Mobile money usage and financial inclusion in Uganda

***Byamukama Eliab Mpora, Kaaya Siraje, Abanis Turyahebwa** and **Miria Nyangoma**

Department of Business Studies, Kabale Universiy, Uganda

ABSTRACT

Giving the less fortunate in developing and emerging nations like Uganda the mobile money they need opens up a world of opportunity for banks and newly emerging financial technology companies. In contrast to its siblings, such as automated teller machines, online banking, point-of-sale banking, etc., many people view mobile money services as a distinct domain within the banking and payment business. The purpose of this study was to establish the relationship between mobile money usage and financial inclusion. A conceptual model based on the stimulus-organism-response paradigm is presented in this work. The key objectives set for the study included;

I.   To identify the level of mobile money usage in Uganda
II.   To identify the level of financial inclusion in Uganda
III.   To determine the effect of mobile money usage on financial inclusion in Uganda.
IV.   To establish the relationship between mobile money usage and financial inclusion in Uganda.

The study used a cross sectional research design to collect data from mobile money users located in Kabale district, western Uganda. A correlational research design was also used to establish the relationship. Both quantitative and qualitative approaches were adopted. The findings revealed that there is a strong relationship between mobile money usage and financial inclusion ($r = 0.670$, $p < 0.01$). Similarly, the findings indicated that mobile money usage influences financial inclusion by 45%.

Introduction

Mobile money services constitute the utmost auspicious mobile applications in most of the developing countries. Mobile money together with a block chain could become an overall platform that transmutes various economies, as it is espoused across business, agriculture and health care.

Uganda's mobile financial services continued to register steady growth with the quarter ending December 2019 realizing 700,000 new mobile money accounts. However, some high value Ugandans shifted from using money services to agency banking. According to the latest Uganda Communications Commission report net additions in registered mobile money accounts between December 2018 and

December 2019 stood at 2.6 million. The quarter ended with 27.1 million registered mobile money accounts, up from 26.4 million in September 2019. The figure does not represent the number of active mobile money accounts which stood at 16.6 million, according to the regulator. Active mobile subscriptions refer to accounts that have conducted at least one billable financial service in three months," which in this case covers the months of October to December 2019.

During the period under review, mobile money agents reduced from 225,879 in September to 219,577 as at the end of December 2019 which has been attributed to increased competition from agency banking, increased bank-to-wallet-to bank transfers and increased number of merchants accepting such payment, which has kept money in the ecosystem. This service has greatly reduced unemployment in Uganda.

However, the magnitude of unemployment in Kigezi region can be traced to the persistent increase in the rate of unemployment over the years. Youths constitute the greater percentage of unemployed in the district according to UBOS (2016), where the rate stood at 13.2 percent in 2006 and declined in 2007 to 5.9 percent and later in 2008 rose to 11.6 percent. In recent development between 2014 and 2018, Kigezi region was ranked with the high rate of unemployment among youths and women. The growth in population of the region does not help matters from 1.3 million people in 2006 to 1.5 million people in 2014 without corresponding increase in the job opportunities (UBOS, 2016). Unemployment poses a greater challenge to the youths that are economically active where they faced clearly formidable problems in finding their first employment as well as those labors that lost their jobs in Kigezi region of Southwestern Uganda.

The collapse of most of the industries in the private sector as well as lack of job opportunities in the public sector has contributed greatly in increasing the unemployment rate. For instance, the closure of 8 textile and garment industry that was considered as one of the major employers of labor had contributed in no small measure in rising unemployment rate in Kigezi region in Kigezi region of South Western Uganda. Retrenchment of workers in the public and private sectors as a result of government economic policy of structural adjustment programme (SAP) that brought about deregulation and over regulation, liberalization and devaluation of local currency which contributed in exposing the local industries and locally produced goods to the international competition which was not favorable to those local industries to compete with the developed economy industries and their cheaper products. This led to decline in the demand of locally produced goods as well as the decline in production of goods and services, this prevented production growth and expansion that can lead to absorption of new entrants into the labor market. The study will examine the effect of mobile money tax exemption, interoperability and mobile usage and financial inclusion in Kabale district, Uganda. A cross sectional survey will be adopted using questionnaires, enterprise records and interview to a sample of selected enterprise in Kabale district in Kigezi region of Uganda using cluster sampling technique.

