.

Performance expectancy as the degree to which an individual believes that using the system will help him or her to attain gains in job performance(Venkatesh et al., 2003). In other words, it is the extent to which traders believe that using mobile money services will assist them gain benefits from job performance such as trade transactions. Effort expectancy, is as the extent to which individuals believe that learning to use a certain information system will not require significant effort(Venkatesh et al., 2003). In the context of mobile money services, the construct is conceptualized as the extent to which the mobile money services users believe that learning to use of mobile money services will not require significant effort. Social influence is the degree to which an individual perceives that important others believe he or she should use the new system(Venkatesh et al., 2003). In other words, Social Influence involves the social pressure applied on the traders by the opinion of other individuals or groups on the use of mobile money services for trade transactions. These individuals or groups are business rivals, partners (suppliers, consultants, bankers), and associates. Tan & Teo, (2000) defined facilitating conditions as being the extent of technology availability and other external support in the environment. In the context of this study, in other words, facilitating conditions is the extent to which a trader believes that an organizational and technical infrastructure exists to support use of the system. Omwansa(2012) defines security as being the extent to which the prospective user is concerned about the authentication, confidentiality, Non-Repudiation and data integrity relevant to mobile payment. In other words, mobile money services security (SE) is the extent to which the prospective trader is concerned about the authentication, confidentiality, non-repudiation and data integrity relevant to mobile payments or transactions. Sensitization is to make someone more aware of something(Merriam-Webster, 2014). In other words, it is the process of making customer (trader) to be aware, understand or have knowledge about the existence of the mobile money services and what it does, how useful it is to them and understands the steps necessary to transact with it. According to Venkatesh(2003) behavioural intention is the extent to which a person has formulated conscious plans to perform or not perform some specified future behaviour. Omwansa(2012) also defines behavioural intention as being a mental plan to perform a behaviour or action, created through a choice/decision process that focuses on beliefs about the consequences of the action. In the context of this study, Behavioural intention (BI) is the extent to which a trader has formulated conscious and mental plans to perform or not perform some specified future behaviour.

Regarding moderating variables, legal implication is any incriminating involvements or inferences(Garner et al., 2004). In the context of this study legal implications are the consequences of being involved in something or mobile money transactions for trade transactions as determined by the law. Nature of trade looks at buying and selling of goods and services as practiced by traders while using money or money services for transactions. It involves transfer or exchange of goods and services for money or money's worth. Nature of trade could be the form of retailing, wholesaling, market vending or both retailing and wholesaling. Volume of sales is the amount or total of sales of products or services in a given period(Garner et al., 2004). In other words, it is the volume of goods sold in number or quantity of units during the normal operating times of a company while using mobile money services in the transaction

process. According to Thorndike and Barnhart, (1974), exposure refers to the degree to which the user is subjected or allowed to an action of knowing how to use, or experience a technology or service. In the context of this study, it refers to the degree to which the trader is subjected or allowed to an action of knowing how to use, or experience mobile money services for trade transactions. The literature review gap leads to the formulation of following hypotheses depicted in the research model in figure 1.

➢ H1:PE has a significant influence on BI to adopt mobile money services.
➢ H2:EE has a significant influence on BI to adopt mobile money services.
➢ H3:SI has a significant influence on BI to adopt mobile money services.
➢ H4:SE has a significant influence on BI to adopt mobile money services.
➢ H5:SZ has a significant influence on BI to adopt mobile money services.
➢ H6:FC has a significant influence on UB
➢ H7: BI has a significant influence on use behaviour (UB) of mobile money services.
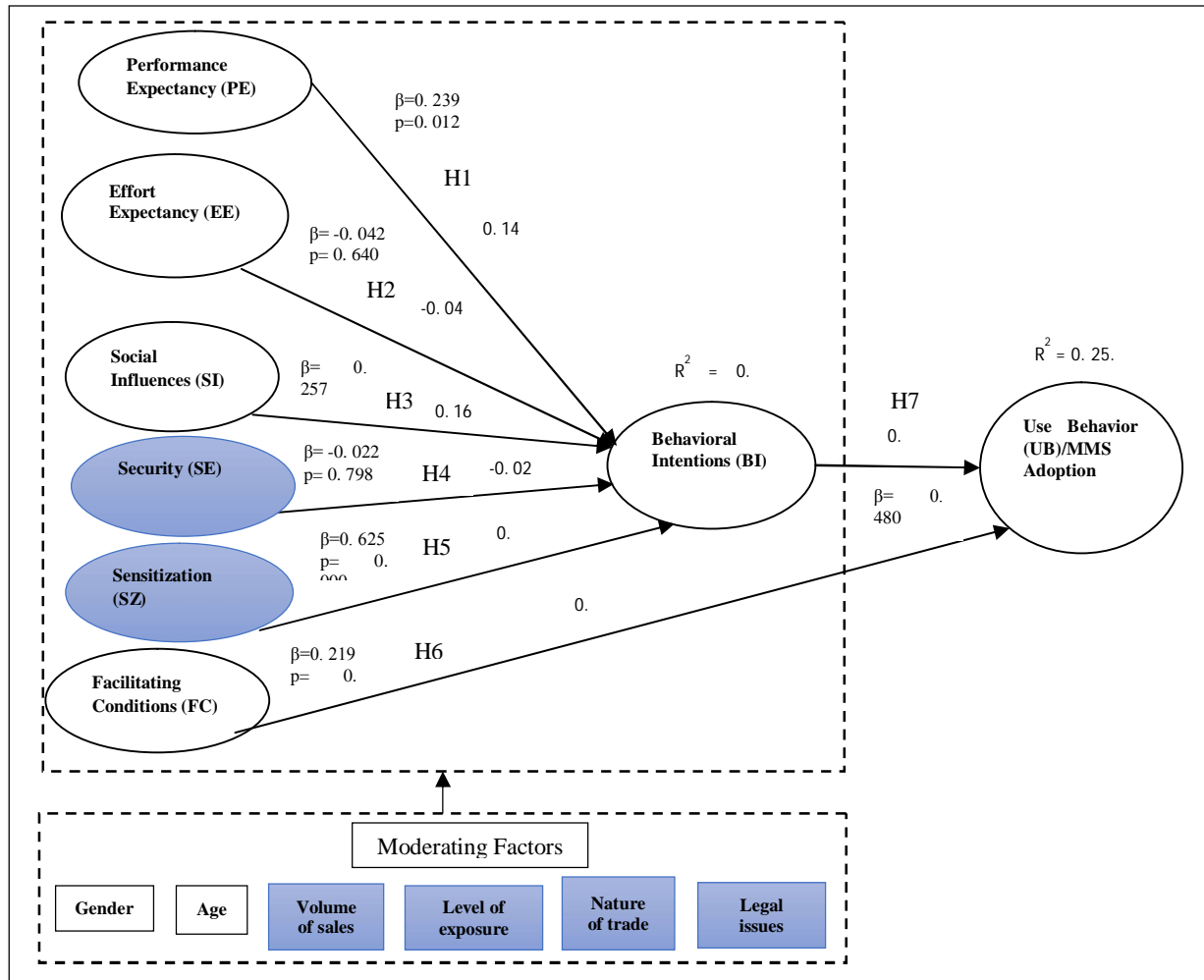

Figure 1: Mobile money service adoption model for trade transactions.

Based on the research model in figure 1, the independent variable constructs significantly influenced the behavioural intention and use behaviour (the dependent variables) with a significant level of 0. 05. The figure also shows the values of coefficients and the direction of the relationship with the dependent variable including their respective p-values (significance values).

The model in figure 1 also depicts that performance expectancy, effort expectancy, social influences, security, and sensitization can predict thirty seven percent (37%) of the increment or decrement in the levels of the behavioural intentions (BI) to use mobile money services for trade transactions. In other words, thirty seven percent of traders intend to use mobile money services for trade transactions in future. This means that thirty seven percent (37%) of the variation in the behavioural intentions (BI) to use mobile money services for trade transaction can be explained by the variations in the performance expectancy, effort expectancy, social influences, security, and sensitization. On the other hand, facilitating conditions and behaviour intentions predict twenty four percent (24. 2%) of the mobile money services (MMS) adoption by traders. In other words, twenty four percent of traders are currently using mobile money services for trade transactions. This result indicates that twenty four percent (24. 2%) of variation in the use of mobile money services for trade transactions can be explained by the variations in facilitating conditions and behavioural intentions. In general, the result indicates that sixty four percent (64. 1%) of variation in the use of mobile money services for trade transactions can

be explained by the variations in all the constructs (performance expectancy, effort expectancy, social influences, security, sensitization, facilitating conditions and behavioural intentions).

