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Behavioural Determinants of Financial Inclusion in Uganda

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PhD Thesis

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Dr. Odongo Kodongo

July, 2016

Declaration

I, Rachel Mindra Katoroogo, declare that this PhD thesis is my personal research work. It is submitted in fulfillment of the requirements for the award of Doctor of Philosophy in Management at Wits Business School, University of the Witwatersrand, Johannesburg, South Africa. I am certain that this work has not been replicated or submitted to any other institution. All the necessary academic authorization and consent required throughout this research has also been obtained.



July, 2016

_____ _____

Signature **Date**

Dedication

This thesis is dedicated to my parents, *Eng. & Mrs. Mindra,* who taught me the value of education and the meaning of a quality life, my amazing husband, *Herbert Katoroogo,* for being my stronghold and providing infinite support and my lovely children, *Jeremy* and *Jordan,* for enduring and being delightful while I was away and occupied.

Acknowledgement

I am in awe of you Oh Lord!

This thesis is a presentation of not only many long hours at the keyboard but a milestone of a remarkable learning journey. It is also a reflection of lessons learnt and a result of the support of a number of people and loved ones.

First and foremost I wish to thank my supervisors and mentors; Dr. Linda Tia Zuze and Dr. Odongo Kodongo. You believed in me and unreservedly provided timely support, encouraged and challenged me with new knowledge and taught me academic precision throughout this journey.

My sincere appreciation to The Principal of Makerere University Business School, Professor Waswa Balunywa and MUBS Management for the support especially funding my PhD through the ADB HEST Scholarship programme. Thank you for making a difference in my academic career through the exceptional staff development programme.

I would like to thank Professor Arthur Sserwanga for enlightening me in the first steps of research and Dr. Annet Nabatanzi for providing me the impetus to begin my PhD journey at WBS. Professor Musa Moya, thank you for all the statistical and overall support you provided me. The tireless effort and time you unreservedly created to make me comprehend what seemed almost impossible at the start is really appreciated.

In a distinct way, I would like to extend my gratitude to the exceptional staff at Wits Business School; Professor Louise Whitaker for the edifying research lessons which were very helpful in conceptualizing and understanding what the PhD was all about. Ms. Mmabatho Leew, the PhD Programme Manager, for the consistent advisory support you provided us. You paid special attention to the needs of each one of us- many times what we needed, especially at those moments when it was tough and confusing. Ms. Jennifer Croll, thank you for the meticulous job you did in proof reading my thesis. My appreciation to my classmates for working together and encouraging each other, especially Euphemia Akpomiemie.

A great support system is important to surviving and staying sane… Very special gratitude to my Dad and Mum, my amazing husband- *Herbert*; your knowledge together with your caring and supportive nature really sets you apart. My brothers and sister; Anthony, Ronald, Samuel and Nadia, my friends; Sauba, Christine and Peter, my in laws; Hellena and Herman thank you for being there when we needed you and my wonderful boys *Jeremy* and *Jordan,* you have been amazing.

My family in Johannesburg, South Africa, my sincere gratitude for being there for me and making me feel at home away from home; Drs. John and Stella Ajusi, Godfrey, Zanelle, Victor, Brenda and Fr. Dr. Mardai, S.J.

May the Almighty God richly bless each one of you in a very special way!

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List of Acronyms

AMOS	Analysis of Moments
AVE	Average Variance Explained
BoU	Bank of Uganda
CA	Capabilities Approach
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CGAP	Consultative Group to Assist the Poor
CMV	Common Methods Variance
EBA	Elimination by Alternatives
EFA	Exploratory Factor Analysis
EUT	Expected Utility Theory
FAI	Financial Access Index
FE	Financial Exclusion
FI	Financial Inclusion
FSE	Financial Self-efficacy
GFI	Goodness of Fit Index
HDI	Human Development Index
IFI	Index of Financial Inclusion/Incremental Fit Index
KMO	Kaiser- Meyer-Olkin
MCAR	Missing Completely at Random
MENA	Middleast and Northern Africa
MFIs	Microfinance Institutions
ML	Maximum Likelihood
NDPII	National Development Plan II
NNFI	Non- Normed Fit Index
NPA	National Planning Authority
OECD	Organization of Economic Co-operation and Development
OET	Optimal Expectation Theory
PC	Personal Capabilities
PCA	Principal Component Analysis
PCFI	Parsimony Comparative Fit Index
PNFI	Parsimony Normed Fit Index
RFSS	Rural Financial Services Strategy
RMSEA	Root Mean Square Error Approximation
SACCOS	Saving and Credit Co-operatives
SC	Societal Capabilities
SCT	Social Cognitive Theory
SEM	Structural Equation Modeling
SLT	Social Learning Theory
SPSS	Statistical Package for Social Scientists
SRMR	Standardized Root Mean Square Residual
SSA	Sub-Saharan Africa
TLI	Tucker Lewis Index
TPB	Theory of Planned Behavior
TV	Tolerance Value
UBOS	Uganda Bureau of Statistics
UNDP	United Nations Development Programme
VIF	Variance Inflation Factor

Abstract

Financial Inclusion seeks to overcome the friction that hinders markets from expanding access and use of formal financial products and services to a broad number of people. Despite the significant policy efforts and increased presence of formal financial service providers, the Ugandan economy still bears low levels of financial inclusion, especially in the rural areas. The finance growth and decision-behaviour theories substantiate the importance of understanding the psychological processes underlying observed individual judgments or choices regarding the use of formal financial services. Using Sen's capability approach, this study examined the personal and societal capabilities that influence financial inclusion of individual financial consumers. Specifically, this study assessed whether the capabilities an individual possessed actually contributed towards their likelihood of financial inclusion.

The hypothesized study relationships with financial inclusion were realized, following a positivist and quantitative approach using a cross sectional research design. The sample of 400 individuals to whom the survey questionnaire was delivered were drawn from two distinct regions of Central and Northern Uganda. The two regions represented varying levels of financial inclusion - high inclusion (urban Central) and low inclusion (rural Northern). In this study, besides the traditional regression models, structural equation modelling using Analysis of Moments (AMOS), were used to establish the causal relationships between the hypothesized study variables.

The study results revealed that financial self-efficacy, financial literacy, social networks and the interaction of the personal and societal capabilities significantly contributed to an individual's financial inclusion across the two regions. The results further revealed that the personal and societal capabilities independently, and when combined, contribute towards an individual's financial self-efficacy. Through an assessment of the mediation effect, this study demonstrated how financial self-efficacy can boost individuals to confidently undertake financial tasks and decisions and consequently, financial inclusion in relation to their capabilities, respectively. The results provide support to Sen's capability theory as a tool for explaining financial inclusion from a demand side perspective within the Ugandan context.

Chapter One

Introduction

Human beings are capable of articulation and imagination- they can assess their present and hope for a different future… Sen, (2005)

1.1 Background of the study

According to development theory, access to and use of financial services, both at an individual and firm level, is important for overcoming income inequality, deprivation within the formal markets and achieving broader economic growth (Comparato, 2015; Ojah, 2013; Pandey & Raman, 2012). In the same regard, financial growth theories advocate the kind of development that generates a prolific environment for growth among individuals and firms through both a 'supply leading' and 'demand following' effect (Ojah & Kodongo, 2014; World Bank, 2014).

Financial inclusion (hereafter FI), is multi-dimensional concept with nuanced components; access, usage and quality that are relevant for the purposeful expansion of financial products and services, such as savings, credit, insurance and remittances to a broad number of people. It is an intervention strategy that seeks to overcome the type of market friction that hinders the markets from operating in favour of marginalized groups (Aduda & Kalunda, 2012). While the estimate of access or outreach provided by the supply side represented by the providers of financial services is important, it is also helpful to focus on the demand side attributes of the consumer to fulfill a more balanced picture towards achieving FI. For a long time, the physical infrastructural expansion of financial services has been the focus of policy, financial institutions and empirical studies, giving limited attention to the influence the consumer attributes or demand side factors towards FI. The adoption, permanence and relevance of the financial services provided by

demand side studies represent the usage and quality dimensions which are desirable in assessing the individuals' willingness to integrate into the formal financial system. In this regard, simply expanding existing financial services is unlikely to increase formal financial services especially among the rural areas like Northern Uganda. Ensuring usage and relevance of such financial products and services provided by focusing on the role of individual attributes needs to be considered by the financial institutions and policy makers respectively to achieve more effective FI Dupas, Karlan, & Robinson, (2013).

This study therefore brings on board an alternative assessment using demand side factors that have received little attention despite their potential importance in boosting FI from a personal and societal perspective. This is because individuals' inability to access formal financial services has been identified as a key barrier for socio-economic development of developing economies such as Uganda (Ardic, Heimann, & Mylenko, 2011b; Demirguc-Kunt & Klapper, 2012a; Johnson & Nino-Zarazua, 2011; Ssonko, 2010).

Contextual perspective

In Uganda, despite the formal markets achieving admirable outreach, partly due to the innovative and proactive regulative system adjustments that allow for technological innovations, financial exclusion (FE) is still persistent. Further, the resilience and improvement in the formal financial system is due to the salient competitive pressure embarked on by the informal institutions, which are willing to provide financial services to the low income segments (Akudugu, 2013). FE is still predominant, especially in the rural areas, where penetration of bank branches, auto-teller machines (ATMs) and bank agents providing the formal financial products and services, are

unavailable. This ironically leaves the rural poor segment no option but to rely on informal services which are often too costly, exploitative in nature, and at times, lack a financial resource base sufficient for all at a given time (Akudugu, 2013; Burlando & Canidio, 2015; Dupas, 2013; Dupas, Karlan, & Robinson, 2013).

Globally 2.5 billion people are financially excluded; approximately 80% in sub-Saharan Africa as compared to 8% in the high income Organization of Economic Co-operation and Development (OECD) countries, and in Uganda, 80% have no access to mutually exclusive formal bank financial services (Chaia et al., 2013; Demirgüç-Kunt & Klapper, 2012; Johnson & Nino-Zarazua, 2011); World Bank, 2014). The depth of Uganda's financial system is relatively low compared to the average financial depth of low income countries within Sub-Saharan Africa. The breadth of the formal banking system is comparatively low with 2.4 commercial bank branches per 100,000 adults (Demirguc-Kunt & Klapper, 2012b; BoU, 2013). The Finscope (2013) study indicates a significant improvement in overall FI in Uganda to 70%, indicting a two-fold percentage increase from 28% in 2009. This significant increase was mainly driven by the informal and non-bank formal financial services that include mainly mobile money which comprises remittance transactions. However, access to formal banking services still remains very low at only 20%, predominately in the urban locations indicating high levels of exclusion from the formal financial system (Finscope, 2013).

Additionally, the results indicated that wealthier individuals in urban locations were five times more likely to access and actively use formal financial products and services compared to individuals in the poorer quintile, that is, 42% compared to 7% respectively. This shows that actually formal banking increases as individuals move up in welfare distribution. This implies that

incentives to individuals' demand for financial services does not only come from economic factors, for example, income, employment, physical infrastructure, but also personal and socio-economic attributes that propel involuntary exclusion (Claessens, 2006; Clamara, Peña, & Tuesta, 2014; Martínez, Hidalgo, & Tuesta, 2013).

Theoretical perspective

The main economic rationale of increasing FI is to ensure that the excluded groups become part of the formal banking system by providing safe and efficient avenues for saving, credit, insurance and remittances. Additionally, FI also helps in preventing exploitative informal financial markets from flourishing at the expense of the vulnerable poor and the financially illiterate. Pande and Burgess (2005) argued that at a micro level, branch network in often excluded rural locations significantly reduced rural poverty through increased savings mobilization and loan distributions by banks that perhaps improve their welfare through the resources allocation process. Similarly, at a macro level, increasing the depth of financial services to the lower level segment through expansion of individual access to formal financial services may contribute to lower income inequality (Cull, Demirgüç-Kunt, & Morduch, 2013; Demirguc-Kunt & Klapper, 2012b; Ehrbeck, Pickens, & Tarazi, 2012; Kasekende & Brownbridge, 2011).

According to Kempson and Whyley (1999), there is clear congruity among researchers that many people across the globe are excluded from mainstream banking, but the reasons for exclusion differ from one individual to another. In addition, studies undertaken in SSA have mainly focused on defining FI as mere ownership of a bank account, disregarding the focus of other financial products and their actual usage. While this is a very important component of FI, the use of

insurance, credit, payments are also very vital for determining a holistic picture of FI at both individual and macro level. It is particularly important to reach out to populations in the informal markets because all households, no matter how poor they may be, are said to engage in some form(s) of economic activity, as well as financial strategies to build assets, plan for social events, emergencies and meet their daily transactions to survive (Cohen & Sebstad, 2005). We actually find that the majority engage in a number of non-financial means of saving, for instance, accumulation of livestock, jewelry, staple foods - in Northern Uganda, mainly millet, which are believed to have spiritual and cultural significance (Stuart, 2000).

Additionally, rural households engage in informal financial relationships among themselves which may not be guaranteed as safe and reliable. Schindler (2010) argued that there is a need to integrate the informal and formal financial markets because the volume of informal activity is far greater than that of organised financial institutions. Perhaps this integration can inherently improve the involvement and consequently, wellbeing of such rural segments by providing them a wider array of efficient, safe and reliable financial services to improve their financial strategies and wellbeing at large. However, this integration cannot be completely done without examining the behavioural capabilities that individuals possess which enable not only their transition from informal to formal systems but also to actually confidently appreciate the formal institutional models. In order to gauge whether the formal financial institutions are effective vehicles of FI, it is thus important to understand individual attributes or capabilities of the different segments. This is within the diversity of an economy like Uganda that may enable them to embrace the financial products and services they purportedly need to use to improve their welfare and enjoy the benefits that emanate from being financially included.

The decision-behaviour theories and empirical studies that relate to individuals' decisions towards choice of financial products and services have drifted towards increasing emphasis on understanding the psychological processes underlying observed judgments or choices (Allen, Demirguc-Kunt, Klapper, & Peria, 2012; Clamara et al., 2014; Demirguc-Kunt & Klapper, 2012b; Martínez et al., 2013); World Bank, 2014). This perception was fundamental in informing the study. In this regard, the field of behavioural finance that is described as an interaction of psychology with the financial actions and performance is still developing (Shefrin, 2002; Statman, 1995). Therefore, this study developed a more diverse and cohesive explanation of decision making among financial consumers from the personal and societal capabilities perspective. Additionally, the study advanced a more predictive and normative approach which explains the financial consumer's personal capabilities that are fundamental in determining choice, decision making and specifically financial behaviour in the FI context.

The critical point of departure is conceptualizing FI, based on the individual financial consumer capabilities as predictors of FI among both the high income urban dwellers and low income rural segments in a developing country context. It is argued that although the financial consumer as a medium for visualizing FI is important, the supply side is also fundamental. According to Kumar and Mohanty (2011); Mehrotra, Puhazhendhi, Nair, & Sahoo, (2009), effective FI can be achieved from both perspectives. This study focused on the demand side perspective with the purpose of examining the influence of an individual financial consumer's personal and societal capabilities (PC, SC), for instance, financial attitude, financial literacy (FL), financial self-efficacy (FSE), influence of social networks and subjective norms on FI across two distinct regions in Uganda.

Policy Responses towards Financial Inclusion in Uganda

Following the previous discussion, it is clear that there is a large unmet demand for and limited supply of formal financial services in Uganda, despite the efforts and initiatives by the financial service providers, government and donors/civil society towards complete financial inclusion.

Following such inadequacies, initiatives by financial institutions towards improving access to financial services has been focused on designing financial products that suit different income segments, as well as increasing the branch network across different regions. Specifically, priority is to promote the use of basic saving and credit services among the rural poor, women and youth who are vulnerable to financial exclusion. Additionally, financial institutions are trying to find strategies of engaging in the utilization of the commonly used community based saving and credit mechanisms to help the rural segments integrate into the formal financial system.

In addition to such efforts, as stipulated in the National Development Plan (NDPII, 2015/16-2019/20) and the National Planning Authority's Uganda Vision 2020, the Government of Uganda's initiatives have embarked on financial deepening to improve better access to financial services, especially within the rural areas that are predominately excluded from the formal financial system due to a lack of financial service infrastructure and financial service providers. This is an area of focus and interest by the government since it has been neglected, especially by the service providers who perceived it as a risky investment.

Firstly, the Government of Uganda, through the Department of Microfinance established the Rural Financial Services Strategy (RFSS) and rural agricultural finance policies which are intended to establish and/or improve effectiveness of the commonly used saving and credit groups such

as SACCOs and VSLAs. This effort is mainly to accelerate and support the linkage and access to formal financial institutions as well as the provision of better access to agricultural financing (GOU, 2013).

Secondly, the Government financial inclusion initiative by the Bank of Uganda is playing a significant role towards improving access to formal financial services by incorporating initiatives that target particularly financial deepening as well as the comprehension and confidence of the financial consumer to freely participate in the financial system. These include; increasing the level of financial literacy, financial consumer protection, supporting financial institutions innovative technology to increase access to financial services across all income segments in Uganda and improving demand and supply side financial services data and measurement (BoU, 2013). The Bank of Uganda actively took on these initiatives after its commitment to the Maya Declaration to incorporate at least 70% of Uganda's adult population by 2020 into the formal financial system to reduce financial exclusion and its effects (AFI, 2015).

Finally, in terms of donor or civil society harmonization, the Department for International Development (DFID) funded the 'Making markets work for the poor' and the 'Money for the Poor (M4P)' approaches, implemented by KPMG which started in April 2014 and ends March 2016, towards a deeper, broader and more inclusive financial system, especially in the chronically excluded Northern and Eastern regions of Uganda. These initiatives provide further support to the Government of Uganda social assistance grants for empowerment programmes.

Therefore, this study provides an important contribution towards supporting the government and banking efforts by providing an assessment of the relevance of behavioural determinants,

such as individual financial consumer capabilities in influencing the access and use of formal financial services from a demand side perspective.

1.2 Knowledge gap

Despite the large number of theoretical and empirical works documenting a strong positive relationship between economic growth and financial development, Clamara et al., (2014) suggest that, in order to gain a better understanding of the context, there is need to look beyond this relationship. This is because of the several non–financial factors that also influence this relationship. Studies undertaken in SSA have articulated FI as merely account ownership. Yet FI goes beyond that to include credit, insurance and payments facilities. Also the non-use of financial products and services does not necessarily mean lack of access to these facilities. Some people can actually have affordable access to financial services but may choose not to use them (Demirguc-Kunt, Klapper, Singer, & Van Oudheusden, 2015).

To advance FI, current efforts should aim towards creating an enabling environment and evening out the regulatory framework, improving product design and outreach to include the low income rural segments, through technological supply. These innovations supposedly overcome cost and physical barriers to access, therefore the need to investigate the demand side using client research (Consultative Group to Assist the Poor (CGAP), 2013a). Although a number of studies on FI have focused largely on the supply side, they have predominantly established a link towards financial development (Anzoategui, Demirgüç-Kunt, & Martínez Pería, 2014; Ardic et al., 2011b; Ashraf, Karlan, & Yin, 2006; Thorsten Beck & Demirgüç-Kunt, 2008; Beck, Demirguc-Kunt, & Martinez Peria, 2008; Cull et al., 2013; Demirgüç-Kunt & Klapper, 2012; Dev, 2006; Djankov, McLiesh, & Shleifer, 2007; Honohan & Beck, 2007)

In a recent report, there are growing efforts towards analyzing the potential needs of the consumer as the starting point for product development. *"…..A deeper understanding of the needs, behavior and preferences of low income people will ensure a more relevant and responsible delivery and use of financial services…."* (CGAP, 2013b, p.1.). This implies that to achieve successful product development, it is critical to understand the potential consumer *vis a vis* their needs. It is further argued that both demand and supply side factors drive inclusive growth in agreement with literature and theory. Therefore the effect of supply side reforms on the demand side needs to be expanded (Beck, Torre, & Augusto, 2007). Despite the contribution supply side studies have made towards explaining FI, they are not flawless; a) they measure the financial depth in terms of how much finance rather than in terms of how many users and what influences use of the financial services; b) they cover availability and accessibility elements to a large extent and focus less on usage which limits the actual picture of FI; c) they use aggregate banking data which is purportedly partial in nature with shortcomings like failure to differentiate between individuals and firms accounts, individuals with multiple accounts, timeless loan accounts, some people have multiple accounts and d) do not take into consideration access to the entire range of financial services besides the bank accounts and credit (Thorsten Beck, Demirgüç-Kunt, & Honohan, 2009). Therefore the individual level assessment gives an alternative and/or complimentary perspective of FI as well as addressing some of the shortcomings of the inconsistent supply side studies. The supply side which consists of the formal financial institutions has an important role to play in this effort, not as a social obligation but as a pure business proposition in order to get a balanced financial inclusion perspective.

Specifically, while empirical research on FI is growing, it is still deficient in terms of empirical evidence, especially within a developing country context that explains FI using individual capabilities from a demand side perspective. Additionally, literature reveals a critical lack of integration of theoretical perspectives that explain the phenomenon (Gibbs, 1998). Although the influence of financial consumer attributes and financial behaviour are supported in literature, empirical studies examining and/or integrating the influence of personal and societal attributes are still few (Clamara et al., 2014; Martínez et al., 2013; Muradoglu & Harvey, 2012; Norvilitis et al., 2006). The majority of the studies use a single theoretical perspective which would perhaps limit or hinder further theory development. Interactive (hybrid) theoretical models yield a better analysis by allowing variable interaction and verification of the relationship between variables in predicting behavioural change (Guagnano, Stern, & Dietz, 1995). Therefore articulating FI using a combination of capabilities would contribute to theory building and understanding distinct societies in Uganda.

Furthermore, methodological gaps still exist in the FI space despite the research attention FI has attracted in the past two decades. This is in spite of pioneering studies that have been conducted in developed economies where FE is particularly not a critical problem (Beck et al., 2007; Lea, Webley, & Levine, 1993; Lea, Webley, & Walker, 1995; Leyshon & Thrift, 1994, 1995).

Additionally, very few studies have been conducted in developing economies, especially in Sub-Saharan Africa. Some of these developing countries with some empirical evidence are in Asia, specifically India, and Latin America. There was need to conduct more research, particularly in developing countries to balance geographical specificity of findings. Further review indicates the use of large cross country samples based on bank data or small samples based on specific regions.

This may inhibit the generation of sufficient causal explanations and testing of hypotheses and drawing replicable conclusions. Therefore the study attempted to cover this knowledge research gap.

1.3 Research Problem Statement

Despite the significant efforts and innovations in the financial sector to improve financial inclusion (FI) over the years, the Ugandan economy still bears the challenge of low levels of FI. 80% of Uganda's adult population, with the majority 60% living in the rural areas, have no access to formal bank financial services (Finscope, 2013; Kasekende & Brownbridge, 2011; Ssonko, 2010). In the same regard, Allen et al., (2012); Demirguc-Kunt & Klapper, (2012b); Sarma & Pais, (2011), in their studies, found that Uganda's Index of Financial Inclusion (IFI) is only 0.21, the lowest among 49 developing countries, implying high levels of FE. The financially excluded populations cope with using complicated methods of managing their money. They conveniently use costly and exploitative informal services because they are constrained from participating in the formal sector due to supply (Beck et al., 2008; Kempson & Whyley, 1999) and demand (Allen et al., 2012; Demirguc-Kunt & Klapper, 2012b; Honohan, 2004; Martínez et al., 2013; Rathod & Arelli, 2013) barriers.

Access to financial services (that is, savings, credit insurance and payment facilities) enables the transformation of the lives of the low income segments in developing countries like Uganda. However, as Sarma and Pais (2011) observed, for an individual to realize the benefits of financial services, the products should be easily accessible, of quality, and relevant to individual needs. Access and usage of formal financial services are critical to enhancing individual consumption and

investment and insurance against uncertainties and adversities that the low income segments, for instance, ordinarily experience (King, 2013).