Statement of the Problem

Poverty is more than just a lack of money. It involves a deficiency of access to the tools and means through which the poor could better their lives. Exclusion from the formal financial system has progressively been acknowledged as one of the obstacles to a world without poverty (Aker *et al*, 2011). In most of the developing countries, more than half of households do not own a bank account, while small firms frequently cite difficulty in accessing and affording financing as a key constraint on their growth. This

exclusion does not essentially mean that the poor lack active financial lives; in fact, the delicateness of their situation has led to the development of sophisticated informal financial instruments (Gencer, 2011). However, the use of only informal instruments means that the poor are limited in their ability to save, repay debts, and manage risk responsibly.

Whereas mobile money has accomplished critical mass, there are still quite a big number of the poor not yet connected. This has led to exclusion of some of the poor from the financial network and this has impacted negatively on their livelihoods. Thus, this study will assess how increase in mobile money tax is affecting usage and financial inclusion in Kabale district of Southwestern Uganda.

General Objective

The general objective of this research was to establish the relationship between Mobile money usage and financial inclusion in Uganda; a case of Kabale district.

Specific Objectives

This study therefore intended to achieve the following objectives:
- To identify the level of mobile money usage in Uganda
- To identify the level of financial inclusion in Uganda
- To determine the effect of mobile money usage on financial inclusion in Uganda.
- To establish the relationship between mobile money usage and financial inclusion in Uganda.

Research Questions

- What is the level of mobile money usage in Uganda?
- What is the level of financial inclusion in Uganda?
- Is there any effect of mobile money usage on financial inclusion in Uganda?
- What is the relationship between mobile money usage and financial inclusion in Uganda?

Rationale/Justification

The study was conducted in Kabale district in southwestern Uganda. The population of owners and users of mobile money is high in Kabale district compared to other districts in the region and the country as a whole. This has contributed greatly to business growth among traders across the borders, especially among traders at the border between Rwanda and Uganda.

It's evident that even during the hard times of Covid 19 Pandemic business transaction continued to progress due to use of mobile money when other financial institutions had closed. However, the problem at hand is that, increase in mobile money tax is affecting usage and financial inclusion in Kabale district of Southwestern Uganda.

Thus, this study intended to investigate if mobile money usage has an impact on financial inclusion in Uganda; a case of Kabale district Uganda. Mobile money business has also contributed to solving unemployment gap in Kabale and assisting the population to earn income and be able to put food on table. The majority of the population do not own bank accounts and mobile money usage has enabled regular transfers of money.
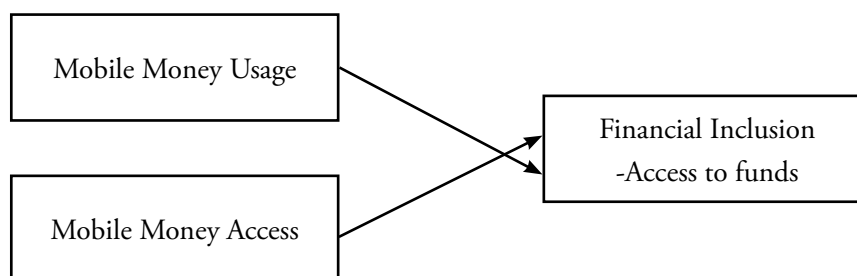
Scope

The research focused on mobile money usage and financial inclusion in Uganda, specifically in Kabale district, over a period of twelve months.

Theoretical Framework

In this study, a survey was conducted involving owners of mobile money kiosks top level managers of the Mobile money both in Kabale region of South Western Uganda. The survey design was explained in detail in our methodology, but in order to construct a scientific questionnaire to measure which factors are influential, the conceptual model was designed.

Conceptual Framework

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┌─────────────────────────┐
│                         │
│   Mobile Money Usage    │ ─────────────┐
│                         │               \
└─────────────────────────┘                \    ┌─────────────────────────┐
                                             \   │                         │
                                              ──►│   Financial Inclusion   │
┌─────────────────────────┐                  /   │   -Access to funds      │
│                         │                 /    │                         │
│   Mobile Money Access   │ ───────────────/     └─────────────────────────┘
│                         │
└─────────────────────────┘
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Source: Researcher generated 2022

Literature Review

Mobile Money

Mobile money has fascinated more attention from the developing countries than as compared to developed nations (World Bank, 2012). Mobile money adoption is currently lower in more developed nations, where most people have bank accounts and the mobile phone is evolving as just another payment channel for existing financial products and services and for customers with bank accounts (WEF, 2011). In emergent economies, mobile money is being used strategically to enable people without bank accounts to carry out financial transactions.