Regarding moderating variables, figure 1 depicts that there is a significant positive interaction between nature of trade and performance expectancy, and security as predictors of behavioural intentions to adopt mobile money services by traders. In addition, there is also a significant negative interaction between level of exposure and facilitating conditions as predictors of use behaviour. On the other hand, the findings of study revealed that interactions between age, gender, volume of sales, legal issues and other direct constructs were insignificant,

5. Validation of Model

While Hornby(1996) defines validation as being a process used to establish, confirm, prove, certify, substantiate, and authenticate the value, effectiveness, worthiness and soundness of the model, Thacker et al., (2004) on the other hand define validation as being the process of determining the degree to which a model is an accurate representation of the real world from the perspective of the intended uses of the model. In other words, validation is a process that accumulates evidence of a model's correctness or accuracy for a specific scenario, thus, it cannot prove that a model is correct and accurate for all possible scenarios, but, rather, it can provide evidence that the model is sufficiently accurate for its intended use. In the context of computer model, Paez (2009) further asserts that model validation is the process of determining the degree to which a computer model is an accurate picture of the real world from the perspective of the intended model applications. Engineers seeking to develop credible predictive models critically need model validation guidelines and procedures. The goal of validation is to quantify confidence in the predictive capability of the model by comparison with experimental data (Thacker et al., 2004). From a practical perspective, validation of model is a process of using a model in a live environment in order to find errors. Validity has two areas of application. First it is the degree to which a test measures what it was intended to measure while the second involves research design where the term refers to the degree to which a specific research work supports the intended conclusions that are drawn from the results (Omwansa, 2012).

In model validation, the important question is whether results of any regression analysis on the sample can be extended to the population the sample has been chosen from. Practically, a model can be validated by deriving a model and estimating its coefficients in one data set, and then using this model to predict the outcome variable from the second data set, then checks the residuals, and so on. The estimates of validated model are most likely to be over-estimated if it is validated using the data from which the model was developed. Hence, it is suggested that the validity of this type of model should be assessed by conducting tests of goodness of fit and discrimination on a different data set (Giancristofaro & Salmaso, 2003).

There are several types of model validation samples. Internal validation is a validation in which a sub sample of observations is used to develop a model and validated with the remaining sample. In other words, the researcher needs to designate two types of data sets, one for estimating the model (estimate data set), and the other for validating the model (validation data set). While the researcher can designate the same data set to be used for assessing and validating the model, the researcher risk over-fitting the data set(Harrell & Frank, 1997). According to Harrell and Frank(1997), data-splitting is the most widely used methods for obtaining a good internal validation, repeated data-splitting, jack-knife technique and bootstrapping.

External validation is a validation in which the validity is tested with a new independent data set from the same population or from a similar population(Harrell & Frank, 1997). A new data set allows the researcher to check the model in a different context. If the first model fits the second data set, there is some assurance of generalizability of the model. On the other hand, if the model does not fit the second data, the lack of fit can be either due to the different contexts of the two data sets, or true lack of fit of the first model.

Cross-validation uses an independent data set for validation. In this case validation data should be the same in frequency content as the estimation data. If the researcher detrend the estimation data, the same trend must be removed from the validation data (Harrell & Frank, 1997). In this study, external validation was used, where by a new data set was collected from the same similar population six months after the initial data was collected. In other words, the first data set was collected in the month of Dec 2014, while the second data set was collected in the month June 2015.

6. Methodology

6.1. Population and Sample

The population of this study consisted of traders from Kampala central business district of 2014/2015 estimated at 6243 traders. To a develop the research model a sample of 413 respondents was selected from the sampling frame consisting different categories of trades. The categories of traders were selected based on the merchandises they trade in. Stratified random sampling procedure to inclusion and exclusion criteria was used. Proportionate stratified sampling procedure was used to sample each stratum. Sampling fraction was used to calculate the sample size of each stratum or category of business(Amin, 2005;Sekaran, 2003).

To validate the model, a sample of 200 expert traders were asked to respond on the basis of the validation questionnaire. Besides, thirty (30) traders were interviewed. A total of 200 respondents were selected which is in line with Roscoe's rule(Roscoe, 1975) which states that a sample size between 30 and 500 is sufficient enough to provide credible results for validation.

6.2. Measures

This study used opinion measures to capture data on direct determinants, behavioural intention and use behaviour (adoption of MMS for trade) of the proposed research model. A five-point Likert-scale was used to represent the responses of the respondents.

Grounded on Venkatesh et al., (2003) recommendations, this study adapted measurement items from related studies of UTAUT model. In measuring mobile money service adoption for trade dimensions such as user behaviour this study profoundly adapted constructs from UTAUT model and related studies of mobile money adoption as well as from gaps identified from literature review(Omwansa, 2012;Sayid et al., 2012;Osei-Assibey, 2014;Nyaga, 2013;Tobbin, 2011; Orotin et al., 2013).

Venkatesh et al., (2003) and Omwansa(2012) items were used to operationalize the determinants , behavioural intentions and use behaviour of mobile money services adoption model for trade transactions. Since Venkatesh's instrument(Venkatesh et al., 2003) was valid and acceptable measure for the adoption model construct, hence, it was widely used by researchers.

Furthermore, the above items, demographic factors (gender, age, educational level, marital status), nature of trade, duration in business, volume of sales, types of merchandise traded, mobile money service provider, duration of mobile money service usage, and number of business owned by a trader.

As for the direct determinants, a single item measure was used for each factor. Using a five-point Likert-scale ranging from 1=strongly disagree to 5= strongly agree. On the other hand, interview guide questions were open ended questions, hence allowing respondents to freely express their opinions.

6.3. Data Collection Method

To validate the research model, a new independent quantitative and qualitative data set were collected from the same population using both questionnaire and interview guide. A self-administered questionnaire and interview guide was used to measure the factors under investigation. Before administration of questionnaire to actual respondents, a pre-test and pilot study were conducted to ensure consistency and clarity of the questions asked which resulted in the questionnaires being polished and rephrased accordingly. The result for the reliability of the questionnaire are displayed on table 1. The questionnaire was also translated to a predominantly used local language (Luganda) in the capital city to cater for the market vendors and respondents who were less familiar and proficient with English.

The respondents were requested to study the diagram of the research model and respond to the statements on the questionnaires as well as answer to the interview guide questions. A self-administered questionnaire was distributed to a sample of 200 respondents. Out of the 200 questionnaires, 150 were returned completed and considered usable, confirming a response rate of 75% which is considered effective enough.

To test the reliability of the data, collect instrument, a sample of questionnaires were pilot tested to presumed sample of respondents. The results on table 1 showed that the reliability tests' value of Cronbach's Alpha for all the constructs is higher than 0. 6 which is the acceptable level(Babbie, 1992). This means that the results of the questionnaire can be relied upon since all the constructs present an acceptable level of reliability.

Construct	Cronbach's Alpha Coefficient	No of Items
Performance Expectancy	0. 877	6
Effort Expectancy	0. 842	6
Social Influences	0. 710	3
Facilitating Conditions	0. 817	6
Security	0. 896	6
Sensitization	0. 875	5
Legal issues	0. 871	5
Level of exposure	0. 763	5
Behavioural Intentions	0. 651	5
Use Behaviour	0. 913	11

Table 1: Construct and Reliability Tests

7. Result of the Study

7.1. Model Validation

Validation of the model is process of determining the degree to which a model is an accurate representation of the real world from the perspective of the intended uses of the model. In other words, it is the process of testing whether the developed model is in line with drivers of mobile money services adoption for trade transactions and also whether the developed model is applicable to the area of the study or not. External validation approach explained in section 5 was used to test the validity of the model(Harrell & Frank, 1997). The following are the findings from the validation process.

7.2. Demographic Characteristics of the Population

Data on the demographic characteristics of the population was collected about levels of gender, age, level of education, marital status, duration in business, size of business, numbers of business owned by the trader, duration of mobile money services usage, languages preferred in the use of mobile money services, main location of business, nature of trade, and types of merchandise sold by the traders. The following section presents detailed descriptive statistics of the respondents, demographic factors together with the sampled traders.