In spite of the importance attached to the need for FI, there is remarkably scanty literature about FI in Uganda. Empirical literature on FI in Uganda mainly focuses on the supply side (Aduda & Kalunda, 2012; Allen, Carletti, Cull, Senbet, & Valenzuela, 2014; Hannig, 2011; Johnson & Nino-Zarazua, 2011; Kendall, Mylenko, & Ponce, 2010; Mpuga, 2010; Sarma & Pais, 2008, 2011) and has neglected demand side factors such as individual consumer capabilities, (financial self-efficacy, financial attitude, financial literacy) and association to social networks and subjective norms which may have a significant influence on financial behaviour and consequently FI. The literature on financial consumer decision-making in the purchase and use of financial services generally suffers from a lack of temporal attention and perspective (Gibbs, 1998). Yet empirical studies elsewhere Allen et al., (2012); Clamara et al., (2014); Demirguc-Kunt & Klapper, (2012b); Honohan, (2004); Martínez et al., (2013); Rathod & Arelli, (2013) have shown that personal and societal characteristics used independently have an important influence on individual financial behaviour and consequently FI. This study therefore sought to examine the role of demand side factors (personal and societal capabilities) on FI in Uganda.

1.4 Purpose of the study

The purpose of the study was to examine financial inclusion among individuals and develop an alternative working model that provides an enriched understanding and explanation of the study phenomena from a demand side perspective. Specifically, the associations between personal capabilities, societal capabilities, and financial self-efficacy among selected individuals in the

Central and Northern regions of Uganda were tested. The research was guided by the following research questions:

a) How do financial inclusion, financial self-efficacy, personal capabilities and societal capabilities compare across the two regions?
b) To what extent does financial self-efficacy influence financial inclusion?
c) To what extent do personal capabilities (financial attitude, financial literacy) influence financial inclusion?
d) To what extent do societal capabilities (social networks, subjective norms) influence financial inclusion?
e) To what extent do personal capabilities influence financial self-efficacy?
f) To what extent do societal capabilities influence financial self-efficacy?
g) To what extent does the interaction of personal capabilities and societal capabilities influence financial inclusion?
h) To what extent does the interaction of personal capabilities and societal capabilities influence financial self-efficacy?
I) To what extent does financial self-efficacy mediate the relationship between personal capabilities and societal capabilities and financial inclusion?

1.5 Delimitation of the study

Contextual scope

This study was contextualized within the field of behavioural finance which is a field that is intended to improve the understanding of financial behaviour while incorporating aspects of human nature in finance (Ritter, 2003; Shefrin, 2002). This incorporates issues regarding how

people actually think and behave, given specific attributes and available resources within a given context. Further, the study investigated personal capabilities in terms of financial literacy and financial attitude and societal capabilities in terms of social networks and subjective norms as predictor variables. These capabilities have been highlighted in building individuals' financial behavior and hence FI. This study also examined financial self-efficacy as a mediating variable in terms of the confidence an individual possesses in one's ability to use formal financial services. The study conceptualized FI focusing on the demand side epitomized by the individual user of financial services as the criterion variable. FI was examined in terms of access, usage and quality of, specifically, formal financial products and services.

Geographical and period scope

The population consisted of individuals in selected districts in the Central and Northern regions of Uganda. In relation to the study, the central region being highly urbanized has the highest level of formal FI among all the regions in Uganda, compared to Northern Uganda, which has the highest rural population and high levels of formal banking exclusion as presented in *Appendix 3c* (Finscope, 2013). Additionally, a cross sectional survey design was adopted where data was collected in the period May-August, 2015.

1.6 Contribution to Knowledge

The study's contribution to knowledge is embedded in the development of a theoretical model that explains FI in Uganda from a demand side perspective. The conceptual framework that provided direction for the study was developed from underlying literature. The study has extended knowledge on the effect of personal and societal capabilities, financial self-efficacy on FI of individuals across two distinct regions of Uganda. In addition, the study will contribute to

the body of knowledge through the mediating role of financial self-efficacy in the relationship between personal capabilities (financial attitude, financial literacy), societal capabilities (social networks, subjective norms) and FI of low income individuals in Uganda.

The theoretical contribution is mainly focused on the choice-decision phenomena blended with financial behaviour which cannot be understood without deeply understanding the financial consumer and not only information processing assumed by Expected Utility Theory (EUT) and non-EUT theories. Further, the theoretical and empirical foundation laid by previous studies using both economic and financial behavioural models enable a critical understanding of the concepts of choice, decision making, financial behaviour and consequently, FI in a developing country context. This further formalized the argument on decision making to a more dynamic financial system since the majority of studies have been done within the stock market space.

This study enriched the behavioural finance discourse by adopting behavioural theories like the social cognitive theory, theory of planned behaviour, social learning theory and social networks theory to compliment the finance and economic models already used. This developed a better theoretical and empirical explanation of decision making with reference to financial inclusion among distinct income segments in the Ugandan context. This study therefore sought to overcome the limited theoretical foundations and rather addressed the limitations of the explanatory nature of previous studies on FI from a demand side perspective. This study examined the extent to which personal and societal capabilities may stimulate an individual's financial behaviour, hence the use of formal financial products, to advance financial inclusion. To achieve these objectives, the study used the capability approach to articulate an individual's

behavioural attributes that are valuable in explaining financial behaviour and FI from a demand side perspective.

Methodologically, the study aimed at overcoming the methodological weaknesses in previous studies, especially relating to use of either small samples or country level aggregated bank data. Additionally, these studies have focused on measuring FI using only one or two dimensions of FI in a few cases, specifically the access dimension of FI. This study addresses the existing limitations of cross-financial services analysis and interdisciplinary theoretical triangulation (Shefrin, 2002; Statman, 1995). The study has generally developed a better understanding of FI and generalization of findings by conducting a large survey across two distinct population segments in a developing country context, focusing on the three measurement dimensions of FI - access, usage and quality.

1.7 Significance of the Study

The study intended to develop a more predictive and normative approach which explains the financial consumer's personal capabilities that are fundamental in determining choice, decision making and, specifically, financial behaviour in the FI context.

The study envisioned providing guidance to formal financial service providers within a developing country context using the demand side insights derived. This perhaps provided possible strategies to enhance their use of formal financial services.

FI is an important step towards poverty eradication among the low income rural segments and consequently inclusive development among developing economies. 4rThis is only possible when

an economy utilizes a "*balanced mediation effect*" between the demand-side and supply-side; that is the financial service providers as well as the financial consumer.

This study provided a relevant platform for government bodies and FI development organizations to design relevant programmes to improve and stimulate the use of formal financial services among the low income segments, especially within the rural areas, who are often excluded from the formal financial system.

Generally, for policy makers, this study intended to enhance efforts in planning and setting more flexible policies that may promote the implementation, expansion, and use of financial services in order to reach out to larger number of users, especially in the rural areas. Building data sets that benchmark countries would help focus the attention of policymakers and allow them to track and evaluate efforts to broaden access and use of financial services.

The managers of the formal financial institutions may also use the findings from this study to develop more appropriate strategies to increase the scope of financial services and product development, especially for the low income segments and rural population often financially excluded.

1.8 Structure of the Thesis

This introduction chapter provided a background to the study, research problem and knowledge gap examined in this thesis, the purpose, the main research questions as well as the scope of investigation.

Chapter two reviews the literature providing the theoretical and empirical foundations of FI and the hypotheses developed for the study. The literature review provides a summary of relevant

theoretical, empirical views, methodologies and findings on FI and factors that supposedly influence it.

Chapter three presents the philosophical foundation, design, methods used to execute the study, proposed data analysis, measurement models as well as the anticipated study limitations and research plan.

Chapter four contains a presentation of the study findings and Chapter five further presents the robust test study findings using structural equation modeling.

Chapter six provides an in-depth discussion of the study findings in line with the research questions and hypotheses.

Chapter seven provides the final conclusions, theoretical, methodological, policy and practical implications and finally limitations of the study and directions for future research.

CHAPTER TWO

Literature Review

2.1 Introduction

This section presents existing knowledge on the topic of this study, from previous research. The review identifies, from the extant literature, important themes, concepts, variables, and links between and among the variables, which consequently generated this study's hypotheses.

2.2 Theoretical Background/Orientation

Decision making is important and ongoing, sometimes knowingly or unknowingly at individual, organizational and policy levels (Kahneman & Tversky, 1984). The study is undertaken within the microeconomic perspective discussing decision making at the individual level. Decision making is part of a continuous, interactive process that individuals, organizations and policy makers use to cope with the dynamic environment in which they operate (Hogarth, 1981). The foundations of economics and, consequently, the various branches of economics (financial economics, behavioural economics, and behavioural finance, among others) are based on expected utility maximization assumptions which form the foundation of this study.

2.2.1 The Expected Utility Theories

The Expected Utility Theory (EUT), also known as the rational theory and standard economic theory, was developed by Bernoulli in 1938 under a price-gamble puzzle. The EUT identifies the choices individuals have to undertake among risky options by comparing the expected utility values attached to each option through weighted sums of the utility values of each anticipated effect (Neumann & Morgenstern, 1947; Roger, 2011; Schoemaker, 1982). The key assumption of EUT is that as individuals make choices and decisions, they only rely on probability values, thereby

maximizing their expected monetary values (Dawes & Kagan, 1988; Hastie & Dawes, 2010). Availability of information is assumed critical for effective decision making (Dawes & Kagan, 1988; Roger, 2011). Arrow (1982) contested that the rational theory of choice assumes description invariance while (Hammond, 1988) argued that continuous consequentialist behaviour among individuals must maximize expected utility. These propositions are critiqued in the subsequent discussion.

EUT has been viewed as a positive theory of individual behaviour (Neumann & Morgenstern, 1944). The theory is simple yet powerful with robust analytical results of expected utility generally applicable in different contexts (Kahneman & Tversky, 1984; Tversky & Kahneman, 1992). EUT has also significantly contributed as the foundation of a vast range of economic and psychology theories that explain choice and decision making (Hausman, 1992; Hogarth, 1981; Mongin & d'Aspremont, 1998; Rabin, 1993; Schoemaker, 1982; Starmer, 2000; Tversky & Kahneman, 1992; Tversky, Sattath, & Slovic, 1988). Despite the significance of EUT towards the choice and decision making research across disciplines, it has been extensively criticized.

The criticism revolves around several arguments, for instance, inadequate descriptions of individual choice (Kahneman & Tversky, 1979; Machina, 1989; Tversky & Kahneman, 1986), as well as ambiguity of low probabilities affecting decisions (Tversky & Kahneman, 1992). A number of empirical studies (Camerer & Kunreuther, 1989; Fishburn, 1988; Fishburn, 2004; Kahneman & Tversky, 1979; Machina, 1987, 1989; Tversky & Kahneman, 1986) argued that as individuals make their choices and decisions based on irrational thinking and evaluation of risk and decision in terms of expected utility, the development of non-expected utility models is inevitable. This is a

clear contradiction and violation of the EU assumptions of rationality and linearity in decision making which the study challenges as well.

EUT has subsequently been extended with psychology and behavioural financial economics models perceived as more realistic frames of reference (Camerer & Kunreuther, 1989; Fishburn, 1988; Fishburn, 2004; Machina, 1987, 1989). This study falls within the financial inclusion framework and contends that individuals' decision making is determined by other factors besides the standard economic desire to maximize expected utility. Personal and societal capabilities, for instance, like financial attitude, financial self-efficacy, financial literacy, social networks and subjective norms are important in framing the way choices are made and financial behaviour is shaped. These capabilities are perceived as fundamental to decision making, influencing financial behaviour and consequently FI. This presents a contrary perspective from the "*static*" assumptions of EUT of invariance and linearity of individual options that determine decision making. A case in point is O'Donoghue and Rabin (2001a)'s study which found that intuition and reasoning led to optimal choice. They described an individual as rational, considering a decision maker possesses a menu of options to choose from, given the awareness for self-control in the process. This confirms the notion that indeed other factors are fundamental in decision making, financial behaviour and consequently FI.

2.2.2 Non-Expected Utility Theories

Due to the shortcoming of the EUT, non-expected utility decision models, explaining probabilistic judgment and reasoning have consequently developed. Prospect theory, for instance, which has a psychology foundation of probability weighting, has been used to explain choice and decision

making. Prospect theory developed by Kahneman and Tversky in 1979 emphasized diminishing sensitivity (Tversky & Kahneman, 1992), affective reactions that influence outcomes of uncertain choices (Rottenstreich & Hsee, 2001) and salience of available preferences, for example, financial products and services (Bordalo, Gennaioli, & Shleifer, 2012). The prospect theory explains the fact that individuals generally will base their choices especially financial decisions, on the perceived gains and losses they anticipate from the given options. This is fundamentally part of the decision making process among all individuals at various levels (Tversky & Kahneman, 1976;1992). This is fundamentally part of the decision making process among all individuals at various levels.

Conversely Corbin and Marley (1974), using their elimination by alternatives model (EBA), found that EBA identifies specified criteria of choice, such as preference, loudness or size, among others, depending on a particular context. This then enables a decision maker to either accept or reject an element or prospect depending on the probability proportion to the weights of each prospect.

Prospect theory is observed to depart from the tradition that assumes the rationality of economic agents, the basis of the EUT. The ideas contended by prospect theory have been integrated in a considerable body of theoretical work into more traditional models of economic behaviour. Despite this significant contribution, prospect theory has its limitations (Thaler & Shefrin, 1981): a) it is difficult to apply – this raises questions as to whether its predictions retain their accuracy

in the real world, especially where people have vast decision making experience Barberis, 2012); b) the extent to which it explains willingness to pay for an anticipated outcome is limited, especially in the insurance context (Sydnor, 2010); c) Prospect theory has not been used outside the stock market space which may question the extent to which it is robust in terms of applicability.

In addition to the prospect theory, other non-expected and behavioural models have mushroomed, such as the Optimal Expectation Theory (OET) developed by Brunnermeier and Pedersen in 2005 and the Von Neumann-Morgenstern utility theory of games and economic behaviour (Neumann & Morgenstern, 1944). OET proposed that the attractiveness of the best outcome is what determines individual choice, hence the basis of decision making (Brunnermeier, Gollier, & Parker, 2007). Issues of linear decision trails, framing effects and applying linear decision weights have consistently been argued for in the non-expected utility models. However this may not be viable in certain circumstances. Choices are not necessarily rational in all decision problems. This is because there are other factors that could influence an individual to make decisions given various options or preferences. These may not be part of the anticipated "order of preferences" (Kahneman & Tversky, 1979; Kahneman & Tversky, 1984; Tversky & Kahneman, 1986). This cannot be determined solely in a linear manner as previously indicated by EUT and even non-expected utility models which are discussed in the next section. Despite the considerable contribution the models have made in the economics, psychology and finance research, they have displayed certain limitations, for instance, incompleteness in explaining individual decision making.

The non-expected utility theories do not explain the extent to which choices are approximate or what actually defines the completeness of choice and decision making even in the use of a range of financial services available from which to choose. As argued by the prospect theory, the OET and the theory of games and behaviour among others, heuristic procedures are not the only determinant of decision making. For instance, prospect theory assumes that the decision maker assesses the value of each outcome and attaches probability values which he/she then uses to make choices accordingly. Tversky (1969) argued that when individuals are faced with a complex problem, they are compelled to employ a variety of heuristic procedures in order to simplify and evaluate anticipated outcomes. Individuals may also use computational "shortcuts", "editing operations" or discarding certain options intuitively which is in line with the findings of O'Donoghue and Rabin (2001b). Conversely Ritter (2003); Benartzi and Thaler (2007) argued that, despite the fact that heuristics simplify decision making, it is imperative to note that sometimes they lead to biases, especially when prospects change which may be true, especially in a continuous and natural environment.

Despite the role of heuristics in decision making, contrary to the propositions, decision makers may not have the ability in terms of skills, knowledge expertise and attitude to indulge in an evaluation of prospects. Individuals may require financial literacy sessions, financial self-efficacy, positive financial attitude and societal consent, among other types of support, to make financial choices from an informed perspective. It is imperative to note that a cocktail of personal and societal capabilities may influence not only the evaluation process, but also the consequent decision and financial behaviour undertaken by an individual with a decision or choice problem, hence realizing FI. This is certainly in line with Bernoulli (1738)'s EUT which argued that choice

and decision making are only complete when a rational decision maker has sufficient information. This information could be through various sources. Sometimes people are rational intentionally, but lack the mental capacity to abide by the EUT (Simon, 1955) and also the non-expected utility assumptions.

There is an evident transition from the standard economics and behavioural science assumption that choice probability and the utility values attached to each proposed option and anticipated outcome are the basis of individual decision making (Kahneman, 2011; Simon, 1959). In recent studies, choice and decision making are being explained within the boundaries of economics and psychology (Simon, 1959, 1979). This has been a point of departure and/or inclusiveness for behavioural finance.

2.2.3 Behavioural Finance

Behavioural finance, as a branch of behavioural and financial economics, has developed due to the shortcomings in the prior theoretical and empirical literature. Behavioural finance is intended to further the understanding of financial behaviour by incorporating aspects of human nature into financial and economic models that were not extensively discussed in earlier models (Barberis, 2012; Olsen, 1998; Shefrin, 2002; Thaler & Shefrin, 1981). Ritter (2003) contends that behavioural finance drops the traditional maximization of expected utility among rational investors within efficient markets. It instead focuses on the way individuals think despite the limits to arbitrage when markets are seemingly inefficient. This argument is divergent from the traditional assumption of expected utility maximization which considers only efficient and linear situations. This is unrealistic and does not effectively define the financial system and financial behaviour in this particular context. Behavioural finance allows for more realistic thinking which

typically defines decision makers (Ricciardi & Simon, 2000). Ricciardi and Simon (2000) also argued that behavioural finance attempts to explain the what, the why and the how of finance and investment from a human perspective. It integrates many different schools of thought, drawing from psychology, marketing, finance, technology, and management, among others. In addition, Olsen (1998) contends that behavioural finance is a new paradigm that enriches economic and standard finance theory by incorporating the aspects of human nature in finance. The majority of studies (Bali, Cakici, & Whitelaw, 2011; Barberis & Thaler, 2003; Benartzi & Thaler, 2007; Conrad, Dittmar, & Hameed, 2011; De Giorgi, Hens, & Levy, 2011; Loughran & Ritter, 2002; Ritter, 2003; Shefrin, 2002) are up until now, confined within the stock market space, hence limiting their scope of applicability. Slovic, Fischhoff, and Lichtenstein (1977) pointed out that behavioural decision theory incorporates the normative and descriptive dimensions of decision making in addition to rational choice. This is an improvement to the EUT and non-expected utility maximizing models that have separately applied descriptive and normative approaches to decision making.

The decision-behaviour studies have drifted towards increasing emphasis on understanding the psychological processes underlying observed judgments or choices (Payne, Braunstein, & Carroll, 1978). This perspective was integral in informing this study focusing on the financial consumer's choice and decision to use financial products and services hence achieving FI. The field of behavioural finance that is described as an interaction of psychology with the financial actions and performance is still developing and is being refined (Shefrin, 2002; Statman, 1995). This study developed a more predictive and normative approach which explains the financial consumer's

personal and societal capabilities that are fundamental in determining choice, decision making and, specifically, financial behaviour in the financial inclusion context.

2.3 Conceptualization and Definition of Financial Inclusion

As stated earlier, financial inclusion (FI), the access and use of financial products and services, has become a priority to policy makers globally in recent years (Ardic et al., 2011b; Demirguc-Kunt & Klapper, 2012a; AFI, 2012). FI or exclusion also considered in the absence of FI was initially applied in the early 1990s to draw attention to the limited access to formal financial services (Kempson & Whyley, 1999; Leyshon & Thrift, 1994, 1995). "FI is an intervention strategy that seeks to overcome the market friction hindering the markets from operating in favour of the poor and underprivileged," (Aduda & Kalunda, 2012, p. 96).

FI can be operationalised in different contexts among individuals, households, firms and at country level. In this study, the discussion is limited to the individual level. At the individual level, focus is on analyzing behaviour and level of usage of financial services among households relative to the level of provision or supply of financial services by the financial intermediaries. FE extends beyond physical access caused by the inadequacies of the financial service providers but also includes the users of the financial services.

Financial inclusion plays a critical role in economic development by facilitating economic growth and reducing inequality (Gupte, Venkataramani, & Gupta, 2012). Therefore an all-inclusive financial system is likely to fulfill this role and benefit the excluded segments. This is only possible when an economy utilizes a "balanced mediation effect" between the demand-side and supply-

side, that is, the financial service providers as well as the financial service consumer (Agrawal, 2008; Kumar & Mohanty, 2011).

Peachey and Roe (2004) argued that there is a strong correlation between access and per-capita GDP across economies. It is therefore assumed that actually, the bigger and deeper banking systems go hand in hand with more advanced economic development. Hence there is a need to create enabling conditions for economic growth through either a "supply leading" strategy that spurs growth or "demand following" strategy that spurs growth through generating demand for financial products and services (Mohan, 2006). FI is significant in economically and socially empowering the vulnerable and poor and may help them come out of poverty (Ardic et al., 2011b; Demirguc-Kunt & Klapper, 2012b; Peachey & Roe, 2004). FI not only positively affects the future economic and social status but also makes the routine financial life of an individual or firm better. For the poor to actually realize the benefits of the financial services, the financial products and services should be of quality , and relevant to their needs (Thorsten Beck & Demirgüç-Kunt, 2008; Thorat, 2010).

A number of scholars have indicated that some of the reasons individuals do not access formal financial services is either due to involuntary or voluntary self-exclusion and other socio-economic reasons (Thorsten Beck et al., 2009, p. 122) or lack trust in formal financial institutions (Dittus & Klein, 2011, p. 4). Additionally some consumers face barriers, such as affordability (Dupas, 2013; Kempson & Whyley, 1999), information asymmetry (Agarwal, 2010), lack of sufficient income financial literacy (Lusardi, 2008a, 2008b; Lusardi, Mitchell, & Curto, 2010; Van Rooij, Lusardi, & Alessie, 2007), insufficient documentation (Ellis, Lemma, & Rud, 2010), inappropriate products and inability to meet eligibility criteria in the case of credit among other

formal financial services (Sarma, 2008), which leads to their marginalization and denial of opportunity to grow and prosper (Mohan, 2006). According to Kempson and Whyley (1999), there is no clear congruity among researchers that many people across the globe are excluded from mainstream banking but the reasons for exclusion differ from one individual to another.

Therefore a vibrant financial sector that includes the formal and semi-formal financial institutions can augment FI but not substitute for it. The financial system has hence been recognized as a policy priority in a number of economies. The significance of a broadly inclusive financial system is driven by the realization of the role of finance as one of the critical components that influence growth and development through its role of risk mitigation, mobilization and resource allocation function (Demirguc-Kunt & Klapper, 2012b; Peachey & Roe, 2004; Rajan & Zingales, 2003). The acknowledgment of the role with the assumption that exclusive growth is not sustainable with financial development has sparked off the revolution of FI among a number of scholars and policy makers among various stakeholders (Agarwal, 2010).

With the realization of the significant benefits of offering savings, credit, insurance and payment services, some scholars have proposed that FI become a public good to address financial exclusion (Agarwal, 2010; Agrawal, 2008; Peachey & Roe, 2004; Rajan & Zingales, 2003). This proposition would be sustainable in economies with more stable or efficient financial systems which is nearly nonexistent among developing economies.

FI has remained low in developing countries like Uganda despite the significant efforts by government, and financial service providers, among other stakeholders. Some of these FI strategic and policy efforts in Uganda include; the rural financial services strategies, Bank of

Uganda FI project, the Uganda financial services inclusion programme under the Department of International Development (DFID) are all working towards financial deepening by increasing access to financial services, especially in the rural areas, which are predominately excluded from the formal financial system. Additionally, financial institutions, especially the banks and MFIs, have shown admirable interest in actively developing products for the poor in rural areas though at a low rate which requires scaling up. In the same regard as perceived by these initiatives, financial sector deepening has been perceived as a means to improve economic growth, reduce poverty and consequently, improve social inclusion (Aduda & Kalunda, 2012; Thorsten Beck et al., 2009; De Koker & Jentzsch, 2013; Dittus & Klein, 2011).

Empirical studies have shown individuals greatly benefit from FI through the ability to have a safe place to keep their money in the form of savings, safer and a relatively cheaper and reliable access to remittances and other payments services, loans or insurance payments to cover health or education expenses, and other uncertainties, often from one financial services provider (Pearce, 2011). Ellis et al. (2010) argued that a number of individuals are propelled to save and borrow money from financial service providers for household consumption, investment purposes and to minimize exposure to any eventualities that may affect them. This propels them to devote considerable effort to finding workable solutions using the financial service providers' options available to them.