Mobile Money was brought in Uganda in 2009, with 'Mobile Money' guidelines (Bank of Uganda, 2021) specifying the endorsement procedure for the Mobile Money services together the roles and tasks of all parties involved. The total number of recorded Mobile Money accounts moved to 31.3 million by the end of June 2021 from 30.5 million at the end of March 2021,2 from a base of 552,047 registered Mobile Money accounts in 2009. The value of yearly transactions has grown from nearly US$37.3 million in 2009 to $18.7 billion in 2020, with customer balances also increasing from approximately $1 million in 2009 to $144.2 million in 2020. The number of Mobile Money agents, key ecosystem players supporting this growth, has grown from 53,550 in 2013 to 376,111 by 2020 (Bank of Uganda, 2021).

Since the introduction of Mobile Money in Uganda, numerous regulations have been enacted related to the running of mobile financial services. The Excise Duty (Amendment) Act 2018 presented a Mobile Money tax of 0.5 percent on withdrawals (with effect from the 2018–19 financial year), together with an over the top (OTT) tax of 200 Ugandan Shillings (UGX) USD $0.056 charged per day to use social

media applications such as Facebook, Twitter, and instant messaging and voice communication apps like WhatsApp. Effective July 1 2021, the OTT 'social media' tax was removed and replaced with a 12 percent tax on Internet data in the new financial year (2021-2022) (Bank of Uganda, 2021).

Mobile Money Usage

Data from the GSM Association, utmost of the 100-plus placements of mobile money systems have been in emerging economies, with around half in Africa alone (McKay and Pickens 2010). Mobile money systems can be made available wherever there is wireless phone service, helping to overcome distance, as well as the lack of branch offices in rural areas (Stuart and Cohen 2011).

Meanwhile mobile money is often interrelated to financial inclusion, it is vivacious to comprehend how and under what circumstances mobile money applications can encompass financial services to the poor. Support for mobile money initiatives from governments, nongovernmental organizations, and the international development community needs to be vindicated by measuring the effect on enlargement goals such as financial inclusion, poverty reduction, increased productivity, and risk management (Sen and Choudhary 2011).

Financial Inclusion

Poverty is more than just a deficiency of money. It encompasses a lack of admittance to the apparatuses and means through which the poor might improve their lives. Exclusion from the formal financial system has increasingly been identified as one of the barriers to a world without poverty (GSMA Mobile Money Tracker, 2012). In many developing countries, more than half of households lack an account with a financial institution, while small firms frequently cite difficulty in accessing and affording financing as a key constraint on their growth (Mas, Ignacio, 2011). This exclusion does not necessarily mean that the poor lack active financial lives: in fact, the fragility of their situation has led to the development of sophisticated informal financial instruments. However, the use of only informal instruments means that the poor are limited in their ability to save, repay debts, and manage risk responsibly.

Mobile money could transform financial inclusion. "Where most financial inclusion models have employed either 'credit-led' or 'savings-led' approaches, the M-PESA experience suggests that there may be a third approach—focusing on building the payment 'rails' on which a broader set of financial services can ride," wrote the authors of one report (Mas and Radcliffe 2010). While benefits from the simple diffusion of an improved infrastructural "rail" are significant, even greater impact arises because mobile money systems can serve as a platform for additional innovations, whether they be bill payment services that avoid lengthy queue times or more striking examples such as efficient conditional cash transfers for drought relief or compensation (Ehrbeck and Tarazi 2011).

Methodology

Study Design

The study used a cross sectional research design to collect data from mobile money users located in Kabale district, western Uganda. A correlational research design was also used to establish the relationship.

Both quantitative and qualitative approaches were adopted and data was collected from a total of 550 mobile money users located in Kabale district who were randomly sampled. The data collected was input in SPSS

and analysis was done using Structural Equation Modelling (SEM) to establish the relationship between the exogenous and endogenous variables of mobile money usage and financial inclusion.

Study Population

The population of this study were the users of mobile money services in Kabale district of Southwestern Uganda. This district has high concentration of Mobile money owners. The owners and the managers of these MMs were the units of enquiry or respondents as a result of their direct involvement in planning, implementation and management of the firms' growth and development. The total population was 550 respondents.