7.3. Gender Distribution
Data was collected on gender distributions of the respondents (traders). The study collected data on both females and males. The results are summarized in the following Figure 2.
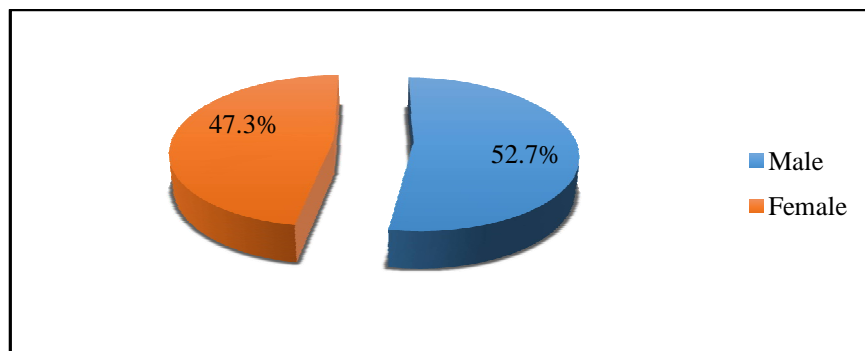

Figure 2: Gender of Respondents

The results in figure 2, on the gender of the respondents indicated that fifty three percent (52. 7%) of the respondents (traders) were male while forty seven percent (47. 3%) were female.

7.4. Age of Respondents
Data on age distribution of respondents (traders) was collected. The result is summarized on the following figure 3.
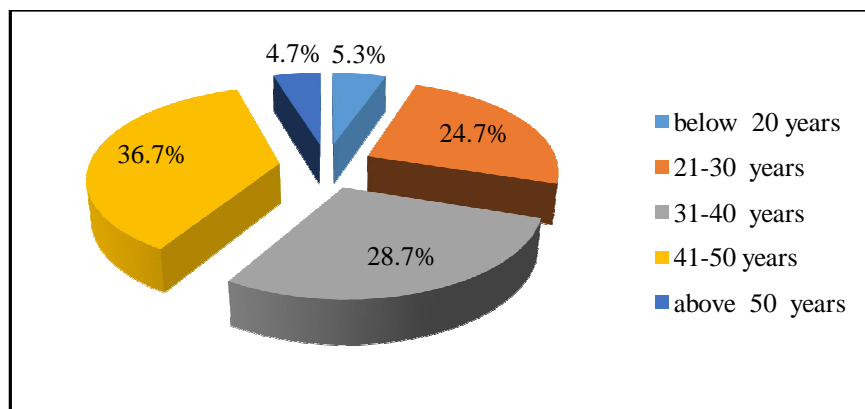
Figure 3: Age of Respondents

The results on figure 3 indicate that thirty seven percent (36. 7%) of the respondents were within the age bracket of 41-50 years; followed by twenty nine percent (28. 7%) are within the age bracket of 31-40 years, followed by five percent (5. 3%) who are within the age bracket of below 20 years and finally, five percent (4. 7%) are within the age bracket above 50 years. This suggests that majority of the respondents (traders) are within the age of 41-50 years and matured.

7.5. Marital Status of Respondents
Data was collected on the marital status of the respondents (traders). The results are summarized in the following figure 4.
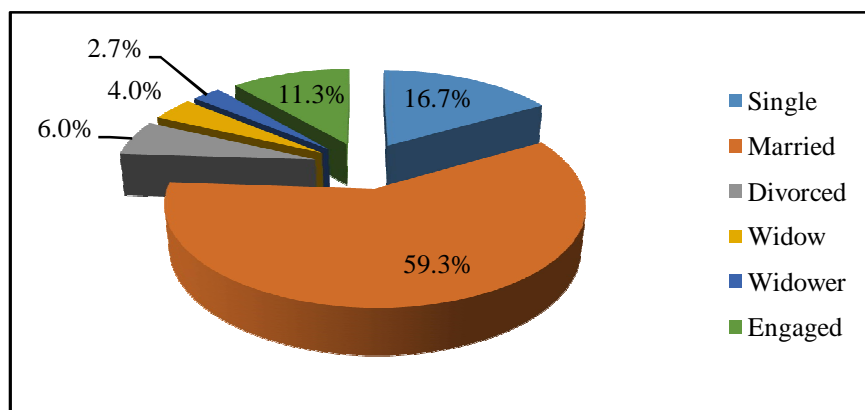

Figure 4: Marital Status of Respondents

The results on figure 4 revealed that more than half of the respondents (59. 3%) are married. Whereas seventeen percent (16. 7%) of the respondents (traders) were single, eleven percent (11. 3%) were engaged. On the other hand, while four percent (4%) of the respondents were widows, almost three percent (2. 7%) were widowers.

7.6. Educational Level of Respondents
Data was collected on the level of formal education attained by the respondents (traders). The levels of education considered were primary, secondary, tertiary, and others. The results are summarized in the following figure 5
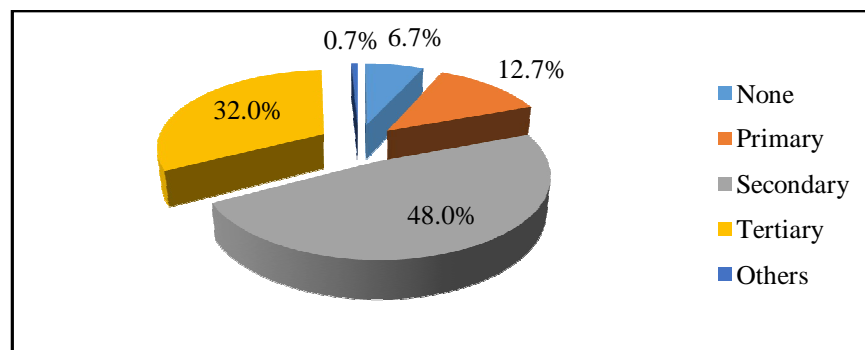
Figure 5: Educational Level of Respondents

The results figure 5 revealed that almost half (48%) went to secondary school, followed by tertiary thirty two percent (32%). While almost thirteen percent (12. 7%) attended primary schools, almost seven percent (6. 7%). Less than one percent (0. 7%) did not attend any formal education.

7.7. Duration of Respondents in Business
Data was collected on the number of years that the respondents (traders) were in business and results are summarized in the following figure 6.
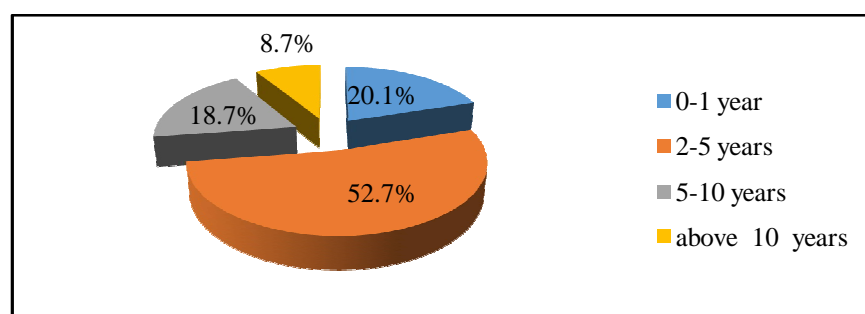

Figure 6: Duration of Respondents in Business

The results on figure 6 revealed that almost more than half (52. 7%) of the respondents (traders) have been in business for between two to five years. Followed by those who traded for between zero to one year (20%), and subsequently those who traded between five to ten years (18. 7%). The least category (8. 7%) of traders traded for more than 10 years. The latter result is obvious simply because most of the businesses in Uganda do not celebrate their fifth anniversary.