The Middle East and Northern Africa (MENA) region, after several years of slow growth, has seen several people of all income categories, embrace and explore the use of financial services across distinct providers. This has been driven by higher efficiency levels experienced by using formal services, to improve their welfare and social positioning, especially the women who are prone to

exclusion (Pearce, 2011). In the same regard, Sarma and Pais (2011), in an effort to develop a financial inclusion index though focusing on mainly the access dimension, found that FI had a relatively positive and significant relationship with human development in a specific country context. These findings are consistent with other scholars, for instance, Aduda & Kalunda (2012); Dupas et al. (2013); Ssonko (2010) who found that there was highly significant positive influence of savings on poverty eradication and individual welfare among people in Kenya and Uganda respectively. They continue to argue that if people actually understand how to use these financial services, individuals are able to derive more benefits from such utilization.

However, Swamy (2014) found that despite this positive influence of savings as a major financial product, FI was perceived to threaten the financial sustainability and stability of financial service providers, especially if there is no sufficient financial counselling or information provided to the users of these products, especially credit facilities. The study by Aduda and Kalunda (2012) revealed the importance of credit information before issuing of credit facilities. Further findings by Pande and Burgess (2005) indicate that FI for instance in the rural locations of India was enhanced by opening more bank branches through policies influenced by the state. These were seen to radically respond to poverty reduction in the rural locations despite that the focus was only on the access dimension, ignoring the importance of usage and quality towards FI. Contrary to Dupas et al. (2013), in their demand side studies, argued that there is a need to ensure quality, affordability of financial services and trust among the users besides simply expanding accessibility through bank branches in order to achieve complete FI.

According to Kempson and Whyley (1999), there is clear congruity among researchers that many people across the globe are excluded from mainstream banking but the reasons for exclusion

differ from one individual to another. In addition, studies undertaken in SSA have mainly focused on defining FI as mere ownership of a bank account disregarding the focus of other financial products and their actual usage. While this is a very important component of FI, the use of insurance, credit, payments are also vital for determining an holistic picture of FI at both individual and macro level. It is particularly important to reach out to populations in the informal markets because all households, no matter how poor they may be, are said to engage in some form(s) of economic activity as well as financial strategies to build assets, plan for social events, emergencies and meet their daily transactions to survive (Cohen & Sebstad, 2005). Findings indicate that the majority engage in a number of non-financial means of saving, for instance, accumulation of livestock, jewelry, staple foods - in Northern Uganda mainly millet - which are believed to have spiritual and cultural significance (Stuart, 2000).

Additionally, rural households engage in informal financial relationships among themselves which may not be guaranteed as safe and reliable. In the same regard, Schindler (2010) argued that there is a need to integrate the informal and formal financial markets because the volume of informal activity is far greater than that of organised financial institutions. Perhaps this integration can inherently improve the involvement and consequently wellbeing of such rural segments by providing them a wider array of efficient, safe and reliable financial services to improve their financial strategies and wellbeing at large. However, this integration cannot be completely done without examining the behavioural attributes that individuals possess which enable, not only their transition from informal to formal systems, but also to actually confidently appreciate the formal institutional models. In order to gauge whether the formal financial institutions are effective vehicles of FI, it is thus important to understand the individual attributes

or capabilities of the different segments. This is within the diversity of an economy like Uganda that may enable them embrace the financial products and services they purportedly need to use to improve their welfare and enjoy the benefits that emanate from being financially included.

2.3.1 Defining Financial Inclusion

Due to the increasing efforts to promote FI, the debate in literature has shifted to include the demand side factors that in fact significantly influence financial inclusion, such as financial literacy (Anzoategui et al., 2014; Atkinson & Messy, 2011; Lusardi et al., 2010; Sarma & Pais, 2011; Stango & Zinman, 2007; Struwig, Roberts, & Gordon, 2013), personal income (Allen et al., 2012; Kempson & Whyley, 1999; Leyshon & Thrift, 1995; Sarma & Pais, 2011), age (Allen et al., 2012; Martínez et al., 2013), gender (Demirgüç-Kunt & Klapper, 2012; S. Johnson, 2004; Martínez et al., 2013), social capital (Balogun & Yusuf, 2011; Jones & Volpe, 2011); Jones (1986); (Kamukama, Ahiauzu, & Ntayi, 2010) and culture (Dittus & Klein, 2011; Kempson, Atkinson, & Pilley, 2004).

The definition of financial inclusion has also taken various angles on what it means or entails and is being defined by different policy makers and advocate. Modifications have been made to the FI definitions over time to include the demand side, hence extending earlier definitions that were greatly inclined to a single dimension - access. For instance, Ardic et al., (2011b); Demirgüç-Kunt and Klapper (2012); Leyshon & Thrift, (1995) defined FI as simply the access to the basic financial services. Sarma and Pais (2011) modified the definition of FI as the process that ensures the ease of access, availability and usage of the formal financial system for all members of the economy. These definitions do not emphasize the importance of other dimensions of FI, for instance, usage and quality which is consistent with Gupte et al., (2012); Ssonko, (2010). Various scholars view FI by drawing on earlier contributions towards the discourse and have attempted to define FI and

FE in the absence of FI. Drawing on earlier contributions, the World Bank and Centre for Financial Inclusion at Accion (CFI), 2013, have attempted to standardise the definition.

The definition which is in agreement with the majority of the definitions earlier developed and used in various studies is one developed by The Centre for Financial Inclusion at Accion (CFI), 2013. CFI, (2013, p.3.) referred to FI as "a state in which all people who can use financial services have access to a full suite of quality services, provided at affordable prices, in a convenient manner, and with dignity for the clients." This particular definition attributes great importance to sustaining the true concept of FI presently and in future research. The definition therefore, regardless of the indicator, further highlights the FI discourse focusing also on the importance of the financial services to the user/ financial consumer.

Various definitions have developed over time but there is no universally accepted definition extending towards all the dimensions that are used to comprehensively define FI. Since FI not only affects future economic conditions, through supply oriented efforts, it also makes better a routine life of an individual who is referred to in this study as the financial consumer. Other scholars have defined FI in terms of social exclusion (Carbo, Gardener, & Molyneux, 2007; Connolly & Hajaj, 2001; Mohan, 2006; Rathod & Arelli, 2013), financial exclusion (Conroy, 2005; Leyshon & Thrift, 1995). The differences in definition emanate from the context in which it is used, geographical location and probably the state of economic development of the area in question, among others.

2.3.1.1 Dimensions of Financial Inclusion

Massara and Mialou (2014) postulated that the notion of FI be advanced through its three dimensions: access, usage and quality of financial services. Accordingly, Hannig and Jansen (2010); Serrao, Sequeira, and Hans (2012) opine that measurement of FI should be able to monitor levels of FI and secondly, deepen understanding about factors that associate with FI that enables the testing of hypotheses between FI and other variables. These studies argued that FI is often measured through the three dimensions;

The *access dimension,* which measures the physical and breadth of financial services, and individuals' ability to use the available financial products and services at a service point. They further state that shortage of financial service points is predominant in the rural locations compared to those individuals in the urban locations. Secondly is the u*sage dimension*, which measures an individual's ability to derive permanent purpose and utility from a particular financial product or service. Thirdly, is the q*uality dimension* which measures the relevance of the financial products or services in the day-to-day needs of the financial consumer.

These measures were similarly adopted in demand side studies by Hannig and Jansen (2010) Camara, Peña and Tuesta (2014); Demirguç-Kunt and Klapper (2013); Sarma and Pais (2011) to measure financial inclusion from a demand side perspective similar to this study.

The World Bank Global Financial Development Report (2014), identifies the adoption of a multidimensional approach to define and operationalise FI. This is vital because it helps to overcome the often mistaken supposition that FI will only be achieved by simply offering enough access points savings products. To address this anomaly towards achieving complete inclusion, issues of frequency of use by individuals, and quality of financial services towards effectively

meeting their needs should give better results and perspectives. Therefore, including usage and quality in the definition and measurement of FI besides simple access is believed to prove more useful for analytical explanation to FI.

FI enables the transformation of the lives of the low income segments in developing countries like Uganda. However, as Sarma and Pais (2011) observed, for an individual to realize benefits of financial services, the products should be accessed easily, should be of quality, and relevant to individual needs. Access and usage of formal financial services like; credit, savings, insurance, payment facilities are tenets to enhancing household and individual consumption, investment against uncertainties and adversities that the low income segment experience (King, 2013). A number of studies have laid emphasis on credit as the most important product to improve access to finance. However, it is imperative to note that a broader concept of FI should incorporate savings, remittances (Anzoategui, Demirgüç-Kunt, & Martínez Pería, 2014) and insurance (Dittus & Klein, 2011). In addition, even for those individuals who supposedly have access to financial services, there is a variation in the distribution, with some people accessing only a bank account that may in fact be used infrequently.

2.3.2 Social Exclusion and Financial Exclusion

From the previous discussion, it is evident that a growing body of empirical research has contested that FI and equally, financial sector development has a "*knock on effect*" that promotes growth among the poor and reduces inequality among societies. This is an indication of a broader challenge of social exclusion (Kempson & Whyley, 1999; Kempson, Whyley, Caskey, & Collard, 2000). The people who lack access to financial services are commonly perceived to be excluded in other ways; FE is often believed to reinforce other forms of social exclusion (De Koker &

Jentzsch, 2013; Kempson & Whyley, 1999; Kempson et al., 2000; Sarma & Pais, 2011). We find that the informal sector to which the majority of the excluded in developing countries belong, is characterized by the barriers earlier discussed to FI hitherto, for instance, unemployment, limited income, poor infrastructure, illiteracy, among others.

It has been argued that the excluded segments from the formal financial system belong to generally excluded segments in society (Barry & Hallett, 1998; Sarma & Pais, 2011). This is an indication that actually Kempson and Whyley (1999) indicated that the limited participation in the financial services space contributes to the broader predicament of social exclusion. Literature on FI has perceived FE as a reflection of a bigger picture, referred to as social exclusion of the underprivileged segments of the society which include; poor women (Demirgüç-Kunt & Klapper, 2012; Kempson et al., 2004; Kempson & Whyley, 1999), less educated individuals, vulnerable people with low incomes, people living in rural locations with poor infrastructure and countries with high levels of income inequality (Barr, Dokko, & Keys, 2009; Collard, Kempson, & Whyley, 2001; Connolly & Hajaj, 2001; Leyshon & Thrift, 1995; Thorat, 2010).

Kempson et al. (2000, p.7) defined social exclusion as *"… a shorthand term for what can happen when people or areas suffer from a combination of linked problems such as unemployment, poor skills, low incomes, poor housing, high crime environments, bad health, poverty and family breakdown…"* The definition can broaden to include the exclusion from access to financial services. Ssonko (2010) opines that irrespective of the association between FE and social exclusion, it appears that "socially excluded" people are prone to suffer financial exclusion and should henceforth be compared to those fully integrated in the formal institutional arena. Conversely, Barry and Hallett (1998) argued that social exclusion and consequently FE occurs

among individuals that are homogenous, however he observes that it is worth distinguishing social exclusion from social isolation .

Whilst the socially excluded groups are more susceptible to FE, there is no doubt that in agreement with Barry and Hallett (1998)'s argument for social isolation also referred to as social exclusion, FE should also focus on the failure of individuals.

2.3.4 Measurement of Financial Inclusion

FI has become part of the social policy vocabulary in developed and developing countries alike and is found to be important for people to participate in societal activities to improve their wellbeing. Despite the significance, FI studies have been demonstrated across the globe, Hannig and Jansen (2010) argued that there is still a lack of a comprehensive measure to assess the extent of FI. The measurement of FI is important in creating an in-depth understanding of the factors that correlate with FI and, subsequently, the impact of policies and welfare of the financial services consumers.

Several scholars have developed indices for the measurement of FI but the general limitation of the indices is that they have been used in panel studies to compare the extent of FE in different economies over time. The cross country surveys are important because the harmonized data and results enable comprehensive analysis of financial behaviour and FI across countries. These results also allow for international comparison of FI. Large data samples comparing FI levels in various economies for policy purposes have been used which leaves out the micro level assessments of FI. They have also not been used on individual or smaller household sample data.

Sarma (2008) developed the "multi-dimensional" Index for Financial Inclusion (IFI) adopted from the UNDP's Human Development Index (HDI) computation and used three dimensions; accessibility, availability and usage to measure FI represented by 0=complete exclusion and 1=complete inclusion. This index was adopted by Kumar and Mohanty (2011); Mehrotra et al. (2009) while examining the relationship between inclusion and development and whether socio-economic factors, for instance, income, financial literacy, inequality, urbanization, infrastructure, influence financial inclusion respectively. Despite the significant indications and interpretations the IFI provided in relation to levels of FI, it does not include cost and ease and yet these impact the inclusion factor. Also the measurement dimensions used for computation are dictated by availability of consistent data sets besides being used on large data across economies.

Further, Ardic, Heimann, and Mylenko (2011a); Kendall et al. (2010) modified the IFI to predict the number of bank accounts for each type of regulated institution in the financial access database however they are both limited to access using bank accounts which does not give a comprehensive picture of FI in a given country *vis a vis* the demand side of the equation hitherto.

Similarly, Arora (2010) as well as Chakravarty and Pal (2012) modified Sarma (2008)'s IFI and developed the Financial Access Index (FAI) to measure financial access by including more variables in the outreach dimension as well as both demographic and geographic penetration factors to the dimensions of ease and cost transactions which were earlier excluded. However, the indices were computed using select dimensions but do not include usage which is a significant dimension in measuring FI. FI is incomplete if individuals can only access financial services – the process becomes not only incomplete but useless henceforth. This is in agreement with Sahrawat (2010)'s emphasis that the usage of the financial services by an individual for economic

improvement and welfare enhancement is what leads to FI and not the mere ownership of a financial product. This has been a critical limitation among scholars that have attempted to measure FI in various economies. Therefore any effort to measure FI needs to critically consider a number of variables or indicators that influence or clearly define the extent of FI as well as the extent to which other factors influence on FI. The data that has been used in earlier studies that have been the benchmark of IFI computations is outdated, therefore the extent to which the indices are robust is limited and not holistically indicative of the level or extent of FI (Gupte et al., 2012).

Gupte et al. (2012) developed an index to assess the extent of FI in India and included more variables/factors in the FII that impact FI and a more robust analysis which had earlier been adopted by Arora (2010). However, there were limitations to variable coverage to comprehensively compute the level of FI, given the dimensions. Their study provided a more indicative index of the extent of FI and tends to highlight the more impactful dimensions among other existent measures earlier developed by Arora, (2010); Beck et al., (2007); Sarma, (2008). The index uses limited variables and dimensions to calculate the extent of inclusion.

Generally, literature on FI reveals that continuous alterations are being made to find a comprehensive and more robust measure of the extent of FI. Consequently, when indicators are used individually, only partial information on the level of inclusiveness is provided. For instance, Sarma (2008) indicates that a single digit measure only allows for cross-country comparisons that are usually used to predict progress of economic growth given the levels of FI. The general limitation of the indices earlier developed is that they have been used in panel studies to compare the extent of FE in different economies over time. They have also been used on large data

samples for policy purposes which has limitations of non-representation of both the supply and demand side factors that realistically influence FI across the globe. The computation of the indices has not been used at individual or household level sample data.

It is therefore imperative to note that in order to attain meaningful and sustainable measurement of FI, there is a need to consider the individual capabilities of a financial consumer that is: personal capabilities as well as societal capabilities. The current literature on FI has neglected attributes like financial attitude, financial self-efficacy, financial literacy, social networks, and subjective norms as predictors of FI, which may have a significant explanatory power on FI at the individual level from a developing country context.

2.4 The Capability Approach and Financial Inclusion

Sen's Capabilities Approach (CA) is a multi-dimensional understanding which focuses on the capabilities that people have to enable them to achieve outcomes that are valuable to their lives, such as being financially included (Frediani, 2010; Hill, 2003; Iversen, 2003; Nussbaum & Sen, 1993; Robeyns, 2000, 2003; Sen, 1993). The CA departs from the dominant economic model of rational choice used in the expected utility theory (EUT) among decision makers. The key assumption of EUT is that as individuals make choices and decisions, they only rely on probability values, thereby maximizing their expected monetary values (Dawes & Kagan, 1988; Hastie & Dawes, 2010). In line with this study, the CA pointed out that when financial products and services are readily available and accessible, it can have a positive influence of economic entitlements and consequently, development.

The approach further stipulates in this regard that for financial products and services to realize effective benefit to users, they must be suitable to the needs of the people, frequently available and accessible in order to address the short and long term needs and intentions of the people at all income levels (Rutherford, 2000) hence FI. Thus, Sen refers to individual capabilities as a broad set of abilities from which a person chooses to act. He argued that a blend of interrelated capabilities that include socio-economic attributes enable individual functionality which results from their capabilities (Sen, 1999; Sen, 1970). In addition, capabilities alone are deemed pointless if the user does not utilize them.

The major feature of the CA is the shift from focusing on the status of individual income to estimating wellbeing and quality of life among individuals (Gasper, 2002; Hick, 2012; Iversen, 2003; Sen, 1993). In Sen's capability of well being study (1993,1999), he identifies the space within which an individual's capabilities play a significant role in achieving development. This study therefore argues in the same line of thought that since FI leads to development, then a financial consumer's capabilities will inherently influence FI, given their environment. Frediani (2010); Sen (1993) emphasise capabilities as being the evaluation space according to which the state of affairs in a particular context are examined.

Economists and development experts agree that Sen's CA provides an insight into the notions of well-being, poverty and development. FI is one such strategies. Therefore, CA is inevitably used because it presents qualities that generally inform the context, focusing on the individual capabilities that influence financial behaviour and consequently FI. Sharma (2005) posits that one of the highly influential approaches to conceptualisaing human development is the CA which constructs development as a "freedom". This refers to a situation whereby people have more

freedom or opportunities to live the lives they value; for instance a life free from poverty, oppression, inequality and also FE (Sen, 1993, 1999; Sen, 1970).

Various scholars in diverse disciplines have applied the CA with emphasis on an individual's capability to perform an action or behaviour. CA has been used over the years in political and development studies (Hill, 2003; Robeyns, 2000, 2005a, 2005b, 2006; Sen, 1999; Sen, 1999), economics (Iversen, 2003), gender studies (Agarwal, Humphries, & Robeyns, 2005; Nussbaum & Sen, 1993; Nussbaum, 2001; 2005), ICT (Kivunike, Ekenberg, Danielson, & Tusubira, 2011), among other general studies that have made CA their primary focus (Evans, 2002, 2005; Hill, 2003; Sharma, 2005). Generally there appears to be a natural concentration of CA in development studies which are not within the finance context.

Sharma (2005), in his disability and rehabilitation research, argued that in order to make the CA meaningful, it was necessary to define mutually exclusive constructs in order to measure access to health services by persons with disabilities. The study recognised the five major constructs of CA; exchange entitlements, charateristics, capabilities, functions and well-being. Further, Sharma (2005) contended that the construct of capabilities is amenable to modification through factors that pertain to personal, institutional and societal levels.

Despite the significant contribution of CA towards understanding individual behaviour in various contexts, it has been criticised. For instance, Nussbaum (2001) has engaged with, critiqued and extended Sen's CA. She argues that the CA would be empirically applicable if there was a standard list of capabilities to offer valuable guidance, especially in ethical judgement and conceptions of justice. Conversely, this study argues that a standard list of capabilities may not claim universal

application or relevance in diverse contexts, that is, not all outcomes require the same capabilities.

Additionally, Nussbaum (2001) argued that there are some core capabilities that differ and may be more important than others in a specific context. This makes her premise more context specific. Conversly the importance given to these specific capabilities may in some way limit the freedom of choice which Sen (1999) cherishes in his work. Also determining which capability is actually important may be difficult to substantiate, given the diversity and sponteinity in the utilisation of an individual's capabilities in a given situation. Additionally, Evans (2002) argued that the value of resources available to individuals is only realized by the individuals' ability to convert them into valuable outcomes.

Robeyns (2005, 2006), while appreciating Sen's CA for gender analysis, contends that CA has a critical drawback of being "*under specific*" and therefore proposed a method or criterion of selecting relevant capabilities, especially in gender studies across wealthy societies. The study argues that availability of information enables one to make judgements about a capability at the level of the achieved outcome which is consistent with the issues also identified by Iversen (2003). He specifically refers to the interdependence between individual capabilities which affects well-being outcomes.

Drawing on the CA's theory of how capabilities influence choice and outcomes, this study attempts to focus on personal and societal capabilities. The application of CA is in various forms, but the study is limited to two forms; a) defining capabilities as an individual's capacity or ability to realise an outcome, in this case FI and b) examining financial exclusion as a deprivation of

individual capabilities (Sharma, 2005). The study adopts CA as an analytical framework in defining and analysing capabilities as the ability to access and use financial services to improve welfare and quality of life.

This study assumes that the financial services provided by the supply side are the available resources whose value is only realized when individuals use their capabilities to convert them in a valuable outcomes - FI.

2.5 Personal Capabilities and Financial Inclusion

In this study, personal capabilities are defined as the combination of financial attitude and financial literacy that individuals possess to enable them achieve financial inclusion. In line with the capabilities approach, it is postulated that the individual consumer capabilities influence FI. This preposition is based on empirical studies that have found a relationship between individual capabilities and financial behaviour respectively in various contexts. Lea et al. (1993); Pattarin and Cosma (2012) argued that the influence of psychological factors such as financial attitude and financial literacy on financial decisions cannot be ignored because they are significantly related to motivations for using financial services. Individuals are more likely to adopt and reflect the attitudes of those around them when they have interconnected relations and these relations may influence financial behaviour and consequently FI (Jones & Volpe, 2011; Katz, Lazer, Arrow, & Contractor, 2005; Okten & Osili, 2004). It is therefore hypothesized that;

H13: *There is a positive relationship between personal capabilities and FI among individuals in Uganda.*

2.5.1 Financial Attitude and Financial Inclusion

Attitude towards behaviour refers to an individual's evaluative judgment of a behaviour in question (Ajzen, 1991). In addition, attitude involves an individual's judgment on whether the intended behaviour and consequently, the desired outcome is good or bad and also whether the individual is in favor of or against it (Leonard & Cronan, 2005). Generally individual behaviour is influenced mainly by knowledge and attitudes (Eagly & Chaiken, 1993; Godwin & Carroll, 1986; Hira, 2012). Attitude scholars and theorists, for instance, Armitage and Conner (2001), suggested that individuals' attitude are pronounced in terms of cognitive or evaluative aspects that provide information content depending on the specific anticipated outcome. The relationship between attitude and behaviour is elaborated in the theory of reasoned action articulated by Fishbein and Ajzen (1975) which assumes that individuals are rational decision makers. This implies that individuals consciously think through the reasons for their actions, taking into account the possible implications of such actions and act according to such reasoning (Orobia, 2013). Drawing from this assertion, when individuals evaluate a behaviour as favourable for attaining a certain anticipated outcome, it will lead to an individual's engagement in the behaviour that consequently influences their access and use of financial services, hence FI. This relationship has been investigated by a number of studies in different domains, however, in the finance domain, the majority of the studies have focused on the attitude – behaviour relationship in financial management.

Fishbein and Ajzen (2011) argued that the most fundamental assumption underlying the attitude concept is that attitudes guide, influence, direct, shape and predict actual behaviour. Therefore it is anticipated that through a deliberative process, financial consumers evaluate and judge

whether undertaking the use of financial services is important towards improving their wellbeing or not. When they evaluate the processes and tasks favourable to achieving their intended outcomes, they are likely to engage and undertake them. It is then logical to contend that it is difficult to understand FI detached from the individual's attitude, especially among financial consumers who make critical financial choices and decisions from a variety of options. This is supported by Chau, Chan, and Chan (2004); Kidwell and Turrisi (2003), who used the theory of planned behaviour to explain budgeting behaviour and financial management respectively, and established that positive attitudes are associated with actual financial behaviour.

Several studies have demonstrated the application of the attitude concept to explain both individual and organizational behaviour (Bagozzi, Baumgartner, & Yi, 1989; Bagozzi & Burnkrant, 1979; Bagozzi, Lee, & Van Loo, 2001; Bentler & Newcomb, 1986; Fishbein & Ajzen, 1975) and performance. These studies have assessed whether the individual or organisational attitude influences behaviour directly or indirectly and findings vary from one context to another. Only a few studies have investigated the influence of financial attitude on behaviour (Chen, Dowling, & Yap, 2012; Godwin, 1997; Norvilitis & Mao, 2013; Shih & Ke, 2013) and specifically not its influence on individual FI. However, Fishbein and Ajzen (1975) indicated that attitude has a greater predictive power when it is domain specific. Therefore, attitude being anchored in the context of the finance domain is proposed as the financial attitude construct which is consequently examined to explain its influence on FI (Chen et al., 2012; Norvilitis & Mao, 2013; Shih & Ke, 2013).