Sample Size

The sample size required for quantitative survey was computed using Yamane (1967) formula of calculating single population proportions with the assumption of 5% margin of error, 95% confidence level. In view of the number of Mobile Money owners in the one district, a minimum and appropriate sample size was drawn from the target population as follows:

$$n = \frac{N}{1 + N(e2)}$$

Where; N is the population of study; n is the sample size and e is precision level. With a population of 550 respondents, the sample size is 226.

This enabled the target population of firms to be adequately and sufficiently represented in the sample size as indicated in Table 2.

Sampling Technique

A cluster sampling procedure was applied to select the firms' respondents. Firms' owners and managers were the units of inquires due to their importance as custodian of information of all the activities taking place in their respective MSMEs (Rhodes, 2009). In cluster sampling, the research population was divided into clusters (areas or districts) and selected using simple random sampling. This enabled the target population of firms to be adequately and sufficiently represented in the sample size as indicated in Table 2:

Data Collection

Interviewer-administered structured questionnaire were used to obtain information from Mobile money users and owners by trained interviewers. The criteria of selection was based on the inclusive criteria that the mobile money owners are registered. The firms that were selected had spent a minimum of one year in business and categorized as micro and small in their service. The firms that were selected were based within Kabale district. Mobile Money owners and managers were the unit of inquires due to their importance as custodian of information of all service activities taking place in their respective businesses.

Five (5) Research Assistants and three (3) Research Officers were needed basing on a set of criteria such as expertise and knowledge of the local language. The Research Assistants were trained for two days by the Research Officers on the purpose of the study, data collection tools or instruments, how to interview and how to extract information from firm records and the overall data collection procedures.

Data Collection Methods

Primary data was collected using the questionnaire.

Research Instruments

The study used a questionnaire which was developed on the basis of the objectives of the study and conceptual framework. Interview guide shall also be used.

Questionnaire

The questionnaire was designed such that each question relates to a research question and the topic. The questionnaire was preferred because it gives clear and specific responses and enables the respondent to express themselves freely especially those who may have time to interact with the questionnaires.

Validity and Reliability of the Instruments

The validity of the instrument for this study was tested using three approaches; that is face validity, content validity and constructs validity.

Face validity

Using face validity, the question items in the instruments were checked by three experts two from Kabale University and one from association of mobile users, who helped to eliminate ambiguities in the phrasing of words. The suggestions made by these three experts were used to make revisions in the final questionnaire and interview guide and they verified these revisions before the questionnaire was administered.

Mazaki (2009) echoes LoBiondo-wood & Haber (2002) by referring to validity as the extent to which an instrument measures what it is supposed to measure and whether it measures it accurately. To ensure validity, the research instrument covered all the dimensions of the phenomenon under study as clarified in the conceptual framework in. The questionnaire was discussed among the researchers (investigators), and other experts within the University were requested to rate the instrument to assess its structure, contents, clarity, level of consistency and relevancy in relation to the research objectives.

Reliability

The reliability of an instrument is the degree of consistency which measures the attribute; it is supposed to be measuring Cohen, Manion and Morrison (2000). It also measures the degree to which research instrument yields consistent results if administered at different occasions. Reliability can be equated with the stability, consistency, or dependability of a measuring tool.

According to Cohen *et al*. (2000) correlation value greater than 0.7 make possible group predictions that are accurate enough for most purposes. A high degree of stability indicated a high degree of reliability, which meant the results are repeatable (Amin, 2005). The less variation an instrument produces in repeated measurements of an attribute, the higher its reliability.

Researchers pretested some copies of questionnaires to respondents who were not part of the final sample for the study. A reliability analysis was conducted for the scales using Cronbach's Alpha. Cronbach's coefficient alpha is designed as a measure of internal consistency, that is, do all items within the instrument measure the same thing (George and Mallery, 2003).

Cronbach's alpha is used here to measure the reliability of the questionnaire between each construct. The normal range of Cronbach's coefficient alpha value is between 0.0 and + 1.0. The closer the Alpha is to 1, the greater the internal consistency of items in the instrument being assumed. As the number of items (variables) in the construct increases, the value becomes large. Also, if the inter correlation between items is large, the corresponding value will also be large. Since the alpha value is inflated by a large number of variables then there is no set interpretation as to what an acceptable alpha value is.