7.8. Size of Business in Terms of Sales Volume per Year
Data was collected on the size of business in terms of sales volumes of respondents (traders). The following figure 7 summarizes the results.
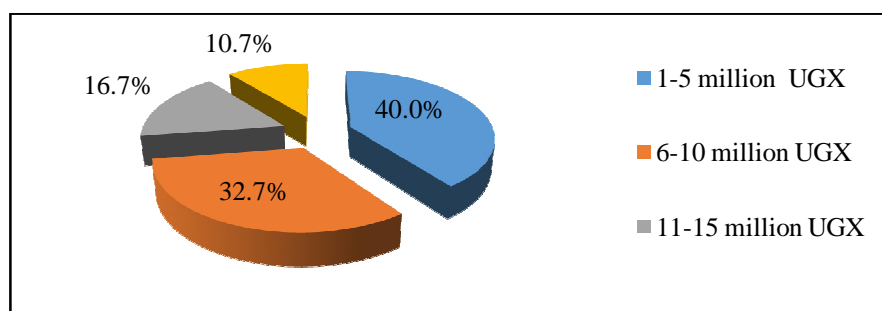

Figure 7: Size of Business in Terms of Sales Volume Per Year

The results on figure 7 revealed that forty percent (40%) have a sales volume of between one to five million Uganda shillings. Followed by six to ten million (32. 7%), then eleven to fifteen million (16. 7%), and finally, above fifteen million (10. 7%). This result implies that a few individuals operate trade on large capital, while majority of traders operate on small capitals.

7.9. Nature of Your Trade
Data was collected on the nature of trade practiced by the respondents (traders) and the results are summarized in the following figure 8.
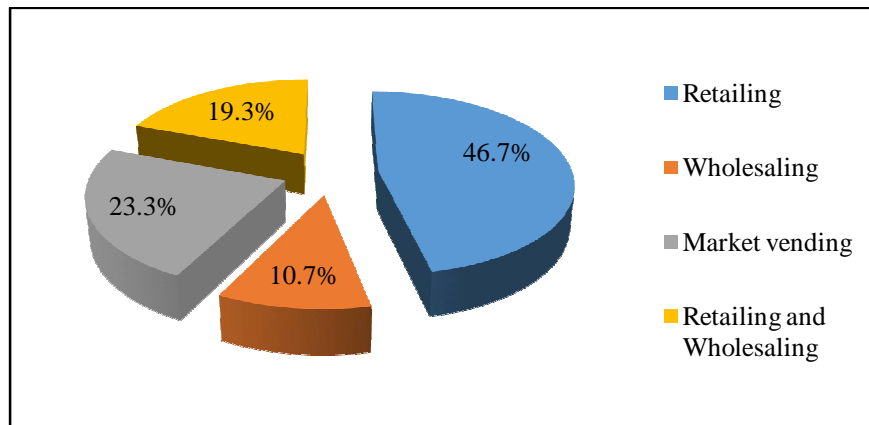

Figure 8: Nature of Your Trade

The results in figure 8 revealed that most (46. 7%) of the traders are in retail business. Followed by those in market vending (23. 3%), then those in both retailing and wholesaling (19. 3%) and finally wholesaling only (10. 7%).

7.10. The Descriptive Statistics of the Validation Questionnaire
Descriptive field study depicts the responses on the determinants of mobile money services adoption for trade transactions as analysed are presented in the following tables. The results presented in this section are from the analysis of the data collected through validation questionnaire that were administered to trade experts, including interview responses. Out of a total of two hundred (200) trade experts that were given questionnaires, one hundred and fifty (150) respondents returned correctly filled questionnaires. Data was collected, categorized, quantified, coded and entered into SPSS. The data was analysed, hence presented on the themes of performance expectancy(PE), effort expectancy(EE), social influences(SI), facilitating conditions(FC), security(SE), sensitization(SZ) and behavioural intention (BI.)

7.10.1. The Contribution of Performance Expectancy to the Model
The model was validated based on respondent's level of agreement that performance expectancy contributes to an individual's behavioural intention (BI) to use the mobile money services for trade transactions and the results are presented in the following figure 9.
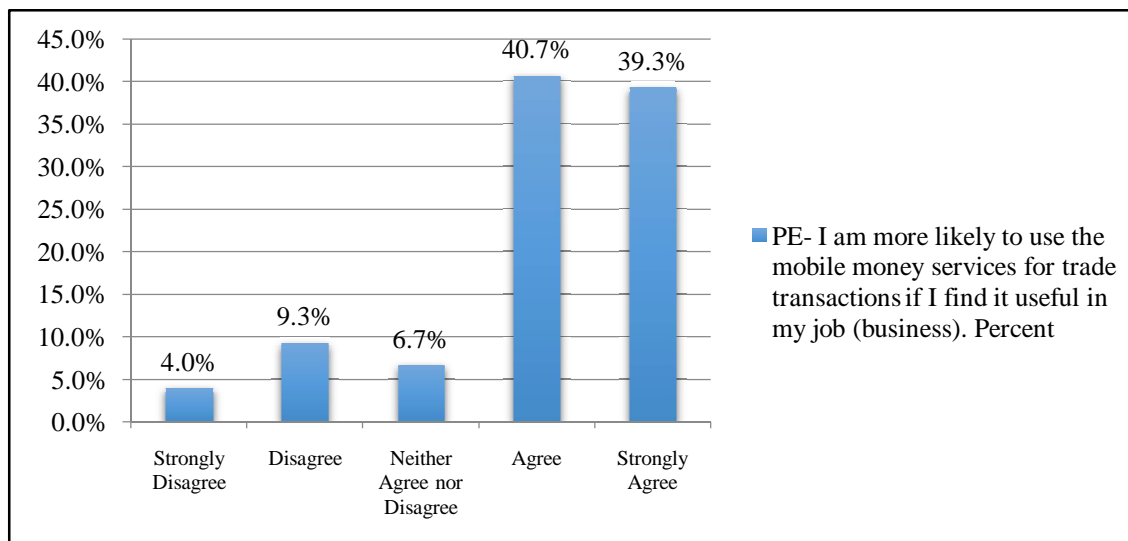

Figure 9: Performance Expectancy

The results in figure 9 revealed that respondents (traders) accepted that the mobile money services are useful in their business transactions with forty percent (40. 7%) of respondents agreeing, and (39. 3%) of respondents strongly agreeing that the mobile money services are useful in their business transactions. While nine percent (9. 3%) of respondents disagreed, four percent (4%) strongly disagreed that the mobile money services are useful for their business transactions. However, seven percent (6. 7%) of respondents were not sure whether the mobile money services are useful for their business transactions.

The results of the model validation on performance expectancy were in agreement with hypothesis one (H1), whereby performance expectancy has a significant influence on behaviour intention (BI) to adopt mobile money services for trade transactions in Uganda.

For the purpose of triangulation, selected traders were interviewed and the following statements were found to be true in relation to this construct: Interviewee1 stated that: "*mobile money services have helped me greatly in performing my work and business transactions*". Interviewee 8 stated that "*to a fair extent mobile money services mobile money help me in performing my work and business transactions*". Interviewee16 stated that "*not really, it does not help me in performing my work and business transactions, simply because I don't use mobile money services for any business transactions*". Interviewee 25 stated that "*not so influential in helping me to perform my work and business transactions*".

The above responses were from selected interviews, however, majority of the interviewees asserted that to greater extent the mobile money services help them in performing their trade transaction tasks.

7.10.2. The Contribution of Effort Expectancy to the Model

The model was validated based on respondent's level of agreement that effort expectancy contributes to an individual's behavioural intention (BI) to use the mobile money services for trade transactions and the results are presented in the following figure 10.
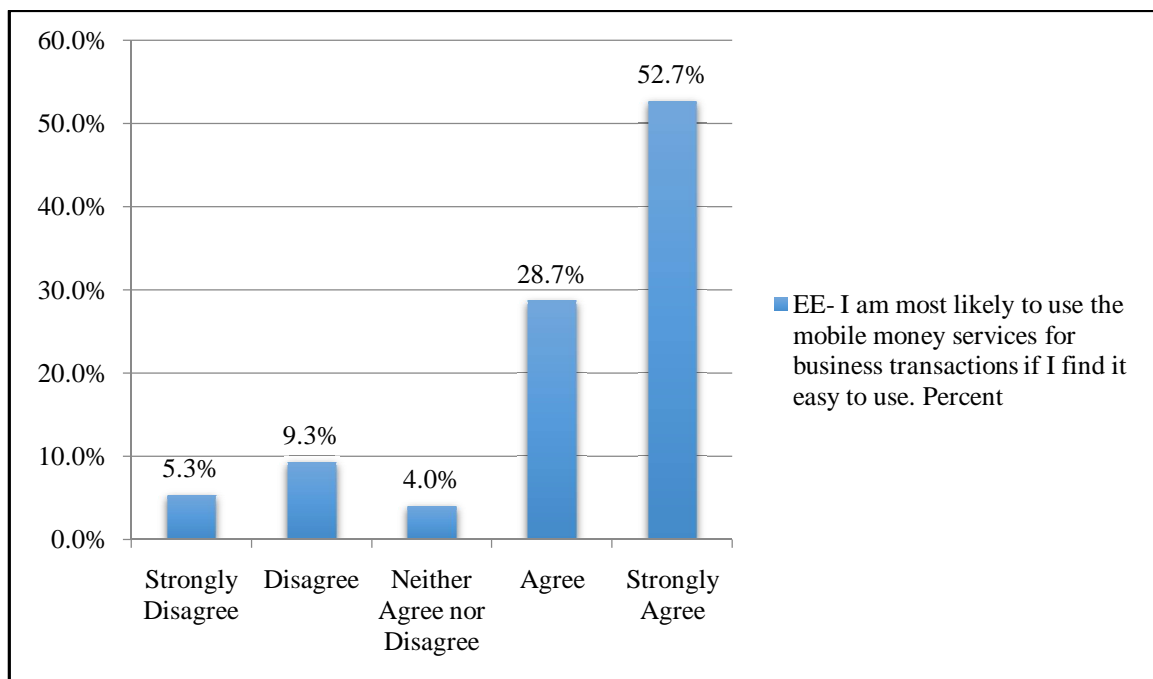