Pattarin and Cosma (2012) argued that attitudes towards debt play an important role and are significantly related to motivations for using credit to the other options of financing. Similarly

Livingston and Lunt, (1992); Norvilitis et al., (2006) found a positive significant relationship between individuals' attitudes towards financial behaviour, especially in the debt context. It was further argued that attitude and behaviour are necessary in making sound financial decisions and ultimately achieving individual financial well-being. The more favourable the attitude towards performing a behaviour, the greater the perceived social approval, the easier the performance of the behaviour is perceived to be, the stronger the behaviour intention. Additionally, human action is influenced by beliefs about the likely outcomes of the behaviour which, in this context, is individual financial behaviour (Ajzen, 1985, 1991; Beck & Ajzen, 1991; Fishbein & Ajzen, 1975). Chau et al. (2004); Norvilitis & Mao, 2013) examined students' attitude to credit card use and found that those students who had favourable attitudes were more likely to have and use credit cards for their day-to-day transactions and also the intent to use innovative financial products was also predictive of use. Similarly, Davies and Lea (1995); Lachance (2012) revealed that students were propelled by their positive attitude to recognize both the advantages and risks associated with credit. Therefore the attitudes towards credit are positively related to the number of credit cards held and knowledge of credit as well as other financial products and services, hence FI. Godwin and Carroll (1986) examined the influence of financial attitudes on financial management and found that a positive attitude towards financial planning was the greatest predictor of cash flow management. However in a similar study, Parrotta and Johnson (1998) hypothesised that financial knowledge as a moderator may strengthen the interaction and consequently the relationship between financial attitudes and financial management. Their study surprisingly found that financial attitudes eliminated the effect of financial knowledge when

tested together for their relationship with financial management. Therefore financial attitude independently was found to be a significant predictor of financial management.

2.5.1.1 The Theory of Planned Behaviour (TPB)

The theory of planned behaviour emerged as the extension of the theory of reasoned action (TRA) by Fishbein and Ajzen (1975) on the premise that the TRA had failed to comprehensively explain individual behaviours that are not under volitional control. The main focus of the TPB is that complete perceived or volitional control is rare and that certain behaviours require special resources and skills. The TPB posits that individuals' actual behavioural intentions and choices are determined by attitude, subjective norms and perceived behavioural control (Ajzen, 1991; Fishbein & Ajzen, 1975). The TPB further asserts that the attitude-behaviour relationship is influenced by three essential aspects; a) parallelism between the attitude and behaviour which implies that strong individual attitude is obtained only when there is an association between the specific anticipated action and the individual's expected behaviour; b) attitude as an antecedent towards a behaviour and the actual act to be undertaken; and c) the degree to which aggregating the behavioural criterion is a causal (Fishbein & Ajzen, 1975). In addition, when individuals have preconceived notions of their personal abilities in terms of their capabilities and enabling resources to achieve a specific outcome, this perception will play a major role in their behaviour either directly or indirectly through attitude as illustrated in *Figure 2.1.*

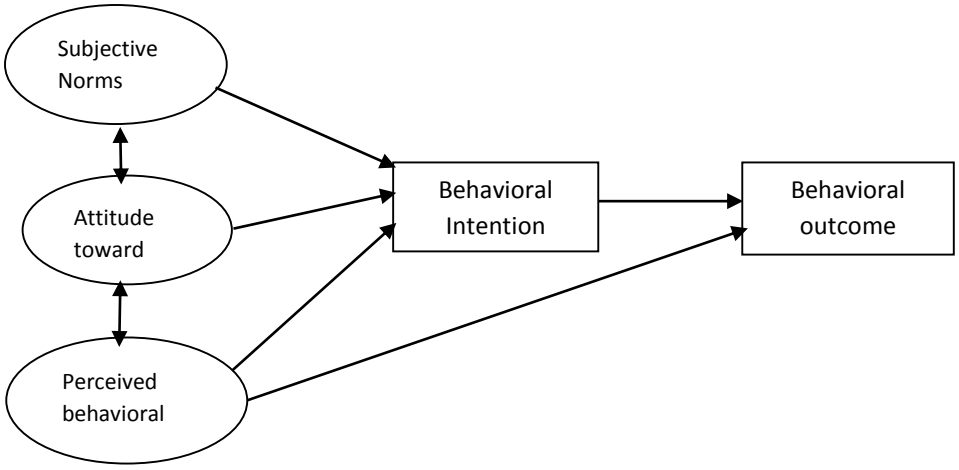


Figure 2.1: Theory of Planned Behavior, (Ajzen, 1991)

The TPB has proven relatively successful in predicting and explaining behaviour across several fields. For instance, Taylor and Todd (1995), in their study assessing the theory that best explains the usage of information technology, found that the TPB provides a fuller understanding of behavioural intention by focusing specifically on those factors that actually influence systems usage which perhaps applies to other behaviours and anticipated outcomes in diverse contexts.

2.5.1.2 Measurement of Attitude

Attitude has been measured by examining a person's evaluative judgment in several previous studies (Bagozzi et al., 1989; Bagozzi & Burnkrant, 1979; Bagozzi et al., 2001; Mirvis & Lawler, 1977; Teo & Pok, 2003; Weber, Blais, & Betz, 2002). However, limited research exists attesting to the validity or measurement of attitude. For instance, Triandis (1964), in his study examining the relationship between attitude (social) and behaviours, evidently found that attitude is a multidimensional component. Similarly, Bagozzi et al., (1989); Bagozzi & Burnkrant, (1979); Ostrom, (1969) found that the affective, behavioural and cognitive components of attitude are subjective or vary depending on the context within which it occurs.

The existing literature indicates that previous empirical studies on FI have not clearly highlighted the relationship between attitude and FI. The focus has generally been on the influence of attitude on financial management as well as other domains. In view of the central role of financial consumers as an avenue for achieving FI, the financial consumers' capabilities such as financial attitudes are likely to provide a clearer understanding of FI among individuals. Therefore in order to construct an enriched understanding of FI, the influence of attitude is important in terms of critically evaluating the available options regarding the choice and use of financial services. It is also anticipated that changes in attitude will influence changes in individual financial behaviour, hence the use of financial services to improve their welfare and quality of life. Therefore the study hypothesizes that;

H6: *There is a positive relationship between financial attitude and financial inclusion.*

2.5.2 Financial Literacy and Financial Inclusion

Emphasis on financial literacy in several economies has raised a lot of attention and grown in recent years. This is because of the complexities arising in the dynamic financial industry that requires financial consumers to more actively make financial choices and decisions (Braunstein & Welch, 2002; Lusardi & Mitchell, 2011). In the same regard, Sen's CA which has been used to articulate this study, continues to advocate for all forms of literacy as a strategy necessary for human development (Sen, 1999). Empirical studies have attributed a lack of basic knowledge of financial concepts required to make informed financial decisions as one of the critical causes of the sluggish adoption of and low demand for formal banking services (Giné & Yang, 2009).

However, a number of potential financial consumers lack the relevant knowledge of financial concepts and the skills required to facilitate the choices and decisions most beneficial to improve their quality of life and welfare (Atkinson & Messy, 2011; Hilgert, Hogarth, & Beverly, 2003; Lusardi et al., 2010). The expanding and dynamic consumer financial markets continue to provide a wide range of financial products and services to choose from, hence influencing individuals' financial decisions (West, 2012). Therefore, financial literacy is assumed to be a strategy to improve consumer behaviour in terms of the products and services available. Financial literacy also avails individual consumers the knowledge and skills necessary to assess whether financial products are suitable for them to use in order to improve their financial wellbeing and hence FI (Braunstein & Welch, 2002). Lyons (2005) indicated that over the years the financial products and services have inherently increased and become more complex without a commensurate growth in the level of financial literacy among several classes of people in society. Individuals unfamiliar with the basic financial concepts are finding it difficult to assess and eventually use financial products and services hence the need for financially literate, knowledgeable and informed financial consumers to achieve FI.

Robb, Babiarz, and Woodyard (2012) further highlight that there is a distinction between the concepts of financial knowledge and financial literacy. Financial literacy, which refers to the understanding of financial concepts and the ability to correctly interpret financial data and consequently make sound financial decisions, has become dominant in financial consumer research and financial behaviour (Atkinson & Messy, 2012; Gathergood, 2012; Lusardi, 2008a; Van Rooij et al., 2007). Financial literacy has been interchangeably been used in certain studies

as financial education (Bernheim, Garrett, & Maki, 2001; Mandell & Klein, 2009) and financial knowledge (Huston, 2010).

A number of scholars have indicated the importance of financial literacy in adequately evaluating financial products and also choosing among them (Benartzi & Thaler, 2007; Lusardi, 2008a, 2008b; Lusardi & Mitchell, 2007; Lusardi et al., 2010; (Anzoategui, Demirgüç-Kunt, & Martínez Pería, 2011; Anzoategui et al., 2014; Arrondel, Debbich, & Savignac, 2012; Atkinson & Messy, 2011, 2012; Lusardi, 2008a, 2008b; Lusardi et al., 2010; Lusardi & Mitchelli, 2007; Sarma & Pais, 2011; Van Rooij et al., 2007). Recent studies Disney & Gathergood, (2011, 2013); Jappelli, (2010); Jappelli & Padula, (2013); Klapper, Lusardi, & Panos, (2013) have demonstrated the causal association between financial literacy and financial behaviour. Their findings indicate that individuals who have high levels of financial literacy exhibit a better understanding of financial concepts that positively relate to their participation in the financial markets. Conversely, the results also indicated that financial literacy is negatively related to the use of informal sources of financing hence rational financial behaviour.

However, empirical studies that demonstrate the causal association between financial literacy and financial behaviour and consequently FI, are still scarce (Disney & Gathergood, 2013; Jappelli & Padula, 2013; Klapper et al., 2013; West, 2012). Literature still indicates that there are several definitions of financial literacy. Financial literacy has been defined as the ability to make informed financial judgments and take effective decisions regarding the use of finances. Remund (2010) reviewed several conceptual definitions of financial literacy over the past decade when the need for financial literacy became predominantly recognized and integrated them to develop a more consistent conceptual definition to guide scholars. “Financial literacy is a measure of the degree

to which one understands key financial concepts and possesses the ability and confidence to manage personal finances through appropriate, short term decision making and sound, long range financial planning, while mindful of life events and changing economic conditions." (Remund, 2010, p. 284). This study is further guided by this definition.

2.5.2.1 Social Learning Theory

Based on the social learning theory (SLT), cognitive skills are determined by the various forms of learning that influence one's capability to realize an outcome and consequently one's behaviour. The SLT postulates that individuals' behavioural patterns can be influenced or acquired mainly through observation of other people's behaviours through a process of differential support (Bandura, 1971; Bandura & McClelland, 1977). Bandura (1971) further argues that individuals who possess a reasonable level of capacity and conducive supporting conditions that facilitate the acquisition of skills and knowledge have a strong motivational effect. SLT further posits that, unlike traditional learning theories that depict behaviour as a product or consequence of direct experienced learning, Bandura's SLT asserts that, virtually all learning can occur on a vicarious or observational basis. This is attributed to an individual's capacity to learn through observation which exposes one to acquire large integrated units of awareness and consequently behaviour alterations without having to develop the patterns gradually through trial and error (Bandura, 1971).

The SLT has been used to articulate financial literacy and postulates that individuals learn from one another, through observation, imitation, and modelling in social interactions (Bandura, 1971; Bandura & McClelland, 1977). Through learning, individuals are able to acquire the expected

financial knowledge and skills, which changes their behaviour and ability to solve day-to-day financial problems (Ramsden & Moses, 1992).

Bandura (1971) further argued that in the process of acquiring knowledge and skills, learning is stimulated by attention, retention, reproduction, and motivation of the learners. The findings among several studies that have applied the SLT affirm the positive significant relationship between awareness and behavioural change. For instance, Postman and Sassenrath (1961) found that emergence of awareness had a significant influence on changes in individual responsiveness and consequently improved performance. Similarly, Spielberger and DeNike (1966) found that individuals displayed no increase in reinforcement responses as long as they remained unaware of the reinforcement contingency, but eventually increased their output of appropriate responses after discovering the necessary knowledge they required. This is an indication that acquisition of skills and relevant knowledge through learning inherently influences choice, decisions and behavioural change - financial behaviour inclusive. Financial literacy has been perceived as a process that enables financial consumers to improve their understanding about the various financial products and services, financial concepts and identify risks and opportunities that may inherently influence the choice and consequently, use of financial services (Braunstein & Welch, 2002).

Zimmerman and Schunk (2003) indicated that the SLT of observational learning that, Bandura, (1971); Bandura & McClelland, (1977) developed has recently been extended to include the acquisition and performance of diverse skills, strategies, and behaviours among individuals. Social cognitive principles have also been applied to the learning of cognitive, motor, social, and self-regulation skills that influence individual decisions and behaviour. Drawing from the SLT

theory, individuals can learn through social interaction by which they begin to understand and form values, knowledge, and attitudes about finances. Financial literacy entails interactive learning and hence financial consumers practice the newly acquired financial skills and turn the knowledge into tangible financial decisions, hence FI.

2.5.2.2 Measuring Financial Literacy

Previous literature has shown that financial literacy constructs were assessed by whether a specific definition was provided and whether multiple terms were used to represent the same construct (Huston, 2010). In line with this therefore, financial literacy refers to the measure of how well an individual can understand and use personal finance-related information to make reasoned financial decisions. Several scholars have attempted to develop a measure for financial literacy but they have found obstacles to achieving a standard measure of financial literacy. These include a lack of concrete conceptualization and definition of the financial literacy construct, inconsistent instrument content and guidance on instrument and measure interpretation (Atkinson & Messy, 2011; Huston, 2010). In this regard, in order to address some of the inconsistencies in the measurement of financial literacy, recent studies, for instance Disney and Gathergood (2013); Jappelli and Padula (2013), have attempted to include more computations to create variations in the different levels of financial literacy within samples that do not relate to the choices within the financial market. However, the down side to such new developments is that the recent modifications to measuring financial literacy are biased to consumers already engaged in the formal market. Therefore the assumption is that they have some level of understanding as well as an obvious incentive to acquire the necessary understanding in terms of the desired products and services.

Huston (2010); West (2012) argued that financial literacy could be conceptualized from two dimensions which include understanding finance knowledge and application which implies that an individual must have the ability and confidence to use the financial knowledge to make financial decisions.

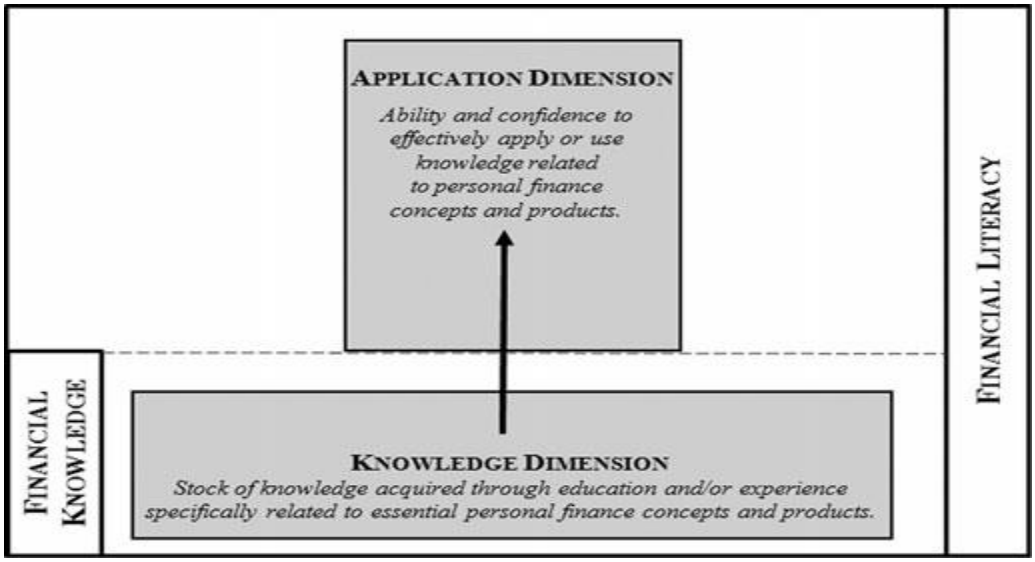


Figure 2.2: *Measuring financial literacy (Huston, 2010)*

However, Remund, (2010); Robb et al., (2012) concluded that there is currently no standardized measure of financial literacy. Further, Huston (2010) emphasizes that the lack of a consistent or standardized measure of financial literacy limits the extent to which findings on financial literacy can be generalized to effectively examine financial literacy in various contexts.

Financial literacy has been linked to several indicators of financial behaviour. For instance, individuals with low or no financial literacy are found to be less likely to plan for retirement (Alessie, Van Rooij, & Lusardi, 2011; Lusardi, 2008a; Lusardi & Mitchell, 2011; Lusardi & Mitchelli, 2007), influence individuals and decisions and participate in the financial markets (Alessie et al., 2011; Lusardi, 2008a, 2008b; Van Rooij et al., 2007; Yoong, 2011). The literature further argues

that financial literacy is vital in bridging the gap between consumer decision making and the use of financial products and services, (West, 2012) and hence influences FI.

During the sub-prime crisis in the United States, Gerardi, Goette, and Meier (2010) undertook a study and found that individuals who had low or no financial literacy were more likely to take up sub-prime mortgages and to default on them. This study concurs with Mottola (2013) and Lusardi and Tufano (2009)'s findings that indicated that individuals with lower levels of financial literacy reported excessive credit loadings due to the failure to judge their debt positions. Contrary to these findings I argue that in certain cases, the poor are more likely to get into debt because of expensive means of borrowing and inability to accrue savings for emergencies. Similarly, Allgood & Walstad, (2013); Allgood & Walstad, (2012) also linked financial knowledge, mainly focusing on credit, to influence individual financial behaviours and concluded that the cost of ignorance was high. Conversely, Bertrand and Morse (2011) argued that a significant portion of individual choice to use formal financial services, especially credit, is attributable to cognitive biases rather than to sufficient knowledge and skills for decision-making.

Sarma and Pais (2011) found that adult literacy is positively and significantly associated with financial inclusion, implying that the higher the adult literacy, the higher the levels of FI among economies. Similarly, Hilgert et al. (2003) in their household financial management study in which they examined the connection between financial knowledge and behaviour, found a strong relationship between financial literacy and day-to-day financial management skills and therefore individuals with financial knowledge were more likely to indulge in recommended financial practices hence propelled to use financial services to improve their wellbeing. These findings are consistent with Christelis, Jappelli, and Padula (2010)'s study on cognitive abilities and portfolio

choice which found association between cognitive abilities and stockholding is driven by information constraints like financial literacy, rather than by features of individual preferences or psychological traits. Arrondel et al. (2012); Lusardi and Mitchell (2013); Lusardi (2008a) also established a positive causal relationship between financial literacy and stock market participation, financial literacy and household investment behaviour as well as retirement planning respectively. It is further argued that the more numerate and financially literate an individual is, the more likely they are to participate in financial markets and consequently influencing financial inclusion.

Therefore, building financially inclusive societies requires enhancing financial literacy in terms of providing financial skills and knowledge as well as their application while making financial decisions. This is because financial literacy besides enhancing the level of individuals' ability to make informed financial decision making, boosts confidence, hence improving one's ability to comfortably access and use formal financial services, hence FI (Atkinson and Messy (2011). The study therefore hypothesizes that;

H7: *There is a positive relationship between financial literacy and financial inclusion.*

2.6 Societal Capabilities

In this study, societal capabilities are perceived as the combination of social networks and subjective norms that individuals possess to enable them to achieve financial inclusion. This is mainly with reference to the influence of people individuals at different levels associate with, and the values that determine the way they live or perceive certain life decisions - use of financial services inclusive. This proposition is based on empirical studies that have found a relationship

between individual, social capabilities and financial behaviour respectively in various contexts. Cosma and Pattarin (2012); Lea et al. (1993) argued that the influence of social factors on financial decisions cannot be ignored because they are significantly related to motivations for using financial services. Additionally, norms can influence an individual's financial behaviour through the values predominantly found in culture or religion (Collard et al., 2001; Kempson & Whyley, 1999; Stulz & Williamson, 2003).

The study therefore hypothesizes that;

H15*: There is a positive relationship between societal capabilities and FI among individuals in Uganda.*

2.6.1 Social Networks and Financial Inclusion

As individuals juggle their daily lives, they interact and embed themselves within complex networks or relationships Social networks, one of the topical concepts that has emerged in social science research, is the extent to which individuals are linked together through inter-relationships at different levels and their influence on the way they behave (Granovetter, 1990). Even standard economic theory acknowledges the interactions of many agents that have a profound influence on the outcome of economic processes and behaviour (Sonnemans, Dijk, & Winden, 2006).

Social networks have been defined as a combination of people (referred to as nodes or actors) linked by relationship (referred to as ties) which can be described from either the individual's perspective (ego-centric) or the community (socio-centric) (Ladin & Hanto, 2010). Social networks are also defined as a composition of individuals, firms or organizations by specific

interactions, for instance friendship, exchange of knowledge or other resources (Carpenter, Li, & Jiang, 2012; Granovetter, 1985; Kilduff, Tsai, & Hanke, 2006; Phelps, Heidl, & Wadhwa, 2012). Social networks present a compelling way of examining collective behaviour through individuals' engagement in similar behaviours with others, flow of information within the networks or adopting the social norms within these interactions that inherently influence their behaviour and consequently beneficial outcomes, for instance, FI (Fischer, 1982; Ladin & Hanto, 2010; Okten & Osili, 2004; Rowley, 1997).

Over the years, a number of empirical studies have developed on social networks to address various research questions across a range of disciplines, for instance, health (Ladin & Hanto, 2010; Martínez-López, Perez, & Sánchez-Vizcaíno, 2009; Neblett, Davey-Rothwell, Chander, & Latkin, 2011), leadership studies (Parkinson, 2013), technology (Conyette & Bronner, 2012), finance (Black, 2013; Kyriakopoulos, Thurner, Puhr, & Schmitz, 2009; Rowley, Lown, & Piercy, 2012), entrepreneurship (Naudé, Zaefarian, Najafi Tavani, Neghabi, & Zaefarian, 2014), organizational behaviour (Baker & Faulkner, 2004; Carpenter et al., 2012; Kadushin, 2002), among others. The majority of these studies have provided an understanding of what and how networks are used or perceived as a social phenomenon. Studies on the general context of social networks have examined the causes, predictors or consequences of individual behaviours within the networks and consequently their outcomes (Granovetter, 1985, 2005).

2.6.1.1 Networks Theory

Burt (1982) proposed a theory of individual behaviour which posits that individuals have independent needs but argues that individuals' evaluation of information is affected by others to the extent that one may instead perceive them as socially similar to him/her. For instance,

financial information flowing within the networks may influence an individual's financial behaviour depending on how others perceive or use the same information. This may consequently lead to either the use or non-use of formal financial services to improve their welfare and quality of life.

The social network theory explains the extent to which individuals can come together to create enduring functioning communities and provides an explanation of social interactions from individual resourcefulness to organizational profitability (Granovetter, 1983; Granovetter, 1973). The theory that extends the social capital theory posits that node centrality, density, robustness, and transitivity that enhances relationship (tie) strength and level of interactions between actors affect the degree of information flow and sharing within the networks (Granovetter, 2005; Katz et al., 2005). However this mainly applies to the organizational level. Social network theories have identified the existence of significant ties or relationships to include acquaintances or friends of friends - classified as weak ties whereas close friends, relatives, or neighbors are strong ties.

Granovetter (1983)'s strong-weak ties theory asserts that weak ties provide people with access to information and resources beyond those available in their own close social circles, that is the strong ties. He argued that the importance of strong ties is only perceived as a better motivation for assistance and typically more easily accessible than the weak ties. Pool (1980), in his comment on Granovetter's theory of strong-weak ties, suggested that whether an individual decides to use weak or strong ties for different purposes depends not only on the number of ties that one has at various levels of tie strength but also on the utility of ties of different strength. He further argued that individuals within networks who find weak ties more valuable than strong ties may still be constrained to use the latter if weak ties make up a smaller portion of their contacts.

Conversely, an individual who may find strong ties more relevant for a particular purpose may be socially secluded and forced to fall back on weak ties to realize an effective outcome from the interactions within their said networks.