Data Management and Analysis

The data was analyzed using quantitative analysis approach. The descriptive statistics (frequencies and percentages) was used and presented in tables. Pearson Product Moment correlation statistics was used to establish the level of the relationship. Regression analysis was carried out to model the relationship between those factors under mobile money tax exemption mobile money usage and financial inclusion.

Results: Data Presentation, Analysis, Interpretation and Discussion of Findings

Sample characteristics

It was necessary to understand the attributes of both the unit of analysis and the unit of inquiry in this study. This was done by analyzing the demographic characteristics of Mobile Money Businesses (Unit of analysis), and owners and users of mobile money services who represented units of inquiry. This section thus covered characteristics of unit of inquiry (education levels, age, positions held, time a respond has been in the position and gender) and characteristics of the unit of analysis (location of firm, duration in business and nature of transactions).

Table 1: Gender of respondents.

		Frequency	Percent	Valid Percent
Valid	MALE	113	51.8	51.8
	FEMALE	105	48.2	48.2
	Total	218	100.0	100.0

Table 2: Age group

		Frequency	Percent	Valid Percent
Valid	18–25	132	60.6	60.6
	26–33	53	24.3	24.3
	34–41	22	10.1	10.1
	42–49	6	2.8	2.8
	50+	5	2.3	2.3
	Total	218	100.0	100.0

Table 3: Age group

		Frequency	Percent	Valid Percent
Valid	Primary School Certificate	7	3.2	3.2
	Secondary School Certificate	43	19.7	19.7
	Diploma	50	22.9	22.9
	Bachelor's Degree	108	49.5	49.5
	Post Graduate Degree	10	4.6	4.6
	Total	218	100.0	100.0

Table 4: Do you own a phone?

		Frequency	Percent	Valid Percent
Valid	Yes	171	78.4	78.4
	No	47	21.6	21.6
	Total	218	100.0	100.0

Table 5: What type of mobile money transaction do you use most?

		Frequency	Percent	Valid Percent
Valid	Savings	32	14.7	14.7
	Payments	56	25.7	25.7
	Loans	6	2.8	2.8
	Remittances	4	1.8	1.8
	Withdrawals	115	52.8	52.8
	Others	5	2.3	2.3
	Total	218	100.0	100.0

Table 6: In the last 7 days have you used mobile money for any transaction?

		Frequency	Percent	Valid Percent
Valid	Yes	186	85.3	85.3
	No	32	14.7	14.7
	Total	218	100.0	100.0

From Table 1, regarding the gender distribution of the respondents, 52% and 28% of respondents represented males and females respectively, as indicated in Table 1 above. This shows that Mobile Money Business employ more males than females, a trend that is common in other organizations. From the findings, it is clear that 85% of respondents were below 34 years of age. This indicates that the majority of the respondents were youth and are mature enough to respond to the questions.

Table 3 covers education levels of the respondents. From the same Table, it is evident that 22.3% of respondents are diploma holders, 52.6% degree holders, 17.9% hold master's degree and 7.2% of respondents have professional qualifications.

Basing on the above results, it is clear that the majority of respondents were highly qualified and, hence, competent enough to provide accurate answers.

Table 7: Level of Mobile Money Usage.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
I save time when I use mobile money	218	1.00	5.00	4.2706	.91337
Mobile money helps me to perform my transactions in privacy	218	1.00	5.00	4.1147	1.03428
Mobile money is helpful in the management of my transactions	218	1.00	5.00	3.8945	1.01276
Access to mobile money speeds my transactions	218	1.00	5.00	3.8899	1.09325
I have feeling of personal achievement for using mobile money	218	1.00	5.00	3.6514	1.17482
The tasks of mobile money are within my limit	218	1.00	5.00	3.2477	1.20028
I use mobile money because it is available 24 hours daily	218	1.00	5.00	3.7706	1.20393
I carry little cash around because I use mobile money	218	1.00	5.00	3.6881	1.26051
I prefer to use mobile money instead of banks	218	1.00	5.00	3.3853	1.32962
I use mobile money for all my transactions	218	1.00	5.00	3.1789	1.37794
I will continue using mobile money services as long as it exist	218	1.00	5.00	3.5917	1.31048
I enjoy using mobile money services for my transactions	218	1.00	5.00	3.6927	1.15285
The mobile money system meets my financial needs well	218	1.00	5.00	3.2752	1.31192
The mobile money system meets my expectations	218	1.00	5.00	3.2798	1.36434
I usually have no complaints about mobile money agent	218	1.00	5.00	3.0642	1.39964
I'm always comfortable with the mobile money service network	218	1.00	5.00	3.1651	1.42080
I'm always confident of the mobile money services	218	1.00	5.00	3.5596	1.19083
I'm contented with the costs incurred in using mobile money	218	1.00	5.00	2.5550	1.40085
I always use mobile money because of its reliability	218	1.00	5.00	3.5780	1.19749
The registration process for mobile money services is easy	218	1.00	5.00	3.0275	1.41720