Figure 10: Effort Expectancy

The results in figure 10 revealed that respondents (traders) accepted that the mobile money services are easy to use for trade transactions with almost fifty three percent (52. 7%) of respondents(traders) strongly agreeing, and almost twenty nine percent (28. 7%) of respondents agreeing that the mobile money services are easy to use in business transactions. While nine percent (9. 3%) of respondents disagreed, five percent (5. 3%) strongly disagreed that mobile money services are easy to use in business transactions. However, four percent (4%) of respondents were not sure whether the mobile money services is easy to use for their business transactions.

The results of the model validation on effort expectancy were in agreement with hypothesis two (H2), whereby effort expectancy has a significant influence on behavioural intention (BI) to adopt mobile money services for trade transactions in Uganda.

The finding was further compared to what was obtained from the interviews: interviewee2 stated that "mobile *money service is easy to use because it saves times*". Interviewee3 stated that "*mobile money transactions costs are high*". Interviewee 24 stated "transacting *on mobile money services is slightly difficult because of network congestion*". Interviewee 20 stated that "during *busy days like Christmas the networks fail to work*". Interviewee 6 stated that "*I enjoy transacting with mobile money services because it is also simple*". Interviewee 9 stated that "transacting *on mobile money services is very easy for me*". Interviewee 11 stated that "*transaction on mobile money services is not so easy*". Interviewee 12 stated that "*sometimes it is difficult when the networks fail to work or transact on mobile money services*". Interviewee 18 stated that "transacting *on mobile money services is very easy for as long as the network is available*".

The above responses were from selected interviews, however, majority of the interviewees agreed that although transacting the mobile money service is easy and simple, nonetheless, occasionally, there are difficulties experienced by traders during peak days and hours of business.

7.10.3. The Contribution of Social Influences to the Model

The model was validated based on respondent's level of agreement that social influences contributes to an individual's behavioural intention(BI) to use the mobile money services for trade transactions and the results are presented in the following figure 11.
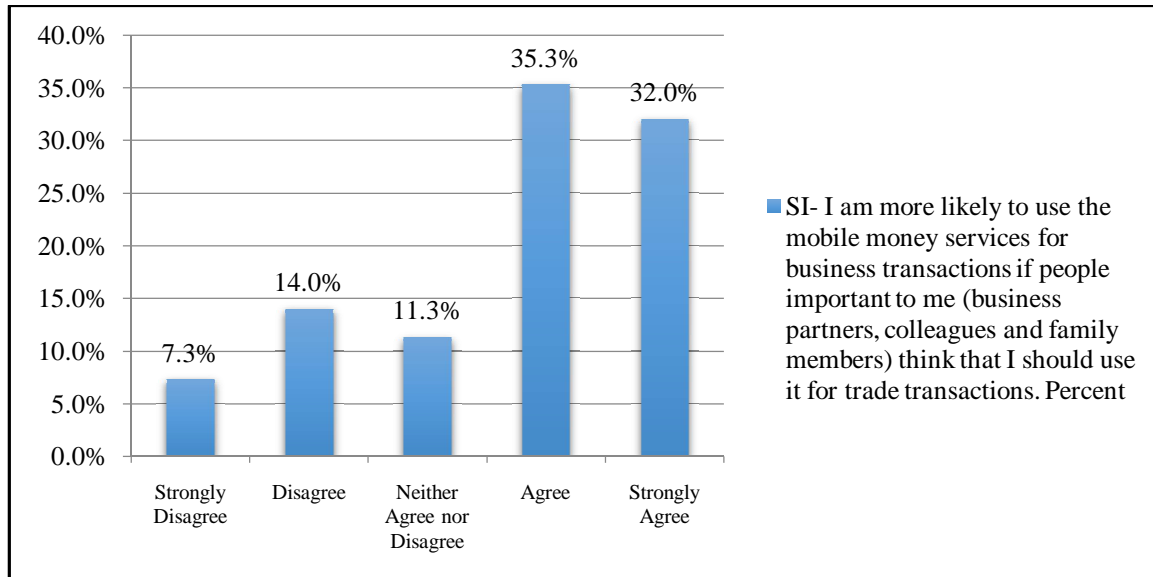

Figure 11: Social Influences

The results in figure 11 revealed that respondents (traders) accepted that people important to them think that they should use mobile money services for trade transactions with thirty five percent (35. 3%) of respondents (traders) agreeing and thirty two percent (32%) strongly agreeing that people important to them think that they should use mobile money services for trade transactions. While fourteen percent (14%) of respondents (traders) disagree, seven percent (7. 3%) strongly disagree that people important to them think that they should use mobile money services for trade transactions. However, eleven percent (11. 3%) of respondents are not sure whether people important to them think that they should use mobile money services for trade transactions.

The results of the model validation on social influences were in agreement with hypothesis three (H3), whereby social influences have a significant influence on behavioural intention (BI) to adopt mobile money services for trade transactions in Uganda.

Regarding social influences, the interviewees gave the following responses during the interview: Interviewee 1 said that: "*none of my business partners, associates nor rival encourage me to adopt and use mobile money services*". Interviewee 2 stated that "yes *my business partners, associates and rivals encouraged me to adopt and use mobile money services*". Interviewee 3 stated that "*my business partner, associates and rivals did encourage me to adopt and use mobile money services*". Interviewee 9 stated that "*no, my business partners, associates and rival did not encourage me to adopt and use mobile money services*". Interviewee 22 stated that "*not really, my business partners, associates, and rivals did not encourage me to adopt and use mobile money services*". Interviewee 27 stated that "yes*, they were using mobile money services, thus, encouraged me to adopt and use mobile money services so that I cannot be left behind by my business partners and rivals as well*".

These responses were from selected interview, nevertheless, majority of the interviewees agreed that their business associates, partners and rivals encouraged them to adopt mobile money services. This could be in order to cope up with mode of their business partners' mode of transactions and compete with their rivals as well.