Following Granovetter (1985)'s seminal study on embeddedness of economic decisions among individuals with social relations, numerous empirical works in various fields have focused on the benefits social ties have had within various contexts. Borgatti and Foster (2003) posit that within social networks, the interactions are composed of different types of ties, typically assumed to function differently within a given context. In their study in which they analyze the emerging network paradigm in organizational research, they argue that a set of ties of a given type, for instance friendship ties, work ties, community ties, among others, are made up of a social relationship and each relation defines a different network although empirically they might be correlated.

2.6.1.2 Measurement of Social Networks

Adler and Kwon (2002), as adapted from Walker, Kogut, and Shan (1997), in their study, identified two views that model the effect of social networks on individuals; a) the flow of resources, for instance, information on financial services that influence the various outcomes within the networks relevant to how effectively the indivduals within the networks actually utilize these resources to succesfully realise their anticipated outcome - FI; b) the influence of social networks that arise from the different ways individual relate with each other.

Carpenter et al. (2012), in their systematic review of methodological issues and choices of social network research, indicated that to effectively examine the influence of newtorks at each level,

there is a need to adopt either an internal or external view that helps in the understanding and constructing of a relevant theoretical model within a given context. Walker et al. (1997) identified the internal view as one that focuses on the network structural patterns rather than the flow of resources that impact individual outcomes.

Conversely, Borgatti and Halgin (2011); Borgatti, Mehra, Brass, and Labianca (2009); Carpenter et al. (2012); Kilduff et al. (2006) identified the external view as one that focuses on whether or not the focal individuals within a network utilise the valuable resources that the ties possess. In other words, how well the individuals within the networks actually utilise the resource endowments to fullfil their outcomes, for instance FI. In this case, network application (external view) is captured rather than structural development where the focus is on the networks themselves (internal view). For a substantial effect of social networks on financial inclusion to be achieved, the study adopts the external view and network application constructs that is a) *network availability* indicating the possession of valuable relations that can be valuably used by individuals and b) *intention* which indicates an individual's desire to use the relationships/ties to achieve a specific outcome and in this case, FI. See studies that have focused on the external view (Borgatti & Foster, 2003; Carpenter et al., 2012; Hallen, 2008; Kilduff et al., 2006).

The network application constucts depict that social networks are intangible resources that are only held by the individuals within the network themselves. Therefore, the flow of resources, for instance information about financial products and services, are ultimately realised at the level at which a particular individual relates with others. Carpenter et al. (2012) referred to this interaction as one between resource holders and seekers for an outcome to be realised by a specific individual within the network. This argument concurs with Hallen (2008) who articulated

that network application captures the focal individual's ability to fully utilise the various endowments that exist within the network.

Several empirical findings have hinged on particular aspects of social networks among individuals and organizations, for instance; determinants of formation and evolution or individual networks (Burkhardt & Brass, 1990; Rosenkopf & Padula, 2008), the relationships (ties) among members (Borgatti & Foster, 2003; Borgatti & Halgin, 2011; Okten & Osili, 2004), embeddedness, patterns (Kilduff et al., 2006; Naudé et al., 2014; Uzzi, 1999) and the flow of resources within networks (Benoit & Van den Poel, 2012; Hallen, 2008), among others. This study conceptualizes social networks from an egocentric perspective consisting of individuals referred to as nodes (Benoit & Van den Poel, 2012; Carpenter et al., 2012; Kadushin, 2002; Knoke & Yang, 2008; Okten & Osili, 2004; Zhang, Lin, & Li, 2012). We view the node characteristics and resource endowments within these networks as the networks composition. The relationships between the nodes will constitute the means through which information, specifically financial information, flows allowing the individuals to evaluate each other thus influencing their financial behaviour and consequently, achieving financial inclusiveness (Podolny, 2001). This study is hinged on the class of studies that have focused on recognizing the outcomes and consequences of social networks on individuals. The study therefore focuses on the network application constructs as predictors of financial behaviour and consequently FI among low income individuals involved in networks at individual level.

Despite the fact that very few empirical studies, mainly at organisational level (Baker & Faulkner, 2004; Black, 2013; Johar & Rammohan, 2011; Kyriakopoulos et al., 2009; Rowley et al., 2012; Rowley, 1997), have been devoted to understanding the influence of social networks on financial

behaviour, social networks have been found to have a significant impact on gaining familiarity of financial information among individuals and organizations (Black, 2013; Conroy, 2005; Okten & Osili, 2004; Uzzi, 1999). Uzzi (1999) argued that social relationships are an important source of financial information and useful in improving an individual's knowledge about existing financial services and possibly how to use them and consequently achieving inclusion. The continuous interactions through meetings and other social activities may influence individuals' behaviours through the creation of awareness and advice on various financial choices or options hence FI.

Evans (2002) argued that individuals and their relation to an overall social context are crucial in society. He further refers to organised collectivities such as unions, political parties, village councils, women's groups as fundamental to individuals' capabilities to choose the lives they have reason to value. They provide a platform for formulating shared values and preferences, and instruments for pursuing them. An individual's ability to value a specific outcome may very often depend on the possibility of acting together with others within the same network who value similar things or outcomes, for instance the benefits of using formal financial services to improve one's welfare.

Social networks emphasize significant relations and interdependence among individuals. Jones (2006); Kamukama and Natamba (2013) revealed that networks increase availability of information about sources of financial services, such as credit. Similarly, Ahlin and Townsend (2007), in their study of the importance of joint liability in lending, also observed that networks act as a screening device or even guarantors for selecting potential clients in the lending process, hence enabling individuals involved in networks access to financial services. Social networks are

also found to be important elements within most formal and informal programmes that provide credit access and saving opportunities to the poor (Van Bastelaer, 2000). Biggs, Raturi, and Srivastava (2002) observed that in accessing financial services, networks help supply information and sometimes mechanisms of enforcement (Narayan & Pritchett, 1999).

Benoit and Van den Poel (2012), in their study investigating kinship network to improve customer retention in financial services, found that if financial service providers ignore the network effects when deciding which customers to market to, it may lead to sub-optimal decisions. This is because the explicit links that exist among social network members are sources of effective communication about the beneficial and effective use of formal financial services such as savings, credit access, insurance and payment systems and the availability of these services within their proximity. This finding concurs with Hill, Provost, and Volinsky (2006), who argued that individuals within networks and their actions are viewed as interdependent rather than independent. Domingos and Richardson (2001) also concur from a networks based marketing view that actually in reality, a consumer's decision to purchase is strongly influenced by his or her friends, family or business partners. This is a fundamental insight for network analysis and this study in the financial inclusion context.

The study therefore argues that for FI as an overall outcome to be achieved, possession of financial knowledge and skills that may be attained from the social interactions is critical to making financial decisions, thus influencing consumer financial behaviour. Perhaps an individual's choice of financial services either for formal or informal is shaped by social capabilities and the extent to which the individual effectively utilises the resource endownments that the networks possess to influence their financial behaviour and consequently FI. This is

consistent with Zhang et al., (2012); Zhou, Shin, Brass, Choi, & Zhang, (2009) who found a significant positive relationship between networks and household choice of financial intermediaries.The study therefore hypothesises that:

H9: *There is a positive relationship between social networks and financial inclusion among individuals in Uganda.*

2.6.2 Subjective Norms and Financial inclusion

Subjective norms refer to an individual's belief about whether significant others think that one should engage in a given behaviour and one's motivation to comply with the specific referents (Ajzen, 1991; Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). Eagly and Chaiken (1993) referred to an individual's significant others as people whose opinions about the behaviour in question are important to the individual undertaking a particular act or behaviour. Ajzen (1991); Fishbein and Ajzen (1975) further referred to subjective norm as an individual's perception of the likelihood that the significant others approve or disapprove of performing the given behaviour. According to the theory of planned behaviour earlier discussed, the stronger the subjective norm is, the more likely the individual will form intentions to perform a particular behaviour. Evidence shows that the reason for this influence and pressure imposed by the social environment, is that an individual would perform the behaviour even though the individual may not be in favor of undertaking a particular activity or behaviour (Venkatesh & Morris, 2000).

Several studies have demonstrated the application and importance of the subjective norms to explain individual behaviour in various domains (Clowes & Masser, 2012; Latimer & Martin Ginis, 2005; Liu, Lu, & Veenstra, 2014; Park, Klein, Smith, & Martell, 2009; Parker, West, Stradling, & Manstead, 1995; Rice, Trafimow, Keller, & Hunt, 2010; Roberto, Mearns, & Silva, 2012). Empirical

studies have shown varied results regarding subjective norms as a predictor of behaviour. Some have shown weak or no significant relationship between subjective norms and behaviour (Chau & Hu, 2001; Mathieson, Peacock, & Chin, 2001; Rice et al., 2010) and other studies have shown significant relationship between subjective norms and behaviour (Armitage & Conner, 2001; Chau et al., 2004; Hagger, Anderson, Kyriakaki, & Darkings, 2007; Latimer & Martin Ginis, 2005; Liu et al., 2014; Roberto et al., 2012; Taib, Ramayah, & Razak, 2008; Teo & Pok, 2003; Venkatesh & Morris, 2000; Venkatesh, Morris, & Ackerman, 2000).

Latimer and Martin Ginis (2005), in their study examining the extent to which people are concerned with others' approval of them within the health context, moderated the behavioural intention and found subjective norms to be a significant predictor of individual behaviour. Also, results in the study by Roberto et al. (2012) within the academic context indicated that the subjective norms whose referents focused on professors were a relevant predictor of first year medical students' behavioural intentions. The study highlighted the importance of role models and mentors as key to teaching factors. This is consistent with the dimensions of enhancing individual self-efficacy, a central tenet in the social cognitive theory, among individuals to influence behaviour within specific contexts (Bandura, 1977, 1986, 1989; Bandura & McClelland, 1977).

Conversely, Armitage and Conner, (2001); Hagger et al., (2007) found that subjective norms had a very weak peripheral influence on exercise intentions while individuals' attitudes instead had a key influence. However this finding has been attributed to the use of a single item measure of the construct. This implies that the subjective norms–behaviour relationship considerably increases when multiple item scales are used. Similarly, Clowes and Masser (2012) in their study

examining the impact of anxiety, attitudes, subjective norms, self-efficacy and intentions to donate blood, found that subjective norms were less reliably linked and had a weak significance to donate blood. However, it is also apparent that although attitude is an important determinant of behavioural intention and behaviour itself, Taib et al. (2008) argues that subjective norms remain a better predictor of individual behaviour.

However to date, few empirical studies have directly addressed how subjective norms interact and influence financial behaviour (Liu et al., 2014; Taib et al., 2008). For instance; in the early economics literature, Akerlof (1980) examined subjective norms which he referred to as social norms, claimed that social norms continue to exist because of the perceived loss of reputation to the individual intending to act from diverting from what the significant others perceive or think about the intended behaviour.

Liu et al. (2014), in their study examining the effect of social norms and financial incentives on market participants' behaviour, found that there was a strong interaction between social norms and financial incentives which significantly influenced the behaviour of the market participants. Similarly, Taib et al. (2008) confirmed that subjective norms positively related to intention to engage in diminishing partnership home financing. Findings are in agreement with earlier studies that were predominantly undertaken in customer acceptance studies (Azam & Lubna, 2013; Gopi & Ramayah, 2007; Lean, Zailani, Ramayah, & Fernando, 2009).

Conversely, Liu et al. (2014) asserts that individuals may not adhere to subjective norms if financial rewards are too appealing for certain market participants. Therefore they explored whether the drive for money is crucial when market participants have the dilemma of choosing between subjective norms and financial rewards. Additionally, Collard et al. (2001) argued that

certain norms that may encompass religion and other cultural values were found to be a major constraint in an effort to access financial services, especially among women, for instance in Somalia. Therefore, norms can affect FI through the values or perceptions of the individuals' significant others who predominantly influence individual behaviour within a particular segment or society. In most cases, what an individual may do is to observe the financial practices of other significant people and the values they uphold, regarding the use of financial services which they may then imitate accordingly. In a related study, Ma and Agarwal (2007, p. 43), showed that "in the disembodied virtual environment, a lack of synchronicity and immediacy can attenuate the effect of social norms on behavior."

Extant literature indicates that previous empirical studies have not clearly highlighted the relationship between subjective norms and FI. The discussion has generally been on the influence of subjective norms on behaviour in other domains. In view of the central role of financial consumers as an avenue for achieving FI, the financial consumer's societal capabilities, such as subjective norms, are likely to provide a clearer understanding of FI among individuals. It is anticipated that an individual's significant others influence changes in individual financial behaviour hence the use of financial services (FI) to improve their welfare and quality of life. Therefore the study hypothesizes that;

H8: *There is a positive relationship between subjective norms and financial inclusion among individuals in Uganda.*

2.7 Financial self-efficacy (FSE) and Financial Inclusion

Empirical evidence shows that one of the major factors that influences financial behaviour is self-efficacy which is described as the level of confidence in one's ability to deal with a financial

situation without being overwhelmed (Amatucci & Crawley, 2011; Dietz, Carrozza, & Ritchey, 2003; Engelberg, 2007; Forbes & Kara, 2010; Lown, 2012). Financial self-efficacy (FSE hereafter) is articulated by the social cognitive theory which explores the role of cognitive thinking in guiding individuals' motivation and financial behaviour (Sandler, 2000). This study focuses on Bandura's self-efficacy concept, a central precept in the social cognitive theory to explain the application of self-efficacy in financial behaviour and consequently FI. Therefore FSE refers to a measure of confidence an individual possesses in one's ability to use financial services. The FSE construct is consistent with Bandura, (1977, 1997, 2005) which asserts that self-efficacy has a greater predictive power when it is domain specific. In addition, a '*one measure fits it all'* approach usually has limited explanatory and predictive value because most of the items in an all-purpose test may have little or no relevance to the domain functioning" (Bandura, 2005, p. 307). Therefore self-efficacy being anchored in the context of the finance domain is proposed as the FSE construct which is consequently examined to explain its influence on FI. For instance, Kinard and Webster (2010) in their study examining the relationship between self-efficacy and unhealthy consumption behaviour, found that self-efficacy is a weak predictor of risk behaviours. The lack of significance was attributed to the use of a general scale rather than the domain specific measure.

Financial decisions have consequently become widely acknowledged as empirical studies begin to lay emphasis on the role psychological factors plays in influencing individual choices and generally financial behaviour. Empirical findings among behavioural economists indicate that many consumers exhibit behavioural biases that financial knowledge and skills independently are not sufficient to induce and explain financial behaviour (Gilovich, Griffin, & Kahneman, 2002;

Hira, 2010; Hira, 2012; Thaler & Sunstein, 2008). Studies in behavioural finance emphasize the relevance of understanding the context within which financial choices are made. Shim, Barber, Card, Xiao, and Serido (2010) contended that individual financial capabilities emerged through hierarchical sequence emphasizing the influence of cognitive and psychological factors, for instance financial knowledge, self-efficacy and attitude respectively, and consequently on financial behavioural decision making.

FSE is proposed to predict the likelihood of an individual being able to access and use formal financial services. Examining the self-efficacy concept and its relation to FI is particularly relevant because a financial consumer's cognitions and behaviours might have notable influence by belief in their abilities to engage in a specific task or activity. Because of the significant influence, self-efficacy has on individual positive change and consequently their behaviour, a number of researchers, though limited in comparison with other disciplines, have explored the relationship between the self-efficacy precept and higher levels of financial well-being (Lown, 2012). Tokunaga (1993) concluded that in fact, financial self-efficacy seems to be the missing link between knowledge individuals possess and effective financial action and outcomes. It is further argued that it is important to note that financial self-efficacy is influenced by various attributes and not necessarily solely financial literacy and skills (Benartzi & Thaler, 2007; Lown, 2012).

Other subjective factors have been either independently or collectively identified to influence an individual's financial self-efficacy levels for instance; personality (Danes & Haberman, 2007), family history (Shim et al., 2010; Weiser & Riggio, 2010), social influence (Bandura, 1994; Hira, 2012; Pajares, 2002; Schunk & Pajares, 2009). Financial capability with reference to FI has also

gradually included self-efficacy in its standard definition and as a significant personal attribute in propelling individuals to access and the use of financial services (Lusardi et al., 2010).

In line with other scholars, Danes and Haberman (2007) found that self-efficacy among teens significantly influenced financial behaviour especially when they have financial knowledge. Tokunaga (1993) also found that self-efficacy significantly increases the ability between unhealthy and prudent credit users. He further found that among other psychological capabilities, self-efficacy helped in predicting the likelihood of credit problems. Schunk (1984)'s findings complement other studies by Anderson, Krajewski, Goffin, and Jackson (2008); Gist and Mitchell (1992) in identifying self-efficacy as an important variable in understanding achievement behaviour in various contexts, FI being one of them.

Locke and Baum (2007) argued that self-efficacy entails a self-regulatory motivational variable which measures how well a consumer executes a course of action. Engelberg (2007) further found that high levels of economic self-efficacy suggest that the interaction between psychological factors and economic self-efficacy influences young adults to cope with rapid economic changes through saving. Therefore, with reference to FI, a high level of self-efficacy is likely to positively influence financial consumers' actions to access financial services. Ozmete and Hira (2011) carried out a conceptual analysis of behavioural theories and their application on financial behaviour. They found that self-efficacy is one of the key determinants of financial behavioural change in different environments. This implies that when an individual consumer has significantly high levels of self-efficacy, it may influence them to access and use a financial institution of their choice, products and services and the persistence they demonstrate in case of adverse challenges in access and usage of the financial services.

Atkinson, McKay, Collard, and Kempson (2007), in their financial capability study undertaken among the financially vulnerable adults in United Kingdom, found that the vulnerable people struggling on low incomes and low levels of education and literacy most likely lacked financial self-efficacy. The findings further indicated that the socio-economic challenges that the low income people faced lowered their self-efficacy or capability to access and use financial services. The study therefore argues that when an individual has high levels of self-efficacy despite the lack of incomes, education and literacy may be driven towards demonstrating persistence to become financially included with anticipation of a positive outcome.

Therefore, people with high self-efficacy tend to focus on opportunities and shun obstacles in anticipation of a positive outcome (Locke & Baum, 2007). For instance, a financial consumer with high self-efficacy will anticipate the improvement in welfare if they were able to save, acquire credit, insurance services, make payments and invest and view the obstacles towards inclusion merely as part of the game. Conversely, Heslin and Klehe (2006)'s study on self-efficacy, found that extremely high levels of self-efficacy may lead to excessive risk taking , dysfunctional persistence and poor performance.

2.7.1 The Social Cognitive Theory (SCT)

The concept of self-efficacy is grounded in Bandura (1977); Bandura, (1986)'s social cognitive theory (SCT) which postulates that individuals are able to control their actions and lives even though their anticipated outcomes may not necessarily be certain. Self-efficacy has been one of the most significant additions to the understanding of individual differences in behaviour within organizations and society at large (Bandura, 2006). The SCT posits a continuous reciprocal interaction between the behavioural aspects, environment and cognitive factors that influence

the individual's accomplishment of an outcome (Compeau & Higgins, 1995). SCT was developed to aid in the understanding of behavioural change through cognitive–behavioural interventions (Bandura, 1977, 1994, 1997). It also posits that individuals possess the potential that enables them control their thoughts, feelings, motivations as well as actions and behaviour. Self-efficacy perceptions are dynamic beliefs that relate to specific performance domains and influence the goals people set, strategies people choose, effort people apply and perseverance people display.

It is further stated that for a task or outcome to be successful, an individual needs to possess both appropriate skills and ability as well as a strong self-efficacy within them relating to that particular task, for instance use of formal financial services as an outcome or task to be achieved (Lent, Brown, & Hackett, 1994). The SCT postulates that self-efficacy beliefs vary on three dimensions; magnitude which refers to the level of difficulty in achieving a specific task; strength refers to the level of how certain an individual is about successfully performing a given task at a particular level of difficulty; and generality, which refers to the extent to which perceptions' magnitude and strength beliefs are limited to a particular situation or vary across tasks (Bandura, 1986). However, a number of studies have restricted their research to the magnitude and strength dimensions and conceptualized self-efficacy as a task specific construct, for instance financial self-efficacy. This inherently refers to the strengths of an individual's beliefs that they are capable of successfully performing various behavioural roles and tasks to enable them to access and use financial services. Bandura (1994) further argued that efficacious people set challenging goals and ensure that they maintain a strong commitment to them. In case individuals are facing challenges in the course of achieving a task to realize an outcome, they increase and sustain their efforts in order to be successful. Conversely, people who doubt their

capabilities to accomplish difficult tasks perceive them as threats as opposed to opportunities that are achievable and usually give up in the face of obstacles or confusion. The levels at which individual self-efficacy is cultivated and developed differs within their given situations linked to their distinct functions either at individual or organisational levels (Bandura, 2005).

Self-efficacy among individuals is enhanced through various forms as stipulated by the SCT. Enactive mastering occurs when an individual has attempted to carry out a task before and emerged successful which boosts self-efficacy because individuals are more certain they can do it well; vicarious experience or modelling which occurs by observing competent individuals perform a similar task and this inherently reinforces the observing individual to take on the task; verbal persuasion occurs when individuals are convinced verbally that they can achieve a particular task. This mode is effective, especially when individuals already believe that they can develop the ability to achieve the task; and physiological or somatic states occurs when an individual ponders on whether to do something by providing themselves clues as to whether they will succeed or fail on the particular task (Bandura, 1986, 1994, 1997, 2005, 2006; Pajares, 1996, 2002; Pajares & Urdan, 2006; Schunk & Pajares, 2009). Therefore, given the amount of information available through the different forms, individuals are able to assess possible options to enable choice and consequently decision making. This applies to the FI context where potential financial consumers make financial decisions relating to the choice of financial products and services they intend to use given the magnitude and strength of financial self-efficacy they may possess.

Compeau and Higgins (1995)'s study of computer self-efficacy, found that behavioural modeling/vicarious experiences combined with verbal/social persuasion approaches to

computer training enhanced self-efficacy and performance. They further argued that the more successful a consumer is in dealing with a behaviour (performance attainment), the more likely they are to develop higher self-efficacy. Actual involvement and positive benefits build confidence in a consumer. The study argues that, illustrating how financial services are accessed and used, in addition to reassuring a consumer that they are capable of using a technology or financial services in this context, can help them build confidence, hence inclusion. Thus, when an individual has high levels of self-efficacy despite the lack of income, education and literacy, the individual may be driven towards demonstrating persistence to become financially included with anticipation of a positive outcome. This will probably happen if financial institutions effectively utilise an individual's sources of self-efficacy; performance attainment', 'vicarious experiences', 'verbal persuasion' and 'affective state' proposed by Bandura (1977) to influence financial inclusion among the low income segments. Understanding a financial consumer's beliefs regarding their financial self-efficacy will perhaps provide assistance in moving individuals closer to making financial decisions that would not only benefit them, but the economy at large through increased levels of FI.

Various scholars in diverse disciplines have applied the concept of self-efficacy with emphasis on an individual's capability to perform a task or behaviour. Self-efficacy has been used over the years in entrepreneurship (BarNir, Watson, & Hutchins, 2011; Locke & Baum, 2007; McGee, Peterson, Mueller, & Sequeira, 2009; Shane, Locke, & Collins, 2003), organizational behaviour (Gong, Huang, & Farh, 2009; Jones, 1986; Salanova, Lorente, Chambel, & Martínez, 2011), health and clinical research (Bandura, 1977; Maciejewski, Prigerson, & Mazure, 2000), student performance (Diseth, 2011; Thelwell, Lane, & Weston, 2007; Weiser & Riggio, 2010); Pajares,

1996), academic motivation (Zimmerman, 2000) and development (Schunk, 1991), management information systems (Compeau and Christopher 1995; Compeau & Higgins, 1995; Igbaria & Iivari, 1995). Generally very few studies have been done in the context of finance inclusion (CFS, 2012; Danes & Haberman, 2007; Leskinen & Raijas, 2006; Atkinson et al., 2007). The current literature on self-efficacy has not laid emphasis on FI - there is need to investigate the relationship between financial self-efficacy and financial inclusion within the finance context. This will provide a better understanding of the importance of financial confidence among individuals while making financial decisions and consequently towards financial inclusion.