Source: Primary data

Critical analysis of Table 4.7 reveals that all mean scores of the constructs in question range between 2.55 and 4.27, with the standard deviations in the range of 0.91 to 0.81. Because of small standard deviations compared to mean values, it is clear that the data points are close to the means and hence calculated means highly represent the observed data. In effect, the calculated means are a good replica of reality (Garson, 2000; Field, 2006, & Saunders *et al.*, 2007).

On the basis of the mean values of mobile money usage elements, it is evident that respondents accepted that they save time when I use mobile money (Mean =4.27) followed by Mobile money helps them to perform my transactions in privacy (Mean =4.11). The findings also indicate that Mobile money uses are

not contented with the costs incurred in using mobile money (Mean =2.55). The same argument could be traced to earlier findings of Aijaz *et al.* (2023), Thulani *et al.* (2014).

Table 8: Level of Financial Inclusion.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
There are many mobile money agents nearby my business	218	1.00	5.00	3.8028	1.11653
The mobile money services are always readily available	218	1.00	5.00	3.5963	1.12876
The mobile money transactions are affordable	218	1.00	55.00	3.2156	3.74957
The mobile money agents always have enough floats/cash	218	1.00	5.00	3.0229	1.30381
The mobile money telecom network is always reliable	218	1.00	5.00	3.2339	1.22393
The numbers of documents required when registering for mobile money are few	218	1.00	5.00	3.0826	1.33115
The mobile money service suits my needs	218	1.00	5.00	3.6514	1.15903
The mobile money service is safe for me	218	1.00	5.00	3.8349	1.08627
The mobile money service satisfies my needs	218	1.00	5.00	3.5642	1.15124
The mobile money service is useful to me	218	1.00	5.00	3.8853	1.02982
The level of service provided by mobile money agents is satisfactory	218	1.00	44.00	3.5092	3.00727
The mobile money services are always at my convenience	218	1.00	5.00	3.4037	1.17673
The mobile money services are user friendly	218	1.00	5.00	3.5459	1.14811
The mobile money services are easy to access	218	1.00	5.00	3.6881	1.15760
Mobile money transaction is less time consuming	217	1.00	5.00	3.9078	1.15501
The terms and conditions on use of mobile money services are favorable to me	218	1.00	5.00	3.4954	1.27452
Use of mobile money has improved on my business sales	218	1.00	5.00	3.2982	1.33306
I have many customers because of using mobile money services	218	1.00	5.00	3.2936	1.29730
Use of mobile money has improved on my business efficiency	218	1.00	5.00	3.5138	1.18450

A deep analysis of Table 8 reveals that all mean scores of the constructs of financial inclusion range between 3.02 and 3.91, with the standard deviations in the range of 1.02 to 1.37. Because of small standard deviations paralleled to mean values, it is clear that the data points are close to the means and henceforth calculated means highly epitomize the observed data. In effect, the calculated means are a good imitation of reality (Garson, 2000; Field, 2006, & Saunders *et al.*, 2007).

Basing on the mean values of mobile money usage elements, it is evident that respondents accepted that they save time when I use mobile money (Mean =3.91) followed by mobile money service is useful to many in handling emergencies with relatives (Mean =3.88). The findings also indicate that Mobile money agents normally do not have sufficient floats/cash available to handle the needs of customers.

This limits the level of financial inclusion. (Mean =3.02). The same argument could be traced to earlier findings of Parasuraman *et al.* (1994), who initially proposed the conceptual model of perceived service quality, note that service quality is considered the users' or customers' perceptions and value judgment of service.

There is a broad consensus among academic researchers (e.g., Prentice *et al.*, 2019) that service quality can be judged on the basis of a single encounter experience with a product or service. Similar to source credibility, the quality of service that is delivered by agents in the mobile money context is considered a key determinant of the success or failure of the mobile money business because the service quality element is essential to achieving customer satisfaction, trust, loyalty, and behavioral intention (Boonlertvanich, 2019; Prentice *et al.*, 2019) with a certain product or service. Unlike product quality, which can be measured and checked objectively by tangible or visible signs, such as defects, cuts, durability, weight, etc. (Garvin, 1983), service quality by nature is quite intangible and without any objective measures (Zietsman *et al.*, 2019).