7.10.4. The Contribution of Security to the Model

The model was validated based on respondent's level of agreement that security contributes to an individual's behavioural intention (BI) to use the mobile money services for trade transactions and the results are presented in the following figure 12.
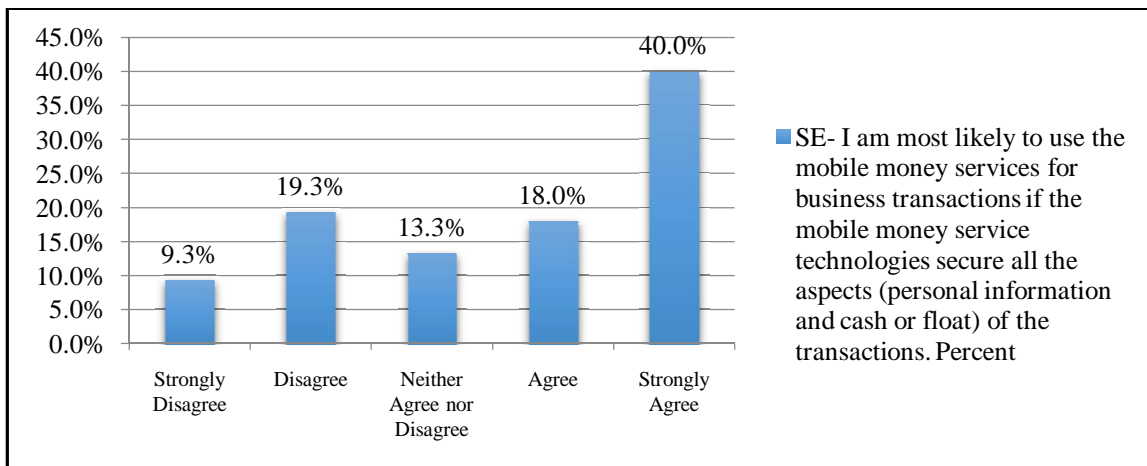
Figure 12: Security

The results in figure 12 revealed that respondents (traders) accepted that mobile money services technologies secure all the aspects of trade transactions with forty percent (40%) of respondents(traders) strongly agreeing, and eighteen percent (18%) of respondents agreeing that the mobile money services is secured in all aspects of trade transactions. While nineteen percent (19%) of respondents (traders) disagree, nine percent (9%) of respondents strongly disagreeing that the mobile money services has adequate security in trade transactions. However, thirteen percent (13. 3%) of respondents were not sure whether the mobile money services are secured for trade transactions.

The results of the model validation on security were in agreement with hypothesis five (H4), whereby security has a significant influence on behavioural intention (BI) to adopt mobile money services for trade transactions in Uganda.

Regarding security, the interviewees gave the following responses during interview:

Interviewee 1 responded that "*the respondent is not informed about the security or not aware about the security concern*". Interviewee 2 said that "my *security concern is that the information is not private*". Interviewee 3 responded that "*mobile money agents don't keep secrets like pin codes*". Interviewee 6 responded that "not *keeping secrets by mobile money service providers is my security concern on mobile money services transactions*". Interviewee 8 said that "*my security concern on mobile money service transactions on network failure*". Interviewee 14 responded that "*the cash saved could get lost during the mobile money transactions*". Interviewee 19 said that "*agents are not trusted*". Interviewee 20 responded that "*money always get lost during transactions is my security concern on mobile money services*". Interviewee 22 said "the *information sent is not secret, is my security concern on mobile money service transactions*". Interviewee 24 responded "mobile *money technology service collapse sometimes, and this is my security concern on mobile money transactions*". Interviewee 26 said that "*information sent during transactions can be accessed by other people, this is my security concern on mobile money transactions*".

These responses were from selected interview, however, majority of the interviewees agreed that their security concerns on mobile money services are failure of networks during transactions, fear of loss of cash saved in the sim pack as well as lack of confidentiality on the information used for transactions.

7.10.5. The Contribution of Sensitization to the Model

The model was validated based on respondent's level of agreement that sensitization contributes to an individual's behavioural intention(BI) to use the mobile money services for trade transactions and the results are presented in the following figure 13.
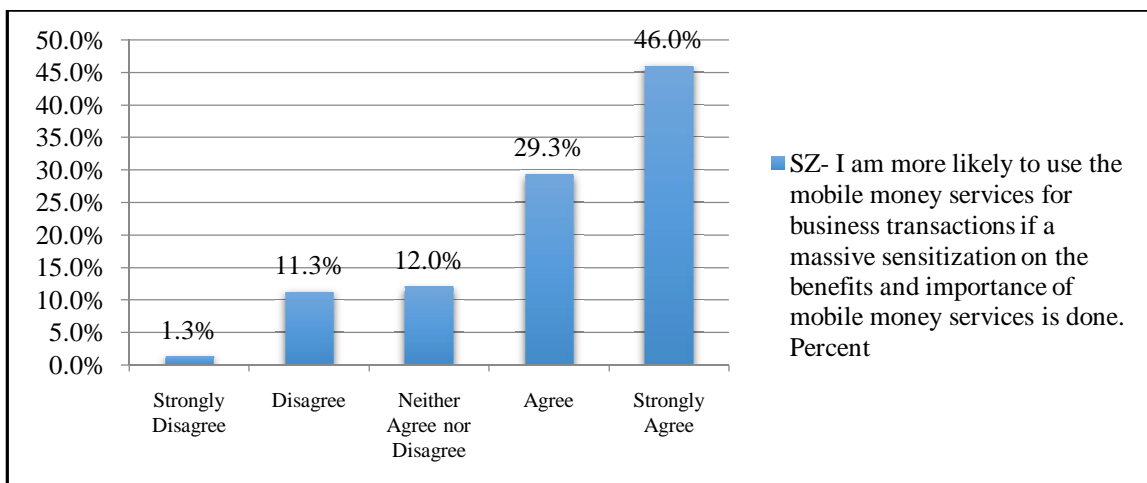

Figure 13: Sensitization

The results in figure 13 revealed that respondents (traders) accepted that massive sensitization on the benefits and importance of mobile money services for trade transaction should be done with forty six percent (46%) of respondents (traders) strongly agreeing, and twenty nine percent (29%) agreeing that the adoption of mobile money services for trade transactions requires massive sensitization about its benefits and importance for trade transactions. In addition, eleven percent (11. 3%) of respondents disagree, and one percent (1. 3%) strongly disagree that the adoption of mobile money services requires massive sensitization about its benefits and importance for trade transactions. Nonetheless, twelve percent (12%) of respondents (traders) are not sure whether massive sensitization on the benefits and importance of mobile money services for trade transactions usage is required.

The results of the model validation on sensitization were in agreement with the hypothesis four (H5), whereby sensitization has a significant influence on behaviour intention (BI) to adopt mobile money services for trade transactions in Uganda.

Regarding sensitization, the interviewees gave the following responses during interview: Interviewee 2 said that "*I am not informed about the benefits and procedures of mobile money services in business transactions*". Interviewee 3 responded that "*to a lesser extent I am informed about the benefits and procedures of mobile money services in business transactions*". Interviewee 5 said that "*I am informed about the benefits and procedures of mobile money services in business transactions to greater extent*". Interviewee 7 respondent that "*I know many benefits and procedures of mobile money services in business transactions*". Interviewee 11 said that "somehow, *I am informed about the few benefits and procedures, I got to know over the media of mobile money services in business transactions*". Interviewee 13 responded that "*I am not informed about any benefits or procedures about mobile money services*". Interviewee 14 said that "*I am partially informed about the benefits and procedures of mobile money services in business transactions*". Interviewee 18 responded that "*I know some few of them like saving*". Interviewee 20 said that "*I am less informed about the benefits and procedures of mobile money service in business transactions*". Interviewee 25 responded that "*I know many benefits of mobile money services through media advertisements*".

These responses were from selected interview, nevertheless, majority of the interviewees agreed that they were informed about the benefits and procedures of mobile money services to a greater extent as well as being informed through media advertisements.

7.10.6. The Contribution of Facilitating Conditions to the Model

The model was validated based on respondent's level of agreement that facilitating conditions contributes to an individual's use behaviour (UB) actual use of mobile money services for trade transactions and the results are presented in the following figure 14.
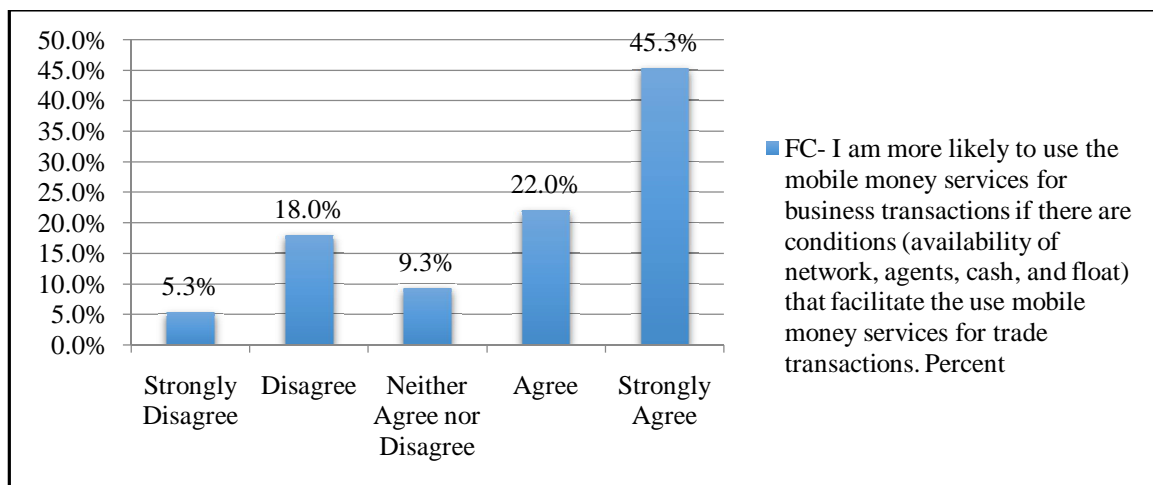