H1: *There is a positive relationship between financial self-efficacy and financial inclusion among individuals in Uganda.*

2.7.2 The mediating role of self-efficacy

Self-efficacy influences individual tasks or choices directly and also indirectly to realize positive outcomes that individuals usually anticipate (Bandura, 1994). In line with this, self-efficacy has been used in some studies as a mediating variable and has been identified as a much more consistent predictor of behaviour and behavioural change (Bailey & Austin, 2006; Bandura, 1986; Zhao, Seibert, & Hills, 2005; Zimmerman, Bandura, & Martinez-Pons, 1992). These studies are predominant in the health (Maciejewski et al., 2000), organisational studies (Gong et al., 2009; Stajkovic & Luthans, 1998), entrepreneurship (BarNir et al., 2011; Zhao et al., 2005) and academic learning domains (Diseth, 2011; Hejazi, Shahraray, Farsinejad, & Asgary, 2009; Pintrich & Garcia, 1991; Weiser & Riggio, 2010; Zimmerman, 2000; Zimmerman et al., 1992). Few studies discussed below have examined the mediating role of self-efficacy in the finance context, specifically FI.

Empirical findings over the years have supported Bandura's argument that self-efficacy beliefs actually mediate the relationship between various variables and performance attainments in specific domains. In addition, findings have also demonstrated that self-efficacy beliefs influence these attainments by influencing effort and perseverance to achieve certain outcomes and tasks (Bandura & Schunk, 1981; Bouffard-Bouchard, 1990) which is unlike other personality attributes. For instance Wood, Mento, and Locke (1987) found that academic self-efficacy influenced achievement, indirectly implying that the students believed that their capabilities used more cognitive strategies, like increased levels of self-efficacy to persist through given tasks. These findings are consistent with Pintrich and Garcia (1991), who concluded that self-efficacy played a facilitative role in the process of cognitive engagement among students to realize more successful performance propelled by the will to achieve besides the skills they possessed. In addition, Hejazi et al. (2009) found that academic self-efficacy beliefs have a significant mediating effect on the relationship between identity styles and academic achievement. Maciejewski et al. (2000) in their study about depression found that self-efficacy mediates approximately 40% of the effect of dependent stressful life events on individuals with symptoms of depression which showed a relatively influential effect of self-efficacy. Zhao et al. (2005), in their study examining the mediating role of self-efficacy in development of entrepreneurial intentions, found that the effects of perceived learning from entrepreneurship-related courses, prior entrepreneurial experience, and risk propensity on entrepreneurial intentions were fully mediated by entrepreneurial self-efficacy.

Therefore self-efficacy is a dynamic attribute individuals may possess in various contexts, and hence it can be altered by specific individual behaviour, biological events and the environment

within which they interact (Bandura, 1997; Stajkovic & Luthans, 1998). At present, a detailed discussion on FSE is almost non-existent, considering the fact that in other fields, self-efficacy has been found to have a positive mediating and moderating association to individuals' attitudes and behaviours. Therefore this study is focusing on the mediating role of FSE on the relationships between personal capabilities, societal capabilities with financial inclusion. Based on prior empirical findings the study hypothesizes that;

H16a: *Financial self-efficacy mediates the relationship between personal capabilities and financial inclusion among individuals in Uganda.*
H16a1: *Financial self-efficacy mediates the relationship between financial attitude and financial inclusion among individuals in Uganda.*
H16a2: *Financial self-efficacy mediates the relationship between financial literacy and financial inclusion among individuals in Uganda.*
H16b: *Financial self-efficacy mediates the relationship between societal capabilities and financial inclusion among individuals in Uganda.*
H16b1: *Financial self-efficacy mediates the relationship between social networks and financial inclusion among individuals in Uganda.*
H16b2: Financial self-efficacy *mediates* the relationship between subjective norms and financial inclusion among individuals in Uganda.
H16c: *Financial self-efficacy mediates the relationship between the interaction of PCSC and financial inclusion among individuals in Uganda.*

2.8 Conceptual Framework

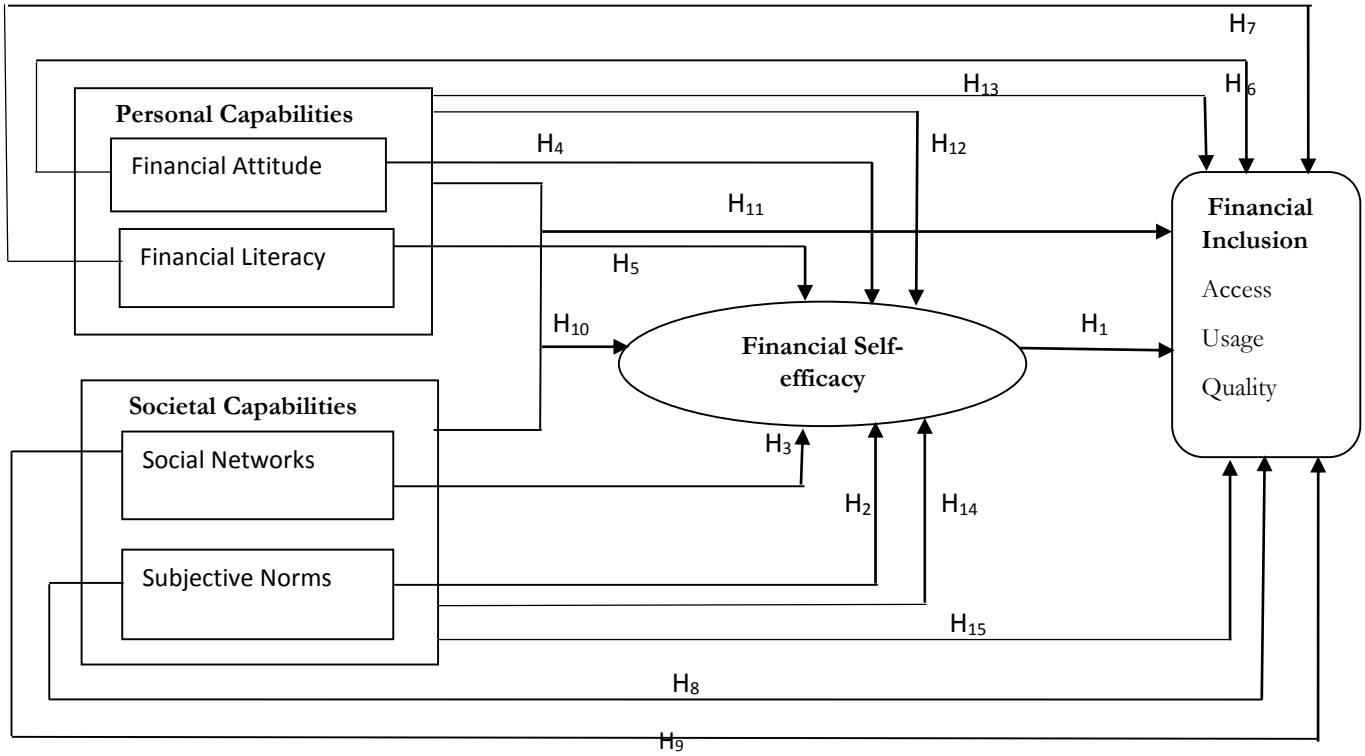


Figure 2.3 Conceptual Framework *(Author, 2015)*

Figure 2.3 illustrates that the individual financial consumer capabilities that influence FI. This proposition is based on empirical studies that have found a relationship between individual capabilities and financial behaviour. Influence of psychological and social factors on financial decisions cannot be ignored because they are significantly related to motivations for using financial services (Cosma & Pattarin, 2012; Lea et al., 1993; Pattarin & Cosma, 2012).

Figure 2.3 proposes that societal capabilities commonly referred to as social factors influence FI among individuals. This proposition is supported by empirical studies that have found a positive relationship between individual societal capabilities and financial behaviour. Individuals are more likely to adopt and reflect the attitudes of those around them when they have interconnected relations and these relations may influence financial behaviour and consequently FI (Jones &

Volpe, 2011; Katz et al., 2005; Okten & Osili, 2004). Additionally, norms can influence an individual's financial behaviour through their values, predominantly culture or religion (Collard et al., 2001; Kempson & Whyley, 1999; Stulz & Williamson, 2003).

In addition, *Figure 2.3* indicates that financial self-efficacy (FSE) directly influences FI of individuals. FSE is perceived to influence individuals' financial behaviour hence FI. It is argued that one of the major factors that influence financial behaviour is self-efficacy which is described as the level of confidence in one's ability to deal with a situation without being overwhelmed (Hira, 2012). Self-efficacy significantly increases the ability to undertake financial decisions (Amatucci & Crawley, 2011; Dietz et al., 2003; Forbes & Kara, 2010; Lown, 2011; Tokunaga, 1993). Therefore, possession of a high level of financial self-efficacy may positively influence FI.

Figure 2.3 further suggests that financial self-efficacy mediates the relationship between personal, societal capabilities and FI. This proposition is based on the argument that personal and societal capabilities may not directly influence FI. To the best of my knowledge, there are no empirical studies that have examined financial self-efficacy as a mediator between personal or societal attributes and FI. Self-efficacy is a motivational construct that has been shown to influence an individual's choice of activities, goals and levels of persistence and performance (Bandura, 1977). Studies that use self-efficacy as a mediator have predominantly been done in health (Arnstein, Caudill, Mandle, Norris, & Beasley, 1999; Benight & Bandura, 2004; Benight, Swift, Sanger, Smith, & Zeppelin, 1999; Woodward & Wallston, 1987), leadership and career development (Gong et al., 2009; Lapan, Boggs, & Morrill, 1989; Nauta, 2004), entrepreneurship (Zhao et al., 2005) and goal setting (Appelbaum & Hare, 1996; Betz & Hackett, 1986; Litt, 1988; Pajares & Miller, 1994; Zeiss, Gallagher-Thompson, Lovett, Rose, & McKibbin, 1999). These

empirical studies have found self-efficacy to positively influence the interaction between variables as a mediating variable.

Finally, according to Sen's capability approach, the study anticipates that financial attitude, financial literacy, social networks, subjective norms and financial self-efficacy can significantly and positively influence an individual's financial inclusion. This premise is fostered by the argument that there is a need to achieve a balanced effect between the demand and supply side by examining behavioural aspects among users of financial services to influence FI (World Bank, 2014; Kumar & Mohanty, 2011; Agrawal, 2008).

Following the review of literature on the influence of the capabilities on FI, the contribution to knowledge in the finance discourse is not only by the effect of the individual personal and societal capabilities but also the combined or interactive effects of PC and SC. This ideally enhances the explanation of FI among individuals in Uganda from a demand side perspective. From the above discussion and review of literature, the following definite research questions and hypotheses presented in Table 2.1 were developed to guide this study.

Table 2.1: Research Questions and Hypotheses

No.	Research Questions	Hypothesis
1.	To what extent does financial self-efficacy influence FI?	***H1:*** There is a positive relationship between FSE and FI among individuals in Uganda
2.	To what extent do personal capabilities influence financial inclusion?	***H13:*** There is a positive relationship between personal capabilities and FI among individuals in Uganda ***H6:*** There is a positive relationship between financial attitude and FI among individuals in Uganda ***H7:*** There is a positive relationship between financial literacy and FI among individuals in Uganda
3.	To what extent do societal capabilities influence financial inclusion?	***H15:*** There is a positive relationship between Societal Capabilities and FI among individuals in Uganda ***H8:*** There is a positive relationship between subjective norms and FI among individuals in Uganda ***H9:*** There is a positive relationship between social networks and FI among individuals in Uganda
4.	To what extent do personal capabilities influence financial self-efficacy?	***H12:*** There is a positive relationship between personal capabilities and FSE among individuals in Uganda ***H4:*** There is a positive relationship between financial attitude and FSE among individuals in Uganda ***H5:*** There is a positive relationship between financial literacy and FSE among individuals in Uganda
5.	To what extent do societal capabilities influence financial self-efficacy?	***H14:*** There is a positive relationship between SC and FSE ***H3:*** There is a positive relationship between social networks and FSE among individuals in Uganda ***H2:*** There is a positive relationship between subjective norms and FSE among individuals in Uganda
6.	To what extent does the interaction of PC and SC influence FI	***H11:*** There is a positive relationship between the interaction of PC and SC on FI among individuals in Uganda
7.	To what extent does the interaction of PC and SC influence FSE	***H10:*** There is a positive relationship between the interaction of PC and SC on FSE
8.	To what extent does FSE mediate the relationship between PC, SC and FI	***H16:*** FSE mediates the relationship between PC and FI ***H16a1:*** FSE mediates the relationship between financial attitude and FI ***H16a2:*** FSE mediates the relationship between financial literacy and FI ***H16b:*** FSE mediates the relationship between SC and FI ***H16b1:*** FSE mediates the relationship between social networks and FI ***H16b2:*** FSE mediates the relationship between subjective norms and FI ***H16c:*** FSE mediates the relationship between the interaction of PC and SC and FI
9.	To what extent does FI, PC and SC differ between the two regions?	***H17:*** There are differences in FI among individuals between the two regions

		H18: There are differences in financial self-efficacy among individuals between the two regions ***H19:*** There are differences in personal capabilities among individuals between the two regions ***H19a:*** There are differences in financial attitude among individuals between the two regions ***H19b:*** There are differences in financial literacy among individuals between the two regions ***H20:*** There are differences in societal capabilities among individuals between the two regions ***H20a:*** There are differences in the influence of social networks among individuals between the two regions ***H20b:*** There are differences in the influence of subjective norms among individuals between the two regions

2.9 Conclusion

Although literature attempts to provide guidance on the definition of financial inclusion and factors that influence financial decisions, limited research has been done combining the personal and societal attributes relating to financial inclusion among individuals. In addition, there is a lack of a robust theoretical framework to clearly explain the financial inclusion phenomenon from the demand side perspective and where literature exists, it is more inclined to the supply side and its influence on financial inclusion.

While the financial inclusion perspectives and the interface may be relevant in improving the access and use of formal financial services among the low income individuals in Uganda, there are limitations in explaining issues regarding the use of the financial products and services. This is purportedly intended to improve the welfare of the low income segments in a developing country like Uganda. There are limitations in comprehensively explaining financial inclusion, for instance the use of limited number of dimensions in measurement as well as the focus on supply side determinants of FI.

The use of a multi-theory approach has been supported by previous scholars (Orobia, 2013; Mafabi, 2012) who assert that the approach leverages the weaknesses of one theory with the strengths of another related theory. Therefore, rather than selecting one theory over the others, the study draws from a number of theories to develop a more comprehensive framework probable of providing a clearer understanding and explanation of individual financial behaviour and consequently financial inclusion. In particular, the direct effects of personal capabilities and societal capabilities on FI are examined. The mediation effect of self-efficacy is also examined on the relationship between both individual and combined variables of personal (financial attitude, financial literacy) and societal capabilities (social networks, subjective norms) with FI is also examined.

CHAPTER THREE

Research Philosophy and Methodology

3.1 Introduction

Following on from the literature review, this chapter provides the research philosophical foundation, techniques and design and overall research strategy that was applied in this study. It highlights the research design, target population and sample size, a discussion of the sampling method used, unit of analysis, questionnaire design and operationalisation of the study variables. It further spells out the questionnaire development procedure used, pre-testing, validity, reliability and data analysis techniques. In addition, this chapter presents the diagnostic statistics aimed at evaluating the data for further analysis, including tests for control of common methods bias, validity and reliability. The chapter concludes with a presentation of the limitations encountered in the data collection process.

3.2 Philosophical Foundation

This study seeks to understand and explain financial inclusion, focusing on the financial consumer capabilities. To achieve this, an empirical investigation was undertaken to investigate the theoretical hypothesized relationships. Specifically, the hypothesized relationships between personal capabilities (financial self-efficacy, financial attitude, financial literacy), societal capabilities (social network and subjective norms) and financial inclusion.

This study is rooted in the positivist epistemology. The positivist epistemology focuses on explaining and predicting what happens in the social world by focusing on revealing causal relationships between its elements or variables (Babbie, 2012, 2013; Crotty, 1998). The positivist approach is applied to research where the overall aim is to record, measure and predict reality

through a set of variables and constructs. It is argued that positivists presuppose that the reality in the societal world is tangible and its meaning can be identified, studied and measured using approaches of natural science (Ardalan, 2009, 2011a, 2011b; Babbie, 2013; Saunders, Lewis, & Thornhill, 2009; Saunders, Lewis, & Thornhill, 2011). Therefore, this study is framed within the objectivist ontological perspective which assumes that there is a single reality in the social world, whereby human behaviour is measured 'from outside' without accessing the meanings that individuals give their measurable behaviour (Sarantakos, 2005). In this regard, a quantitative research methodology and large sample size was applicable, given the expectation of the positivist epistemology and objectivist ontological perspective. This approach enabled the identification of the underlying associations of study independent variables and financial inclusion.

3.3 Research Design and Approach

The study adopted a cross-sectional survey research design which involved collecting data at a particular point in time that is useful in obtaining facts and perceptions of respondents. A cross sectional survey is also useful in making statistical explanations and inferences about the key variables of the study (Saunders et al., 2011).

This research design enables the researcher to make inferences about key variables of the study (Saunders et al., 2011). Specifically, statistical relationships between the personal capabilities (financial attitude, financial literacy), financial self-efficacy, societal capabilities (social networks, subjective norms) and financial inclusion were examined. Cross-sectional studies are perceived

to be relatively inexpensive, faster and easier to do, useful for generating and clarifying hypotheses and can lay the groundwork for decisions about follow-up studies (Sekaran, 2000).

A deductive approach of scientific research was used to carry out this study. An argument is deductive in nature if its conclusion is a logical consequence of its hypotheses (Brink, Van der Walt, & Van Rensburg, 2006; Sserwanga, 2011). In addition, with deductive reasoning, a researcher takes a general theory or idea, tests it and consequently reaches a specific conclusion which enables the researcher to arrive at a valid position of reasoning within a specific context. A deductive approach of investigation and analysis was used because the alternative, the inductive approach, uses exploratory techniques to establish relationships among constructs (Popper, Popper, & Popper, 1972; Saunders et al., 2011; Sserwanga, 2011). An inductive approach, on the other hand, focuses on building theory using exploratory or qualitative techniques to establish patterns or associations between variables. One of the major flaws with inductive reasoning is that it is dependent on observations, and when observations are incomplete, unsound results may be formulated (Saunders et al., 2011). It is assumed to be more accurate to use deductive reasoning to test the extent to which a theory is false (Popper, Popper, & Popper, 1972). Johnson and Turner (2003) further argued that the hypothetical-deductive method is usually used to improve or clarify previous theories according to new knowledge.

3.4 Study Population and Sample size

3.4.1 Study Population and Unit of Analysis

The study population included all adults (above 18 years) within the Central and Northern regions of Uganda provided by the Uganda Population and Housing Census, 2014 (UBOS, 2014). The

target population consisted of 2,471,477 individuals located in these selected districts in the Central region (Kampala and Mukono districts) and Northern region (Maracha and Kaabong) (UBOS, 2014). Individuals were specifically considered because the study is demand side focused at an individual level, and they were able to inform the study on the capabilities relating to financial inclusion. Additionally, the choice of these districts was based on the level of financial inclusion and significant variations that exist in these locations.

The selected districts in the Central region represent highly urban and peri-urban locations that enjoy high levels of financial inclusion whereas the selected districts in Northern Uganda represent the rural locations that register high levels of financial exclusion in Uganda (BoU, 2013; Finscope, 2013; UBOS, 2014). Furthermore, this selection provides a balanced sample of the population, given the differences in economic and social aspects of the rural and urban areas. This mixed approach of selection that was characterised by the rural-urban divide and financially included and excluded, controls for individual specifics which could influence FI from a demand side perspective given the disparities that exist in the formal financial system.

It is evident that the Northern region still has very little coverage by the formal financial service providers, that is the commercial banks, credit institutions and Micro deposit taking institutions (MDIs) as suggested by statistics presented in *Appendix 3b*. However, there is a high concentration of informal financial service providers, for instance the Savings and Credit Cooperatives (SACCOs) and Microfinance Institutions (MFIs) (Finscope, 2013), contrary to the Central region. In terms of access to financial services, access varies by the type of institution and its location. For instance, it is evident that residents in the central region have better access to formal institutions than in the Northern region of Uganda. Kampala (capital city) has generally

better access to financial institutions relative to other regions. This is justified in the poverty incidence statistics, financial access distribution and use of financial services (mutually exclusive) by adult population in 2013 and the Urban/Rural divide percentages presented in *Appendices 3a, 3b and 3c*.

3.4.1.1 Unit of Analysis

As stated earlier, the majority of financial inclusion studies have focused on the supply side perspective, assuming that the providers of financial products and services independently influence financial inclusion. While the supply side perspective is important, it is also useful to note that the supply side, on its own, may not adequately explain the financial inclusion incidence. To achieve a balanced effect and a more complete financial inclusion process, it is important to recognize that individual financial consumers use the products and services available.

Consequently, in this study, the unit of analysis was the adult individual financial services consumer represented by a resident of the selected locations in the Central and Northern regions of Uganda.

3.4.2 Sample size and selection

A sample size of 400 individuals was targeted. This was determined by adopting Yamane (1973)'s sample size selection approach. According to Yamane's formula, sample size is determined by: $n = N/1+N (e)^2$ where: n- is a sample size; N- is total population; and e- is tolerable error. Yamane's sample selection approach was preferred because it fairly yields a fairly representative sample.

In addition, the sample size of 400 generated using this approach comparatively reflects the results one would have gotten using the commonly used table of random samples by Krejcie and Morgan (1970). In addition, the commonly used Krejcie and Morgan (1970) table does not have a direct sample size of a population of 1,275,433. Furthermore, Yamane (1973) is the most recent sample determination approach in the social sciences. However there are more recent sample determination approaches, for instance, a simple approach used for determining covariance but they are mainly used in clinical trials (Borm, Fransen, & Lemmens, 2007).

3.4.2 Sample selection

Field (2009) and Sekaran (2003) argued that in social research, we tend to investigate individuals' social phenomena, based on a relatively representative portion of the population of interest in order to infer robust results and conclusions relating to the study context. Additionally, precision, which focuses on the closeness of the sample statistics to the population parameters and confidence which is the degree of certainty that the selected sample truly reflects the population were taken into consideration (Sekaran, 2003).

Accordingly, a sample of 400 individuals was selected from the two regions of interest since the unit of analysis was the individual financial services consumer as presented in *Appendix 4*. In order to achieve the 400 respondents due to the expected non-response, an extra 100 questionnaires were distributed.

3.5 Sampling Procedure

This study used a multi-stage and stratified sampling method. Consequently, the selection of districts, counties and sub-counties was based on the Uganda Population and Housing Census,

2014 statistics. This procedure was also used in the Finscope (2013) access to finance country survey. Multi-stage and stratified sampling was a convenient and efficient sampling strategy because the target population was divided into groups at different levels. To select the two regions, a purposive sampling method was used because of the theoretical importance where the highly urban and rural regions were of interest for this study.

Stage one – selection of regions:

Uganda consists of four regions and these include Central, Eastern, Western and Northern regions. Purposive sampling used to select the two regions – the Central and Northern regions. This choice was based on the differences in financial inclusion and exclusion as demonstrated in Section 3.4.1.

Stage two - selection of districts:

The districts were selected using a purposive sampling method. Two districts with the highest population and formal financial service points in Central region and districts with the lowest access points in the Northern region were selected, as presented in *Appendix 4*. This is assumed to be representative of the population in the two regions respectively.

Stage three – selection of counties and sub-counties per district: The selected districts were sub-divided into counties and sub-counties which were the smallest sub-national level enumeration areas provided by the National Housing and Population statistics (UBOS, 2014). One county per district was selected. The county with the highest population was selected. Consequently three sub-counties with the highest population were selected where adult (18-65 years) individuals were randomly selected. The selection of age is in line with Allen et al. (2012), who found that

individuals aged 25-64 were more likely to have at least a bank account at a formal financial institution than younger adults or those aged 65 and above.

Stage four: Selection of respondents

Using the sampling frame lists from UBOS (2014), simple random sampling strategy was used to select the 400 respondents in both regions. The lottery method was used whereby each household or business unit was assigned a number which was randomly picked one at a time until a target sample was achieved. Within each household or business unit, an adult representative (18-65 years), who was either the head of household or business unit was purposively selected as a respondent.

UBOS, which is the official custodian for statistical data and information for the Government of Uganda, was used to provide the enumeration maps as presented in map of Uganda, *Appendix 10* and *Appendix 4* with the number and composition of the households in each region (UBOS, 2014).

Response rate

In this study, out of the targeted sample size of 400, the researcher obtained 100% response and this was achieved by selecting 500 respondents beyond the target sample size of 400 whereby 250 questionnaires were distributed in each of the two regions. Of the questionnaires received, 400 were completed fully and therefore usable while of the extra 100, some questionnaires were partially filled and others were not responded to.