Correlation Analysis of Variables

Correlation analysis was done to help answer the objectives. The objective was to determine whether the criterion variable, financial inclusion, and the predictor variable, mobile money usage, had linear connections.

It was appropriate to conduct parametric tests since the data in this investigation fit the parametric requirements (Field 2006). To quantify the strength of the association between the research variables, bivariate-correlation studies were carried out, and Pearson correlation coefficients were produced (Field 2006).

Table 9: Relationship Between Mobile Money Usage (MM usage) and Financial Inclusion (Finclusion).

	Correlations		
		MMusage	FInclusion
MMusage	Pearson Correlation	1	.670**
	Sig. (2-tailed)		.000
	N	218	217
FInclusion	Pearson Correlation	.670**	1
	Sig. (2-tailed)	.000	
	N	217	217
**. Correlation is significant at the 0.01 level (2-tailed).			

The findings in Table 4.9 indicated a positive significant relationship between mobile money usage and financial inclusion (0.000< 0.05). The results indicated that mobile money usage is positively correlated with financial inclusion (r = 0.670, p< 0.01). This is a sign that a strong relationship exists between mobile money usage and financial performance. This signifies that a higher emphasis on mobile money usage is associated with high financial inclusion levels. These results are in support of a study by Dermish, *et al*, (2012) which emphasized that the development and deployment of mobile money has generated a lot of interest among stakeholders, particularly in developing countries to solve infrastructural gaps that hinder an all-inclusive financial system.

Regression Analysis Between Mobile Money Usage and Financial Inclusion

Regression analysis assisted in ranking the effect Mobile Money Usage on the level of financial inclusion in Kabale district. The researcher deemed it fit to test these hypotheses by carrying out linear regression analysis, with the aim was to establish the predictive power of mobile money usage on financial inclusion.

Table 10: Linear regression of Mobile Money Usage on financial Inclusion.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.670[a]	.449	.446	9.31835
a. Predictors: (Constant), MMusage				

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15189.865	1	15189.865	174.935	.000[b]
	Residual	18668.808	215	86.832		
	Total	33858.673	216			
a. Dependent Variable: FInclusion						
b. Predictors: (Constant), MMusage						

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	21.839	3.442		6.345	.000
	MMusage	.640	.048	.670	13.226	.000
a. Dependent Variable: FInclusion						

From table 10, mobile money usage accounted for 45% of variance in financial inclusion (F-Change = 13.226, P < .01) and caused a statistically significant standardized coefficient (B =0.64, P <0.01); this finding indicates that mobile money usage strongly influences financial inclusion. These results agree with a number of studies which revealed positive impact on savings, information exchange, increased income and remittances and reduced costs (Dermish *et al*, 2012; Morawczynski, 2011; Jack & Suri, 2011 and Morawczynski, Demombynes & Thegeya, 2012, Mbiti & Weil, 2011)

Managerial Implication

The fact that the agent is so important to mobile money services has led to the term "mobile money agent " being used to describe the technology. Our research demonstrates that financial inclusion is influenced significantly by usage of mobile money, thus must raise the credibility of frontline mobile

money staff (i.e., agents) in order to ensure the seamless execution of mobile money transactions, the dependability and confidentiality of these transactions, as well as to protect the privacy of the customers who are executing these transactions. Reducing operational procedures, enhancing agent monitoring, and routinely onboarding and training new agents could all help achieve this and increase the level of financial inclusion.

Social Implication

One of the significant societal implications of the study is the importance of financial inclusion, which has grown since mobile money was introduced in the majority of developing and emerging nations like Uganda. Based on a theoretical model that seeks to imply that technology and service innovation can spur digital financial inclusion and significantly impact society by documenting transactions, reaching the isolated communities and hard to reach areas by commercial banks, and encouraging savings, our study provides evidence for the model of financial inclusion.

Additionally, social transformation associated with financial inclusion programs can be successful and desirable by developing and putting into action a comprehensive plan that takes into account three crucial criteria. As demonstrated by the survey study's findings, 1) installing digital platforms in virtually unreachable locations and designating a mobile money agent across the areas.

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