Figure 14: Facilitating conditions

The results in figure 14 revealed that respondents(traders)accepted that conditions facilitating the use of mobile money services for trade transactions is required, with forty five percent (45. 3%) of respondents(traders) strongly agreeing and twenty two percent (22%) agreeing that conditions facilitating use of mobile money services for trade transactions is required. While eighteen percent (18%) of respondents (traders) disagree, eight percent (8%) strongly disagree that conditions facilitating the use of mobile money service for trade transactions is required. However, nine percent (9. 3%) of respondents are not sure whether conditions facilitating the use of mobile money services for trade transactions are required.

The results of model validation on facilitating conditions were in agreement with hypothesis six (H6), whereby facilitating conditions has a significant influence on use behaviour (UB) to the actual use of mobile money services for trade transactions in Uganda.

Regarding facilitating conditions, the interviewees gave that following responses during the interview: Interviewee1 said that "the *network, mobile money services agents, floats, liquidity are always available and accessible as well*". Interviewee 2 responded that "*network connections, mobile money service agents. Liquidity are always readily available whenever I need the mobile money service for transaction*". Interviewee 12 said that "*mobile money service agents are always available but the networks collapse sometimes*". Interviewee 15 said that "*network connections, mobile money service agents, floats, liquidity are always available when I need it for transactions*". Interviewee 16 responded that "*to lesser extent, network connections, mobile money service agents, floats, liquidity are always available when I need it for transactions*".

These responses were from selected interview, nevertheless, majority of the interviewees agreed that mobile money agents, are always available when they their help as well as floats, and liquidity.

7.10.7. The Contribution of Behavioural Intentions to the Model

The model was validated based on respondent's level of agreement that behavioural intention contributes to an individual's use behaviour (UB) to actual use of the mobile money services in trade transactions and the results are presented in the following figure 15.
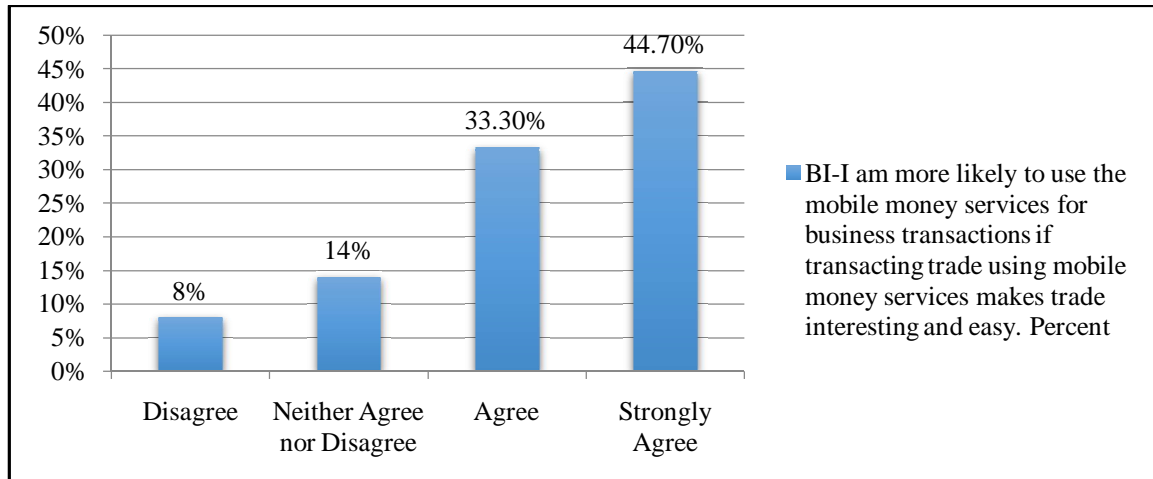

Figure 15: Behavioural Intentions

The results in figure 15 revealed that respondent (traders) accepted that the mobile money services for trade transactions, makes trade interesting and easy with almost forty five percent (44. 7%) of respondents(traders) strongly agreeing, and thirty three percent (33. 3%) agreeing that the mobile money services for trade transactions, makes trade interesting and easy. While eight percent (8%) of respondents (traders) disagree, on the other hand, fourteen percent (14%) of the respondents were not sure whether mobile money services for trade transactions makes trade interesting and easy.

The results of the model validation on behaviour intentions were in agreement with hypothesis seven (H7), whereby behavioural intentions (BI) has a significant influence on use behaviour (UB) or actual use of mobile money services for trade transactions in Uganda.

Pertaining to behavioural intention, the interviewees gave the following responses during the interview: Interviewee1 responded that "*I will continue using mobile money service as long as it is still in process or existing*". Interviewee 2 said that "*I want to continue using mobile money services as long as recommend it to other users for as long as it is in presence*". Interviewee 6 responded "*I will continue using mobile money services as well as recommend mobile money service to other user for as long as it is still user friendly*". Interviewee 8 said that "*I want to continue using mobile money service as well as recommend it to other users as long as it still in operations*". Interviewee 14 responded that "*I want to continue using mobile money service as well as recommend mobile money service to other user as long as the charges are favouring*". Interviewee 16 said that "*I want to continue using mobile money service as well as recommend mobile money service to other users provided that the floats and liquidity are available*". Interviewee 20 responded that "*I want to continue using mobile money services for as long as it is in existence*". Interviewee 25 said that "*I want to continue using mobile money service as well as recommend it to other users provided that the charges are still low and my pin code is safe*".

These responses were from selected interview, nonetheless, majority of the interviewees agreed that they will continue using mobile money services as long as recommend it to other potential users provided that the floats and liquidity are available and the charges are favoring whenever they need to transact.

Furthermore, regarding use behaviour, the interviewees responded as follows:

Interviewee1 responded that "*I use mobile money service to make payments in business transactions*". Interviewee 2 said that "*I use mobile money service to make payments with business partners in business*". Interviewee 8 responded that "*I use mobile money service in business transaction for paying suppliers and rent*". Interviewee 10 said that "*I use mobile money service for business transaction for paying transport and food items for sale*". Interviewee 11 responded that "*I use mobile money service for paying for transport and food items for sales in the business transactions*". Interviewee 12 said that "*I use mobile money services to pay my food suppliers in the village*". Interview 16 responded that "*I use mobile money services in saving money*". Interviewee 18 said that "*I use mobile money service for saving and paying my business associates*". Interviewee 22 responded "*I use mobile money services to pay taxes*". Interviewee 23 said that "*I use mobile money services to pay suppliers and save money*". Interviewee 28 responded that "*I use mobile money services for paying for transport, rents and licenses*". Interviewee 30 said that "*I use mobile money services for paying suppliers and utility bills*".

These responses were from selected interview, however, majority of the interviewees agreed that they use mobile money services to pay transport, rent, license, tax, utility bills, and food suppliers in the village.

8. Comparison of the Results of the Field Study and the Expert Opinion

The results of the findings of the field study and the experts' opinion. The comparisons are presented in the following table 2.