The high level of co-operation was attributed to the interviewer administered technique adopted for data collection which enabled a face-to-face interaction between the researcher and respondents. This also improved the issues of clarity of questions and consequently better quality responses and limited response bias. In addition, the researcher maintained contact and utilised the local council leaders who were very supportive in identifying the relevant respondents and maintaining the good relationships needed for the data collection process.

3.7 Questionnaire Design

In this study, an interviewer-administered questionnaire technique was used due to its ability to control for interviewee related problems considering the assumption that the respondents may not have had adequate knowledge to respond to the issues without guidance. Additionally, this technique helped to maximize internal validity and minimize measurement error, which are assumed to be a problem in survey research (Jenkins & Dillman, 1995). A structured questionnaire was used to collect data on the study variables and the questionnaire[1] was designed based on the guidelines stipulated by (Jenkins & Dillman, 1995; Saunders et al., 2011).

The questioning style, language and the context of the questions were modified and simplified to suit the developing country context. Reference was made to national surveys, for instance, the Uganda national population census, (2014) national household and demographic surveys (2013), Finscope surveys (2013) undertaken in English.

In the case where respondents did not understand the English language used in the questionnaire, translators were used, especially in the rural locations of Northern Uganda. The

[1]First and foremost the questionnaire contained a statement assuring respondents of the confidentiality of the information they will provide and an assurance that the information they provide is for academic purposes to increase the response rate.

selected translators were knowledgeable in the study area and were natives within those communities. They were trained on how to address the sections in the questionnaire as well as the study expectations prior the data collection process. The prior training was essential in order to avoid any biases or loss of important information required during the study. Translation was done after they had been taken through the survey structure and procedure required. Additionally, the local leaders were specifically used to grant access to the people in the communities.

Questionnaire items earlier developed and tested were adopted and modified to suit the Ugandan study context. This enabled the development of a seven point Likert scale established to assess the extent to which financial attitude, financial literacy, social networks, subjective norms and financial self-efficacy influence an individual's financial inclusion. The seven-point Likert scale was used because it ensures that respondents make a definite choice rather than an inclination to a neutral response. This is also mainly intended to allow the respondents to be more thoughtful, precise and reduce response bias. Busch, (1993); Reid, Gilbert, and McGrath (1998) argued that eliminating the middle point tends to provide a better measure of the intensity of respondents' attitudes and opinions.

In addition, this study adopted a multiple items approach to measure each construct, which is important in ensuring that the individual capabilities are adequately and comprehensively assessed. Thus, a minimum of six items per construct was observed. This is in line with recommendations of four items per construct as the minimum number of items to enable effective running of reliability and hypothesis tests (Hair, Black, Babin, & Anderson, 2010; Nielsen, 2014). Instructions on how to answer each section were provided immediately before the

questions or statements. The first section of the instrument aimed at assessing the respondent's demographic characteristics followed by the dependent variable - financial inclusion, mediating variable-financial self-efficacy and then the predictor constructs - financial attitude, financial literacy, social networks, subjective norms.

The instrument was then pre-tested through a pilot survey of 90 respondents. This exercise was intended to validate and consequently confirm the adequacy and internal consistency of the scales used to measure the study variables as further discussed in *section 3.10.*

3.8 Operationalisation and Measurement of Variables

As indicated in the theoretical and conceptual framework, the independent variables are the personality capabilities (financial attitude, financial literacy and financial self-efficacy) and societal capabilities (subjective norms and social networks). The mediating variable is financial self-efficacy while the dependent variable is financial inclusion. These variables were measured using item scales developed by scholars drawn from existing literature and behavioural theories that is the theory of planned behaviour (TPB), social cognitive theory (SCT), social learning theory (SLT) and the networks theory.

Modifications to the item scales were made to suit this study context. Although validated measures have been developed in finance research, these have been mainly in developed economies. However, most of the variables in this study have some measures highlighted in the financial inclusion theoretical and empirical literature. These measures are discussed next.

3.8.1 Financial Self-efficacy

Self-efficacy was measured by examining a person's perceived ability to carry out an activity or one's confidence in performing a specific task. Self-efficacy beliefs are operationalised using the generality dimension which refers to one's ability to accomplish or cope with adversity or a situation at hand (Bandura, 1986). In this study, self-efficacy is specific to the finance context, hence financial self-efficacy. This study adopted the financial self-efficacy scale developed by Amatucci & Crawley, (2011); Lown, (2012; Rowley et al., (2012) which was modelled directly from the general self-efficacy scale by Jerusalem and Schwarzer (1989) based on Bandura (1977)'s self-efficacy scale. This study incorporated specific references or items to the financial behaviour context. Respondents were required to indicate their degree of agreement or disagreement with the items developed.

3.8.2 Financial Literacy

Financial literacy was measured by examining an individual's knowledge or understanding and application of the fundamental concepts related to making financial decisions and consequently using the financial products and services – FI (Atkinson & Messy, 2012; Huston, 2010). The respondents were required to indicate how much they know about prescribed finance concepts relating to this study's objectives.

3.8.3 Financial Attitude

Attitude was measured by examining an individual's evaluative judgment of financial inclusion. Attitude is considered as a positive or negative evaluation of performing a particular behaviour in question (Ajzen, 1991). Attitude scholars and theorists, for instance, Armitage and Conner

(2001) suggested that individuals' attitudes are pronounced in terms of cognitive or evaluative aspects that provide information content depending on the specific anticipated outcome. This approach has been successfully utilised in previous studies across domains (Bagozzi et al., 1989; Bagozzi & Burnkrant, 1979; Mirvis & Lawler, 1977; Teo & Pok, 2003; Weber et al., 2002). The respondents were required to indicate their degree of agreement or disagreement towards the use of formal financial services and consequently their financial behaviour. This was done using bipolar adjectives on a semantic differential scale adopted and modified from the theory of planned behaviour (Ajzen, 1991).

3.8.4 Social Networks

Carpenter et al. (2012), in their systematic review of methodological issues and choices of social network research, indicated that to effectively examine the influence of networks at each level, there is a need to adopt either an internal or external view that helps in understanding and constructing a relevant theoretical model within a given context. Walker et al. (1997) identified the internal view as one that focuses on the network structural patterns rather than the flow of resources that impact individual outcomes. Borgatti and Foster (2003); Carpenter et al., (2012); Hallen, (2008); Kilduff et al., (2006) identified the external view as one that focuses on whether or not the focal individuals within a network utilise the valuable resources that the ties/relationships possess. In other words, how well do the individuals within the networks actually utilise the network's resource endowments to fulfill their desired outcomes such as financial inclusion?

In this study, the network application (external view) was adopted because social networks were measured in terms of network availability which indicates the possession of valuable relations that can be used by individuals and network intention which indicates an individual's desire to use the relationships/ties to achieve specific outcomes (Borgatti & Foster, 2003; Carpenter et al., 2012; Hallen, 2008; Kilduff et al., 2006).

3.8.5 Subjective Norms

Subjective norm represents an individual's belief about perceptions and what the significant others think about their behaviour. In this study, the subjective norms were measured by examining the normative beliefs pertaining to the individual's perception of how significant others in their lives would view the use of financial services and consequently their financial behaviour. Subjective norms about the use of formal financial services are assumed to be dependent on an individual's normative beliefs of image, visibility and referent people. The respondents were required to indicate the extent to which other people significant to them influence their financial behaviour. This is in line with other studies that have adopted the same measure of subjective norms and its influence on individual behaviour in various domains (Ajzen, 1991, 2011; Ajzen & Fishbein, 1980; Chau et al., 2004; Clowes & Masser, 2012; Fishbein & Ajzen, 1975; Liu et al., 2014; Rice et al., 2010; Roberto et al., 2012).

3.8.6 Financial Inclusion

As stated in section 2.3.4, a number of scholars have developed indices for measuring FI. To measure financial inclusion, this study adopted the three dimensions used by Hannig and Jansen (2010); Demirguc Kunt and Klapper, (2013); Camara and Tuesta (2014); Sarma, (2008; 2012);

Global Financial Inclusion Database, World Bank, (2012); CFI (2013) and modified access measures (Gupte et al., 2012). *Access,* which refers to the breadth of financial services and individuals' ability to use the available financial products and services that formal institutions avail them; *Usage*, which refers to an individual's ability to derive permanent purpose and utility from a particular financial product or service; *Quality*, which refers to the relevance of the financial product or service to the day-to-day needs of the financial consumer.

In the same regard, the World Bank, (2014) identified the adoption of multidimensional approach to define and operationalise FI. This is vital because it helps to overcome the often mistaken supposition that FI will only be achieved by simply offering enough access points savings products. To address this anomaly towards achieving complete inclusion, issues of frequency of use by individuals, and quality of financial services towards effectively meeting their needs should give better results and perspectives. Therefore, including the usage and quality dimensions in the definition and measurement of FI in addition to the access dimension is believed to provide more useful analytical results and explanation to FI.

Table 3.1: Summary of Operationalization and Measurement of Study Variables

Variable/construct	Definition and operationalization	Source
PERSONAL CAPABILITIES		
Financial Literacy	• An individual's ability to make informed judgement and make effective decisions regarding the use of financial products and services.	Atkinson and Messy, 2012; Huston, 2010; Remund, 2010; Lusardi and Mitchell, 2007, 2011, 2013
Knowledge dimension	• An individual is aware and understands essential or basic financial concepts and products	Atkinson and Messy, 2012; Huston, 2010; Lusardi and Mitchell, 2007, 2011, 2013
Application dimension	• An individual's ability to effectively apply or use knowledge related to personal finance concepts and products.	Atkinson and Messy, 2012; Huston, 2010; Huston, 2009 Lusardi and Mitchell, 2007, 2011, 2013

Financial attitude	Affective and evaluative	• An individual's evaluative judgement of whether the intended behaviour and consequently the desired outcome is favourable or not.	Ajzen 1991; Fishbein and Ajzen, 1975; Eagly and Chaiken, 1993; Hira, 2012; Leonard and Cronan, 2005; Fishbein and Ajzen, 1975
Financial efficacy	Self-	• An individual's confidence that they are capable of taking control over their actions and other events that influence their lives.	Bandura, 1977; Jerusalem and Schwarzer, 1979, 1995; Amatucci and Crawley, 2011; Lown, 2012
	Generality	• This refers to the extent to which an individual's judgement of their confidence applies across different such as the access and use of formal financial services. • It is argued that rating an individual's confidence in being able to manage certain situations like finances is best measured in the generality form.	Appelbaum and Hare, 1996; Bandura, 1977; Jerusalem and Schwarzer, 1979, 1995; Amatucci and Crawley, 2011; Lown, 2012; Locke & Baum, 2007
SOCIETAL CAPABILITIES			
Social Network		A combination of people (actors) linked by relationships (ties) with other individuals by specific interactions	Granovetter, 1973; Burt, 1982; Ladin and Hanto, 2010; Kilduff, Tsai and Hanke, 2006
	Network availability (tie strength) Pattern of relationships	Indicates the possession of valuable relations that can be used by individuals and network intention which indicates an individual's desire to use the relationships/ties to achieve specific outcomes Pattern of relations among contacts within an individual's network in terms of weak and strong ties.	(Granovetter, 1973); Burt, 1992; Ladin and Hanto, 2010; Kilduff, Tsai and Hanke, 2006
	Network intention (resources within the networks)	Indicates an individual's desire to use the relationships/ties to achieve specific outcomes Resources embedded within the network that the individual can access regardless of the strength or the pattern of the ties in the network	Lin, 1999, 2001; Ladin and Hanto, 2010; Kilduff, Tsai and Hanke, 2006
Subjective Norms	Normative beliefs	An individual's belief about what those significant to them think about their choices and consequent	Fishbein and Ajzen, 1975, 1991; Martins, Oliveira and Popovic, 2014; Chau et al.,

	behaviour (spouse, family member, friends, supervisor)	2014; Cloves and Masser, 2012; Liu et al, 2014; Madden et al. 1992; Chang, 1998
Financial Inclusion	A state where all segments in an economy conveniently have access to a full suite of affordable and quality formal financial products & services with utmost dignity.	CFI, 2013; Demirguc-Kunt and Klapper, 2013; Ssonko, 2010; Ddumba-Sentamu, 2009; Global Financial Inclusion Database, World Bank, 2012,2014
Access	The breadth of financial services and individuals' ability to use the available financial products and services that formal financial institutions avail them	Demirguc Kunt and Klapper, 2013; Camara and Tuesta, 2014; Sarma, 2008, 2011; Global Financial Inclusion Database, World Bank, 2012,2014; CFI, 2013,
Usage	An individual's ability to derive permanent purpose and utility from a particular financial product or service	Demirguc Kunt and Klapper, 2013; Camara and Tuesta, 2014; Sarma, 2008, 2012; Global Financial Inclusion Database, World Bank, 2012,2014; CFI, 2013,
Quality	It refers to the financial product design and delivery traits that enhance the value of the financial products and services to clients. The focus of quality of a product/service is on meeting the customers' needs and requirements, and how well the service delivered matches expectations of the customer who is the end user.	Demirguc Kunt and Klapper, 2013; Camara and Tuesta, 2014; Sarma, 2008, 2012; CFI, 2013, World Bank, 2012, 2014; Parasuraman, Zeithaml, and Berry, 1988; Parasuraman et al., 1991; Gronroos, 1988; Hazelett, 1997; Ghobadian, Speller and Jones, 1994; Kamukama. 2013

Source: Literature Review

3.9 Data sources and collection

In this study, data were collected at the same period in time which is referred to as a cross sectional survey, focusing on the same sample units of a population at the same time. The primary data on all constructs were collected through face-to-face interviews with the selected respondents. Data were collected over a period of approximately four (4) months. Firstly, the

pilot data collection was done from December, 2014-January, 2015 with the purpose of ensuring the reliability and validity of the instrument.

Secondly the main survey was undertaken from May, 2015 to July, 2015 with a purpose of testing the study variables to draw meaningful conclusions relating to the study questions and hypotheses earlier developed.

3.10 Reliability and Validity Testing

Reliability refers to the consistency, stability and repeatability of a data collection instrument (Hair et al., 2010). Reliability of the data collection instrument was tested using the Cronbach's alpha coefficient. Validity, which is the extent to which a set of measures is representative of the study concepts, was measured in terms of both internal validity and external validity. The Cronbach alpha measures whether the scale consistently reflects the construct it is measuring (Field, 2009). Factors whose alpha scores fell below the .70 threshold as guided by Nunnally (1978) were dropped. This was done after the pilot survey that consisted of 90 respondents.

Validity is composed of content validity and construct validity. To ensure validity of the instrument, first and foremost, two academic experts and two experts in the practice in the field of banking and finance and psychology were contacted and requested to review and evaluate the questionnaire. This evaluation was in terms of length, design, content and operationalisation of the constructs, language use and understanding for any further improvements. This was done mainly to ensure that the operationalisation of a construct developed from a theory actually measures what the theory says it does (Field, 2009; Nielsen, 2014). The content validity index (CVI) which was established through experts, was greater than .70 for all the study constructs as

presented in Table 3.2. All the concerns and issues from the experts, supervisors and panel were then addressed in the final instrument.

Table 3.2: Content Validity Index (CVI)

Variables	**CVI**
Financial attitude	.80
Financial literacy	.85
Social networks	.90
Subjective norms	.75
Financial self-efficacy	.83
Financial inclusion	.81

Source: Primary data, 2015

3.11 Control for Anticipated Study Biases

There is a tendency for social science researchers to experience or even commit measurement errors considering the high exposure to potential biases in surveys that have a mono-method approach. In this study, common methods bias and endogenity bias were anticipated and hence controlled for within the research design as discussed below.

3.11.1 Common Methods Variance (CMV)

In order to minimize variance, common methods variance was addressed in order to reduce the measurement error which normally affects the validity and conclusions of the relationships between the study measurement variables (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In this regard, procedural remedies provided by Podsakoff et al. (2003) were employed during questionnaire design. This is in line with (Podsakoff et al., 2003) who recommended minimization of CMV at the research design stage rather than as a 'post-hoc' statistical process which were implemented during data collection and were employed during the research design stage.

Procedural remedies

Firstly, the response scale anchors were designed in different directions (these were reverse recoded into the same direction at data entry) for the different study variables. Additionally, psychological separation of questions and response scales were used to minimize response pattern biases. For instance the response format for financial inclusion which is the criterion variable ranged from "strongly disagree (1)" to "strongly agree (7)"; financial self-efficacy ranged from "not at all true (1)" to "exactly true (7)"; financial attitude ranged from "strongly agree (1)" to "strongly disagree (7)"; financial literacy ranged from "nothing at all (1)" to "a great deal (7); social networks ranged from "not at all true (1)" to "exactly true (7 and subjective norms ranged from "strongly disagree (1)" to "strongly agree (7)". Secondly, the measurement variables section in the questionnaire began with the criterion variable followed by the predictor variables. Therefore this approach made it relatively difficult to bias the observed relationship between the predictor and criterion variable, as a result eliminating the effects of inconsistency, increased appeal to answer the questions and was more responsive (Podsakoff et al., 2003). Thirdly, assuring the respondents of their anonymity and confidentiality of participation was established beforehand in order to provide honest responses to the various questions asked.

Statistical remedies

Finally, in relation to statistical remedial procedures, one common statistical technique was used to assess the problem of CMV. Harman's single factor test and exploratory factor analysis (EFA) was used to determine the extent to which the variance of a single factor is accounted for by combining items from both the dependent and independent variables. The results from the test indicated limited method variance because only 17 factors were extracted and no single factor

explained more than 31%, indicating no threat of common methods bias to further analytical estimates.

3.11.2 Endogenity Bias

Endogeneity bias is likely to occur in situations where error terms causing the endogenous variable within a hypothesized regression model are associated with each other. Additionally, this bias is mainly caused by omission of relevant variables explaining the endogenous variable, measurement error and simultaneity of variables (Bollen et. al, 1995).

Endogeneity bias is therefore considered a threat to model approximation, especially when a study consists of more than one endogenous variable (Bollen et. al, 1995). In this study's hypothesized model, both financial self-efficacy (FSE) which is the mediating variable and financial inclusion (FI) - the criterion variable are both endogenously determined as dependent variables. Specifically, FSE is independently influenced by financial attitude (FATT), financial literacy (FLIT), social networks (SOCNET) and subjective norms (SUBNRM) and financial inclusion (FI) influenced by FSE, FATT, FLIT, SOCNET and SUBNRM as presented in the following equations;

$$\text{a) } \mathbf{FSE} = \beta_1 FLIT + \beta_2 SOCNET + \beta_3 FATT + \beta_4 SUBNRM + e_1;$$

$$\text{b) } \mathbf{FI} = \beta_1 FSE + \beta_2 FLIT + \beta_3 SN + \beta_4 FATT + \beta_5 SUBNRM + e_2$$

The interdependence that exists in the model as clearly illustrated by the equations makes it more complicated to accurately or clearly determine the extent to which the predictor variables influence the criterion variable of interest when another exogenous factor FSE is simultaneously used with other predictor exogenous variables which possess residuals 1 and 2 in a similar equation. The potential existence of this effect and overlap in estimates was addressed by

refining the model through the inclusion of confounding variables which enhanced the accuracy and consistency of the estimated results (Bollen, Guilkey, & Mroz, 1995; Timpone, 2003; Villa-Boas & Winer, 1999). In this study confounding variables; marital status (A4 created a dummy variable) and number of dependents (A7) were specifically used since their effect was non-significant when estimated in the model with all study variables.

3.12 Data Exploration and Analysis

Data analysis process involved screening and performing various statistical tests that are relevant in explaining the study variables. Before the data were analysed, they were cleaned by checking for errors and completeness, edited, coded, transcribed and entered into the SPSS statistics software version 21 for screening and preliminary analysis. Analysis of Moments (AMOS 21^{TM}) was then used for Structural Equation Modeling for confirmatory factor analysis and to test the study hypotheses. The data exploration process included analysis of outliers and missing values.

Data were also subjected to the multivariate parametric tests - normality, linearity, multicollinearity between independent variables, homoscedasticity (homogeneity of variance) and independence of error terms to determine whether or not the data was suitable for further multivariate analysis as further discussed in chapter four. Validity and reliability testing used both exploratory and confirmatory approaches and structural equation modelling for testing hypotheses, as discussed in the following subsections.

3.12.1 Missing value analysis

Hair et al., (2010) indicated that in most survey designs missing values, illogical and inconsistent data is difficult to avoid. These errors are attributed either to the researchers at the data entry stage or the respondents' intentional or unintended omissions or unharmonised information while answering the survey questions (Sekaran & Bougie, 2010). Missing values are considered a problem in research because they negatively affect the sample size, statistical results and generally the application of some multivariate statistical tests (Hair, Black, Babin, & Anderson, 2010). Specifically, the test results may be biased or erroneous and reduce sample size in the event that the affected cases are removed from the analysis techniques.

Descriptive statistics using univariate/item frequency distribution and descriptive statistics involving means, maximum, minimum and the range were performed to check for missing data, the nature of the missing values in the dataset and data that was outside the expected ranges according to the measurement scales.

The missing values were identified through a manual cross check of information entered into the system alongside the coded questionnaires. It was noted that a few of the missing values were erroneously obtained during the data entry process and therefore were re-entered while those that were not answered completely were subjected to a statistical test.

To assess whether data were missing completely at random (unintentional), that is without any consistent pattern or missing not completely at random (could be intentional), Little's Missing Completely at Random (MCAR) test (Little, 1988) was used (Hair et.al., 2010; Pallant, 2010). In this study, the MCAR test results (chi-square = 263.906; DF = 1276; Sig = 1.000) had a significance

value greater than .05. According to Little (1988), when the p-value is greater than 0.05, the data are missing completely at random. This is consistent with the null hypothesis that data are missing completely at random which is indicated by the study results.

Consequently, in order to manage the data, missing values were replaced using the linear interpolation method which was selected because it takes into consideration the actual association among variables to replace missing values (Hair et al., 2010). In this study, the reasons for selecting this method were; a) study was cross sectional and data obtained was primary in nature; b) data were on nominal, ordinal and interval scales. The linear interpolation formula used was; $y= y_1+ (x-x_1) y_2-y_1/x_2-x_1$ where x is the independent variable and y is the dependent variable.

This enabled further analysis using SEM which is intolerant to missing data during analysis.

3.12.2 Outliers

Outliers are those values that are significantly and unexpectedly out of range by either being lower or higher than the other values in the data set. These values are usually distinctly different from the majority of the sample responses (Hair et al., 2010; Pallant, 2010).

Outliers are perceived to be more problematic than beneficial in the data analysis process. In particular, outliers do not usually represent the population of the study and may adversely affect statistical tests. For instance, outliers make the r value much higher than it should be resulting into underestimating of the relationship between the variables.

Additionally, they tend to bias the mean and inflate the standard deviation which consequently affects the normality of the data distribution (Field, 2009). Additionally, outlier identification and management established by performing the Z-score data conversion process to specifically detect the outliers, using the condition that Z-score values should be less than or equal to ±3. Consequently as recommended by Hair et al. (2010) the standardisation approach was used to compare data among the study variables using the threshold value of ±3. This implied that any values outside the set threshold were considered outliers within the dataset.

A univariate outlier analysis was done where each construct is examined through frequency tables by critically looking at the minimum and maximum values in line with the scales of measurement (Field, 2009; Hair et al., 2010). The outliers were then corrected to the nearest high or low values on each variable. Specifically, 12 cases; three cases for item of Usage (USA4) and nine cases for item of financial attitude (FATT1) were identified and corrected accordingly.

3.12.3 Testing for Statistical assumptions

In addition, Field, (2009); Hair et al., (2010) indicated that to ensure successful analysis, testing data for compliance with the statistical assumptions underlying multivariate techniques is important because of; a) the complex relationships that exist in numerous variables and b) the general complexity of the analysis and results and consequently ensuring model robustness.

Normality

Normal distribution which is one of the assumptions of parametric hypothesis testing was assessed. This was assessed by examining the extent to which the shape of each dependent

variable distribution is pointy and symmetrical in nature (mean of 0 and standard deviation of 1 (Field, 2009; Hair et al., 2010).

It is recommended that both single variables as well as a combination of study variables are mandatory in multivariate analysis. Normality of the data was assessed using both graphical (histogram, PP plots, QQ plots) and numerical tests. Numerically various tests were used including the skewness, kurtosis, and the Shapiro–Wilk test. Hair et al. (2010) recommends that in order to achieve a fair level of distribution using skewness and kurtosis, distribution values should be ±2.58 at .01 significance level and ± 1.96 at .05 error level respectively.