Constructs	Field study Regression results (Beta values from table 5. 1)	Expert opinion
H1: Performance Expectancy(PE)	0. 239(significant)	Is in agreement that PE positively influences behavioural intention (BI) to use mobile money services for trade transactions at 40. 7 %(Agree).
H2: Effort Expectancy(EE)	-0. 042(not significant)	Is not in agreement that EE positively influences behavioural intention (BI) to use mobile money services for trade transactions. Though the expert opinion's outcome was positive at 52. 7%(Strongly Agree)
H3: Social Influences(SI)	0. 257(significant)	Is in agreement that SI positively influences behavioural intention to use mobile money services for trade transactions at 35. 3 %(Agree).
H4: Security(SE)	-0. 022(not significant)	Is not in agreement that SE positively influences behavioural intention (BI) to use mobile money services for trade transactions. Though the expert opinion's outcome was positive at 40 % (Strongly Agree).
H5: Sensitization(SZ)	0. 625(significant)	Is in agreement that SZ positively influences behavioural intention (BI) to use mobile money services for trade transactions at 46. 0 %(Strongly agree).
H6: Facilitating Conditions(FC)	0. 219(significant)	Is in agreement that FC positively influences use behaviour (UB) or actual use of mobile money services for trade transactions at 45. 3 %(Strongly Agree).
H7: Behavioural Intentions(BI)	0. 480(significant)	Is in agreement that BI positively influences use behaviour (UB) or actual use of mobile money services for trade transactions at 44. 7 % (Strongly Agree).

Table 2: Comparison of Field Study and Expert Opinion

Table 2 depicts a comparison of field study regression analysis results illustrated on figure 1 and the findings from the expert opinion in a model for mobile money services adoption by traders showing the Beta values plus their direction and the percentage levels of agreement from the expert opinion. The Beta value (β coefficient) is a measure of how strongly each independent variable influences the dependent variable. The higher the beta value the greater the impact of the independent variable on the dependent variable. The findings of the field study indicate that the independent variables with significant high beta values in figure 1 are performance expectancy ($\beta = 0. 239$), social influences ($\beta = 0. 257$), sensitization ($\beta = 0. 625$), facilitating conditions ($\beta = 0. 219$) and behavioural intentions ($\beta = 0. 480$) as compare to insignificant effort expectancy ($\beta = -0. 042$), and security ($\beta = -0. 022$). Based on the above findings, while positive influence suggests that a change in any of the independent variable causes a change in the dependent variable in the positive direction, on the other hand, a negative influence implies that a change in any of the independent variable causes a change in the dependent variable in the negative direction as well.

 However, while the high independent variables positively influence both the behavioural intention and use behaviour to adopt mobile money services for trade transactions, the low independent variables negatively influence the behavioural intention to use mobile money services for trade transactions. In fact, the validation findings from the interview generally agree that the mobile money services adoption model is acceptable for trade transactions in Uganda. Furthermore, while the field results revealed that effort expectancy and security constructs were negatively insignificant, the interview validation results revealed that the two constructs support the adoption of mobile money services model for trade transactions.

8. Discussions

The purpose of this study was to validate the mobile money services adoption model for trade transactions in Uganda. The model was validated in order to examine whether the developed model is in line with determinant of mobile money services adoption for trade transactions and also whether the developed model is applicable to the area of study or not. The model was availed to expert traders and were asked to respond to questionnaire and interviews on the basis of the validation questionnaire. Findings from the model validation on performance expectancy, effort expectancy, social influences, security, sensitization, facilitating conditions and behavioural intentions were in agreement with the following hypotheses, indicating that they positively influence behavioural intention to use and the actual use of mobile money services by traders in Uganda.

Regarding performance expectancy, the validation results supported the field results, which also confirmed the hypothesis (H1), that performance expectancy (PE) has a significant influence on behavioural intention (BI) to adopt mobile money services for trade transactions. This finding is in agreement with findings of Omwansa(2012), Kateete(2010) and Venkatesh et al., (2003). However, this finding was contrary to the findings of Mirzoyants(2012) who found that performance expectancy which did not rank high among the reasons for using a given money delivery method including mobile money services.

 Regarding effort expectancy (EE), the validation results revealed that supported hypothesis (H2) that states that effort expectancy (EE) has a significant influence on behavioural intention (BI) to adopt mobile money services for trade transaction. This validation findings were in agreement with the findings of Venkatesh and Morris, (2000), and Wang et al., (2009), who found that effort expectancy for using information systems is a significant antecedent of behaviour intention to use the information system. However, the validation findings did not support field results as well as the findings of Omwansa(2012) and Kateete(2010).

Furthermore, regarding social influences (SI), the validation findings confirmed hypothesis (H3), which stated that social influences (SI) has a significant influence on behavioural intentions (BI) to adopt mobile money services for trade transactions. This finding in agreement is in line with findings of the field study results as well as the findings of scholars such as Omwansa(2012), Kateete(2010), Wang et al., (2009) and Mbogo(2010) who found that consumer decision to adopt a payment system is significantly affected by the amount of the other consumers and traders using it.

Regarding security (SE), the validation results confirm hypothesis (H4), which states that security (SE) has a significant influence on behavioural intention (BI) to adopt mobile money services for trade transactions. This finding is in agreement with the findings of Mallat et al., (2008), Jenkins(2008) and Swatman et al., (2002) who found that the advantages of mobile money include security, anonymity and privacy, confidentiality, data integrity, authentication, non-repudiation and convenience. However, the finding is contrary to the field results which found that security does not significantly influence the behavioural intention of traders to adoption mobile money services for trade transactions.

Regarding sensitization (SZ), the validations confirmed hypothesis (H5), which stated that sensitization (SZ) has a significant influence on behavioural intention (BI) to adopt mobile money services for trade transactions. This finding is in agreement with the field study findings as well as the findings of Obgonna(2013) and Uduma(2012) who asserted that for African people to adopt mobile money services they need to be massively sensitized about the usefulness of the service as well change the mind set of telecom consumers towards the adoption of mobile money services.

Regarding facilitating conditions (FC) the validation results confirm the hypothesis (H6), which states that facilitating conditions (FC) has a significant influence on use behaviour (UB) of traders to use MMS for trade transactions. This finding is in agreement with the findings of the field study results as well as the findings of Mirzoyants(2012), Mallat (2007), Heyer and Mas(2009), Osei-Assibey(2014), Mwesigwa(2013) and Jack and Suri(2011) who found that lack of accessibility to mobile money agents, and mobile network reliability, flexibility and service transaction costs appear to be major barriers, preventing activation and usage of mobile money accounts.

Regarding behavioural intention (BI), the validation results confirmed hypothesis (H7), which stated that behavioural intention (BI) has a significant influence on use behaviour (UB) of mobile money services for trade transactions. This finding is in agreement with findings of field study as well as the findings of Omwansa(2012), Kateete(2010), and Davidson and Mccarty, (2010) on the behaviour intention that positively influence use behaviour of mobile money services.

UTAUT model by Venkatesh et al., (2003) gained a lot of popularity because it had passed empirical tests in different parts of the world, producing statistically reliable results and it has demonstrated that it is the most dependable and easy models of explaining individual's intention of adoption of technology. Hence, in the context of this study, with behavioural intentions as the independent variable, the model for mobile money service adoption for trade transactions is dependable and can be used to increase and ease trade transactions in Uganda.

9. Conclusion

Validating a developed model for mobile money services for trade transactions in Uganda is important if the acceptance and usage of these critical services is to be improved. This study examined the validity of mobile money service adoption model for trade transactions. In other words, this study examined the applicability of the extended UTAUT model using drivers for mobile money services that significantly influenced behavioural intentions to use mobile money services for transactions as well as the actual use of the services. The mobile money services adoption model for trade transaction drivers investigated were, performance expectancy, effort expectancy, social influences, facilitating conditions, security and sensitization.

The model validation results in section 7 show that in general traders agree that they are likely adopt mobile money services for trade transactions: if it can enable help perform their trade jobs well; if it is easy to use for trade transactions; if it their business partners and associate encourage them to use it to facilitate transactions; if the mobile money services is secured in all aspects including technology and human resources; if traders are sensitize on the benefits and importance of mobile money services for trade transactions.

The results of the study should help in advancing the knowledge of traders' decision making in the context of adopting the mobile money services for trade transactions. As the value of the mobile money services transactions continue to grow, it has become imperative to understand the decision dynamics in the marketplace environment. Hence, the adoption of mobile money services by traders is a reality that is possible and will work once traders' attitudes are changed.

Based on the above accounts, mobile money service providers need to tailor and introduce different types of pocket friendly services to diverse segment of customers (traders) such as proprietors, small and medium businesses, and cooperate institution. This move should also consider traders based on the nature of trade they are involved in such as retailing, wholesaling and market vending. In addition, mobile money services agents need to be trained such that they can render professional services to customers while observing professional ethics as well. Furthermore, infrastructural development and improvement is also needed if the benefit of using mobile money services for trade transactions should be realized in future.

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