Skewness and Kurtosis test results indicated that data on all study variables were fairly normally distributed as presented in *Appendix 5a*. Additionally, examination of the histograms, PP Plots and QQ plots indicated that the three variables were fairly normally distributed. This is further indication that there was no need for data transformation since significance value was less than .05.

Linearity

Linearity refers to the level of variation or change between two variables. Linearity further refers to the extent of association between the dependent and independent variables (Pallant, 2010).

In this study, linearity was assessed by examining the line of best fit, the R^2 co-efficient on the scatter plots were moderate to high ranging from .339 to .784 and ANOVA F-statistic which were significant in a simple regression which is a clearer representation of a linear relationship if it actually exits (Hair at al., 2010). The scatter plots showed a linear relationship between the variables and thus upholding the linearity parametric assumption as presented in *Appendix 5c.*

Homogeneity of variance

Homogeneity of variance (Homoscedasticity) refers to the assumption that the dependent variable demonstrates equal levels of variance across the independent variables (Pallant, 2010). According to Hair et al. (2010), homoscedasticity is necessary in order to limit the concentration of variance between the independent and dependent variable - FI within a limited range.

In this study, the Levene test was used to assess equal variance dispersion. Pallant (2010) and Field (2009) recommended that if the Levene statistic is non-significant ($p>.05$), then the data is homogeneous.

Therefore the results indicated a non-significant Levene statistic ($p>.05$) except for financial literacy, financial attitude and subjective norms that had significance values $< .05$ hence the majority of variables upheld the homogeneity of variance statistical assumption as shown below as presented in *Appendix 5b*.

Multicollinearity between the independent variables

Multicollinearity is a situation whereby two or more independent variables in a multiple regression model are highly correlated (Hair et al., 2010; Sekaran & Bougie, 2010). The data were further tested to confirm the absence of multicollinearity within the hypothesised model. The presence of high correlations between the individual independent variables is assumed to make it difficult to find the actual effect of the independent variables on the dependent variable since it increases the standard error (Field, 2009; Hair et al., 2010).

In this study, multicollinearity was assessed using the tolerance value (TV) and the variance inflation factor (VIF). The common cutoff value is a tolerance value of 0.10 and a VIF of 10 (Field, 2009; Hair et al., 2010). The results indicated that all VIF values were less than 5 and the Condition Index (CI) values were less than 30 for all study variables which are within acceptable levels, an indication that there is no multicollinearity as presented in *Appendix 5d.*

Independence of error term

Finally, data were tested for the assumption of independent errors. Independence of error term is justifiable when there is no correlation between residuals or errors. The assumption according to Field (2009) is that for any two observations, the residual terms should not be correlated.

In this study, independence of error terms was tested using the Durbin-Watson test as recommended by Durbin & Watson, (1951); Field, (2009) that recommended a desirable result test statistic of between 2 and 4. The Durbin-Watson test generated a statistic of 1.774 indicating that no autocorrelation existed within the data as presented in *Appendix 5e.*

3.13 Factor Analysis

3.13.1 Exploratory factor analysis (EFA)

An exploratory factor analysis using principal component analysis (PCA) was carried out to identify the underlying relationships or patterns between the study variables. This helped in identifying groups or clusters of variables besides having a data set items reduced to a manageable level while retaining as much of the original information as possible. PCA was selected because its ability to establish relationships between components in the data set.

According to Field, (2009), PCA is also considered to be psychometrically sound and conceptually less complex.

In addition, The Kaiser-Meyer-Olkin (KMO) was also used to measure sampling adequacy. Kaiser (1974) recommends accepting values between 0.5 and 1 (Field, 2009). Further, the Bartlett's test of sphericity was used to measure the statistical significance of the correlations. Bartlett's test should be significant ($p<.05$) which indicates that correlations between items are sufficiently large enough for PCA and consequently EFA (Hair et al., 2010; Field, 2009). The results for KMO for all variables are within the acceptable range and the Bartlett's test results are significant ($p>.05$) which is an indication of the sample adequacy.

Following the PCA, the extracted factors that were retained were mapped on to the different components identified from literature and based on the majority of the items realised. In this study, it was observed that some of the items loaded on different components contrary to where they were previously constructed. This necessitated referring back to literature in order to substantiate the relevant items for each component. There were also some cross loadings, therefore selection was based on the higher loadings with the guidance of literature. The EFA results for all the study variables reveal a certain pattern of factors with all eigen values greater though some contrary to the hypothesized factors as presented in *Appendix 6.*

3.13.2 Confirmatory Factor Analysis (CFA)

CFA aided by AMOS 21™ was used to perform the construct validity tests to assess the extent to which the operationalised constructs actually measure what they are supposed to in line with the theoretical orientation (Hair et al., 2010; Sarantakos, 2005). This was done by first of all specifying separate measurement models for each variable and construct that is financial

attitude, financial literacy, social networks, subjective norms, financial self-efficacy and financial inclusion.

Construct validity was examined through convergent validity which assessed the degree to which the construct measures are associated and discriminant validity the extent to which the constructs are disassociated. In CFA, a comparison of square root of average variance extracted AVE presented in Table 3.3 and correlation or factor loading between constructs and variables was used to determine discriminant validity.

The results indicated that the square roots of the average of variance extracted (AVE) for all the constructs and variables are above 0.7 as shown in Table 3.3. In addition, the square roots of the AVE for each manifest variable were greater than the correlation coefficients with other constructs presented in the zero order correlation, implying discriminant validity. The results confirm construct validity and composite reliability of financial inclusion, financial self-efficacy, financial attitude, financial literacy, social networks, subjective norms scales and their dimensions respectively.

It is therefore construed that there is no significant difference between the hypothesised and observed model regarding the individuals' capabilities explaining financial inclusion in Uganda from a behavioural perspective. A summary of the validity results is shown in Table 3.3.

Table 3.3: Summary of Convergent and Discriminant Validity

Measurement Scale	EFA Communalities Range	CFA AVE	Square root of AVE
Financial inclusion	0.61 - 0.95	0.893	0.945
Financial self-efficacy	0.60 – 0.83	0.654	0.808
Financial attitude	0.51 – 0.74	0.543	0.737
Financial literacy (knowledge)	0.77 – 0.91	0.835	0.914
Social networks(network intention)	0.64 – 0.81	0.760	0.872
Subjective norms	0.62 – 0.75	0.677	0.823

Source: Primary Data, 2015

3.14 Correlation and Regression analysis

The zero order Pearson correlation analysis was performed since the assumptions for parametric tests were met in order to examine associations between the study variables as hypothesised in literature review. The results confirmed linear associations between financial attitude, financial literacy, social networks, subjective norms, financial self-efficacy and financial inclusion.

Hierarchical linear regression (HLR) analysis was also conducted to test the preliminary model fit and to establish the predictive power of the models in criterion variables prior to structural equation modeling technique. HLR was used because it indicates the changes in variance to the model as different predictor variables, including the confounding variables, are introduced in the model.

3.15 Testing for Differences

In this study, hypotheses (***H_{17}- H_{20}***) on the extent to which FI, FSE, PC and SC differed across the two regions were tested using ANOVA involving means and the F-statistic.

3.16 Structural Equation Modeling

SEM is a second generation multivariate modeling technique used to assess the reliability, validity and simultaneously determine relationships between study variables by estimating regression weights, path coefficients and model fit indices (Hair et al., 2010). It is a statistical technique appropriate when using non-experimental data based on individual human perceptions, behaviour and/or beliefs to establish the direct causal contribution or influence of one variable to another (Babin & Svensson, 2012; Bentler, 2007; Blunch, 2008). Additionally, to adequately

and effectively use SEM; an adequate sample size is required and a complete dataset without missing values is required; an estimation of both a measurement model using confirmatory factor analysis (CFA); and consequently the development of the structural model (Hair et al., 2010).

A structural model was used to assess the direct and indirect associations between the latent variables. This was done in order to establish the actual statistical relationships between the variables and compare them with those in the hypothesized model. The structural model was generated and tested for overall goodness of fit. Additionally, parsimonious fit epitomized by parsimony adjusted measures; Parsimony adjusted normed fit index (PNFI), Parsimony adjusted comparative fit index (PCFI) and predictive power were assessed by allowing all exogenous observed and unobserved variables to covary in the proposed structural model.

According to Hu and Bentler (1995), other important model fit tests including baseline indices like Goodness of Fit Index (GFI) (>.95), the Standardized Root Mean Square Residual (SRMR) (>.95), Chi-square statistic (>.05), Comparative Fit Index (CFI) (> .95), Increment Fit Index (IFI) (>.95), Root Mean Square Error Approximation (RMSEA) (<.08), Non-normed fit index (NNFI) were adopted as a benchmark in this study to effectively represent core criterion categories of absolute, incremental and parsimonious model fit indices.

The structural model developed was then examined using the regression weights relating to each variable and path coefficients explained by the standardized estimates (β path coefficients) in order to determine the extent to which financial attitude, financial literacy, social networks, subjective norms and financial self-efficacy influence financial inclusion. Additionally, the

developed structural model was used to test and confirm the hypotheses (H_1 – H_{15}) on the study relationships.

In this study, in order to test for hypotheses H_{16} ($H_{16a1,}$ H_{16a2}, H_{16b1}, H_{16b2}, H_{16c}) full and partial mediation was tested for statistical significance which is a test of whether the independent-financial attitude, financial literacy, social networks, subjective norms, PC, SC and the interaction of PC and SC and dependent variable financial inclusion is completely accounted for by the mediator - financial self-efficacy (Hair et al., 2010). The conditions for mediation recommended by Baron and Kenny (1986) were established and upheld accordingly.

Further, analysis using the maximum likelihood (ML) parametric bootstrap method with 2000 re-samples of 400 observations was done. This is because the higher the re-samples, the better the mediation results. To confirm mediation effects the maximum likelihood method was selected in order to maximize the number of iterations to achieve better results. The analysis provided the average bootstrap estimates of the indirect and direct effects and 95% confidence intervals by determining the 2.5% lower bound values and 97.5% upper bound values in the distribution of the indirect effect estimates from each bootstrap sample.

SEM was further used to confirm and substantiate the hypotheses and mediation effects of the observed variables which include the interaction effect models and unobserved variables of financial inclusion. This was done by testing for both partial and full mediation of competing models to make valid comparisons and ensure superiority of the hypothesised model to draw conclusions.

In order to validate the models, the two competing mediation models were confirmed against the criterion indices earlier discussed. The results indicated that partially mediated models for both unobserved and interaction variable models provided a more accurate and better representation of the study data. Selection of a preferred reference model was done based on; the significant reduction in the chi-square values, the significant differences in parsimony indices measured by PNFI, baseline index comparisons and the percentage of regression paths as guided by Hair et al. (2010).

3.17 Research Plan

Table 3.4: Research Activity Plan

Start Date	Activity	End Date
October, 2014	Proposal presentation to Research Panel	November, 15, 2014
November, 2014	Ethics Committee Approval	December, 2015
December 2014	Pre- test (Pilot survey)	January 2015
May, 2015	Data Collection	August, 2015
September, 2015	Data analysis	October, 2015
December, 2015	Report writing	January, 2016
February, 2016	Report Proof reading Draft Report submissions	February, 2016
February, 21 2016	Submission for examination	March, 31 2016

3.17 Chapter Conclusion

The chapter clearly highlighted the systematic quantitative methodological procedures used to undertake this study in order to draw relevant results as demonstrated in the next chapter. Despite the challenges encountered, the required data was accessed and analysis was done to enable the assessment of the stipulated research questions and hypotheses. The next chapters present the study results and findings.

CHAPTER FOUR

Presentation and Interpretation of Study Results

4.1 Introduction

The major aim of this study was to examine the behavioural determinants related to financial inclusion across two regions of Uganda. The specific focus was on personal and societal capabilities. This chapter presents the results and their interpretation in line with the intended purpose of the study following the methodology laid out in chapter three. This chapter also presents the results on the study sample descriptives, Analysis of Variance (ANOVA), correlations and regressions. It goes further to present the results of the exploratory factor analysis (EFA), confirmatory factor analysis (CFA) and the structural equation modeling (SEM) plus the mediation tests. These generated answers to the research questions and hypotheses summarized in Table 2.1 (Chapter 2) and developed the theoretical model explaining financial inclusion among individuals in Uganda.

4.2 Sample characteristics across regions

In this study, assessment of the respondents' characteristics was done in order to provide a description of the individual financial consumers in the selected Central and Northern regions of Uganda in relation to financial inclusion. This is presented in the following sections 4.2.1 and 4.3.

4.2.1 Cross tabulations of key sample characteristics across regions

In this study, data were collected from two different locations and groups of respondents. The data were collected from the Central region, which is predominantly urban and Northern region,

which is predominantly rural. The key informants included consumers of financial services in the selected locations of Uganda. This is because the personal and societal capabilities being examined in this study could only be assessed at the individual level.

A geographical assessment in terms of gender, marital status, community lived in, education level, monthly income and the job across Central and Northern regions of Uganda was necessary. This was specifically to establish how they demonstrate the facilitation or limitations of access to financial services given the infrastructural and economic differences, cultural and natural barriers, among others. The cross tabulations of the characteristics presented in Table 4.1 were selected because they provide important background information about the individual respondents associated with financial inclusion.

Table 4.1: Cross Tabulation of Demographic Characteristics across Region

Variable		**Region**			**Chi-square**	**Sig.**
		Central %	**Northern%**	**Total %**		
Gender	Male	29.5	22.2	51.7	8.4	.004
	Female	20.5	27.8	48.3		
	Total	**50**	**50**	**100**		
Marital status	Single	10.2	4.0	14.2	45.1	.000
	Married	24	39.2	63.2		
	Cohabiting	6.5	1.0	7.5		
	Separated	4.2	2.8	7		
	Divorced	5.0	3.0	8		
	Total	**50**	**50**	**100**		
Community lived in					388.2	.000
	Rural	0	50	50		
	Urban	50	0	50		
	Total	**50**	**50**	**100**		
Job					.100	.752
	No	17.5	16.8	34.3		
	Yes	32.5	33.2	65.7		
	Total	**50**	**50**	**100**		
Education attained						
	Did not attend	3.0	6.2	9.2		

Primary	3.2	31.0	34.2		
O-level	9.0	5.8	14.8		
A-Level	7.5	2.0	9.5		
Vocational with no formal	0.5	0.5	1	185.9	.000
Vocational after primary	1.5	1.5	3		
Vocational after secondary	3.8	1.5	5.3		
Diploma	7.8	1.5	9.3		
Bachelors	10.2	0	10.2		
Masters & above	3.5	0	3.5		
Total	**50**	**50**	**100**		
Monthly Income (Ugshs.)					
<50, 000	1.2	42.2	43.4		
50,000 – 500,000	12.2	7.2	19.4		
550,000 – 1,050,000	14.2	0.2	14.4		
1,050,000 – 1,550,000	7.8	0.2	8.2	299.9	.000
1,550,000 – 2,050,000	4.8	0	4.8		
2,050,000 – 2,500,000	2.8	0	2.8		
2,050,000 & >	7.0	0	7		
Total	**50**	**50**	**100**		

Source: Primary Data, 2015

The findings presented in Table 4.1 suggested that;

There were significant gender differences across the two regions (Pearson Chi-Square Value=8.420; Df=1; Sig. =.004) with more males (51.7 %) than females (48.3%). Of the 52% total male respondents, there were more male respondents in Central region (30%) compared to (22%) in the Northern region. Additionally, of the 48% female respondents, there were more female respondents (28%) in Northern compared to (21%) females in the Central region. The results infer that gender disparities across regions reflect differences in the locations.

We note that gender is a vital feature in determining financial inclusion. This corroborates with Allen et al., (2012); Demirguc-Kunt and Klapper, (2012b); Johnson, (2004) who found that gender is indirectly related to access to financial services. Additionally, their findings indicate that there are significant gender gaps, especially in developing countries like Uganda, in terms of likelihood of using formal financial services.

There were significant differences in marital status across regions (Pearson Chi-Square Value=45.091; Df =4; Sig. =000). This is an indication that in this study, majority of respondents were married in both regions. Of the 62.3%, more respondents (39%) were married in the Northern region compared to (24%) in the Central region. The least were divorced (3%) Northern compared to (5%) in the Central region. The results demonstrate a likelihood that the married individuals were more likely to use banking services. This is reflected by Camara et al. (2014); Godwin and Carroll (1986); Martínez et al. (2013) in their global findex surveys who found that users of banking services were more likely to be married individuals.

There were no significant differences in terms of job or employment status across regions (Pearson Chi-Square Value=100; Df=1; Sig. = .752). The majority of respondents had jobs (65.7 %) in both Central and Northern regions compared to (34.3%) who had no jobs in Central and Northern region respectively. The findings imply that individuals in both regions were likely to participate in the banking system given that they had possessed some level of income from their jobs. Employment was used in this study because it corroborates with studies that have demonstrated its importance towards financial inclusion. Allen et al. (2012); Kempson and Whyley (1999); Sarma and Pais (2011) found that employed individuals were more likely to have a bank account and that those with irregular and insecure employment were less likely to participate in the formal financial system. Similarly, Godwin (1997) found that households without working adults were found to experience more exclusion than other groups. This study further corroborates Kempson and Whyley (1999) who found that employment increased the

likelihood of individuals accessing and using financial services in relation to income. This was in terms of affordability and also because employers perhaps require accounts to pay their salaries. There are significant differences of education level across regions (Pearson's Chi square Value=8.420; Df=1; Sig. = .004). Majority (34.2%) of the respondents had completed at least primary level education. Specifically, the respondents in Central region (10%) had Bachelor's degrees compared to (0%) in Northern Uganda. Majority of respondents in Northern Uganda (31%) had Primary level education compared to (3%) in Central region. The lower levels of education in Northern region are due to the infrastructural and amenities barriers as opposed to the endowed urban Central region. Camara et al. (2014) argued that when individuals have a lower level of education, they are more likely to experience a barrier to access and use financial services compared to those with higher education levels. This is mirrored in the results regarding education level attained by residents in the northern and central regions which are predominantly urban and rural respectively.

These study results identify with Demirguc-Kunt and Klapper, (2012b); Demirguç-Kunt and Klapper, (2013) which found that in economies in the poorest income quartile, for instance Uganda, the disparities in account penetration were significantly affected by education levels.

There are significant differences of monthly income across regions (Pearson's Chi square Value =299.897; Df=6; Sig. =.000). The majority of respondents (43.4%) earned a monthly income of less than Ugshs. 50,000 ($15). Specifically, in the Northern region, the majority of respondents (42%) earned a monthly income of less than Ugshs.50, 000 ($15) compared (1%) in the Central region. In the same regard it is also important to note that respondents in the Central region earned a monthly income of Ugshs. 550,000 ($152) - 1,050,000 ($290) (14%) compared to (0.2%)

in the Northern region. The results suggest variations in income across regions with those in the urban areas clearly earning more than those in the rural locations. Allen et al. (2012); Sarma and Pais (2011); Finscope, (2013) show that income was a significant feature in explaining financial inclusion across regions at both individual and country level; the higher the income level, the higher the levels of financial inclusion and vice versa.

The importance of monthly income in this study is in line with empirical studies for instance Camara et al., (2014); Kempson et al., (2004); Sarma & Pais, (2011) who found that at individual level, income is an important part in explaining variations in account penetration. Additionally, besides increasing the probability of having an account, income was found significant in increasing the odds of financial inclusion. This infers that the chances of being financially excluded greatly increase with a fall in individuals' income.

4.3 Demographic descriptive statistics

The descriptive statistics for categorical data that included gender, marital status, education level attained, job and income and continuous data - age and number of dependents were separately run. This was necessary to obtain a description of the respondents before further analysis for the respondents in the dataset. The selected demographic variables were selected because various empirical studies have shown that they play an important part in explaining variations in financial behaviour. For categorical data, the frequencies and corresponding percentages of the dataset were determined. Additionally, for continuous data, frequency (N), maximum and minimum values, mode and median were determined accordingly.

Table 4.2: Descriptive Statistics for Continuous Data

	N	Minimum	Maximum	Mean		Std. Deviation	Median	Mode
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic
Age	400	18.0	62.0	33.828	.4729	9.4576	32	32
No. of Dependants	400	.0	20.0	4.426	.1718	3.4363	4.426	4
Valid N (listwise)	400							

Source: Primary data, 2015

In this study, we particularly used the mean, mode and median statistics to determine the age and number of dependents of respondents in order to leverage the weaknesses and/or strengths of each statistic in representing the respondents. For instance, mean is influenced by extreme scores while mode takes on many values, whereas median values are not affected by extreme scores on either end of the distribution (Field, 2009).

Age

Age of respondents ranged between ages 16 and 62 years with a mean of 34 years and standard deviation of 9.46 and median of 32 and mode of 32 years which indicates the age of the majority of respondents who were mainly youth. The interest in the age variable is in line with Allen et al. (2012) who found that individuals aged 25-64 were more likely to have at least a bank account at a formal financial institution than younger adults or those aged 65 and above.

Number of dependents

The results indicate that the respondents on average had four dependents. This is portrayed in the mode statistic which is 4 and median of 4.4. For instance, Martínez et al. (2013) found that heads of households reduced the likelihood of being financially included because they had family members who financially depended on them. This perhaps implies that the income they would have used to purchase financial services is diverted accordingly.

4.4 Testing for Differences in the Study Variables Across Regions

In this study, the One-Way analysis of variance (ANOVA) test was used to determine whether there were significant differences between the two groups that is the Central and Northern Uganda where the respondents were randomly equally selected. This test was mainly undertaken to answer research question one whether there is a difference in personal capabilities (financial attitude, financial literacy), societal capabilities (social networks, subjective norms), financial self-efficacy and financial inclusion in the two regions. The null hypothesis (H_0) was that the means between the two regions of Central and Northern regions are equal. Further interest in knowing whether the groups differ in terms of the independent variables which perhaps may influence the overall effect on the criterion variable - financial inclusion was also determined, by measuring personal capabilities (financial attitude, financial literacy), societal capabilities (social networks, subjective norms), financial self-efficacy and financial inclusion.

Post-hoc comparisons, because of their ability to clearly determine where the difference in the groups lie as well as ability to minimize type 1 and 2 errors was used to determine the differences (Pallant, 2010). Calculation of the F-statistic which indicates the differences in groups was determined and used to infer conclusions as presented in Table 4.16. If Sig, value ≤.05, then there are significant differences among the scores on financial inclusion for the two groups.

In this regard, the following hypotheses were tested accordingly; ***H17****: There are differences in FI among individuals between the two regions,* ***H18:*** *There are differences in financial self-efficacy among individuals between the two regions,* ***H19:*** *There are differences in personal capabilities among individuals between the two regions,* ***H19a:*** *There are differences in financial attitude among individuals between the two regions,* ***H19b:*** *There are differences in financial literacy*

among individuals between the two regions, ***H20:*** *There are differences in societal capabilities among individuals between the two regions,* ***H20a:*** *There are differences in the influence of social networks among individuals between the two regions* ***H20b:*** *There are differences in the influence of subjective norms among individuals between the two regions.*

Table 4.3: Analysis of Variance (ANOVA) of the Study Variables

		N	Mean	Std. Deviation	Std. Error	Sum of Squares	df	Mean Square	F	Sig.
Financial Inclusion	Central	200	5.0788	.71903	.05084	897.973	1	897.973	2033.763	.000
	Northern	200	2.0822	.60503	.04278	175.730	398	.442		
	Total	400	3.5805	1.64042	.08202	1073.703	399			
Financial Self-efficacy	Central	200	5.3650	.93603	.06619	447.323	1	447.323	401.109	.000
	Northern	200	3.2500	1.16373	.08229	443.855	398	1.115		
	Total	400	4.3075	1.49450	.07472	891.178	399			
Financial Attitude	Central	200	5.5800	.77239	.05462	156.250	1	156.250	190.211	.000
	Northern	200	4.3300	1.02290	.07233	326.940	398	.821		
	Total	400	4.9550	1.10046	.05502	483.190	399			
Financial Literacy	Central	200	4.3300	1.07090	.07572	729.000	1	729.000	915.737	.000
	Northern	200	1.6300	.66733	.04719	316.840	398	.796		
	Total	400	2.9800	1.61900	.08095	1045.840	399			
Personal Capabilities	Central	200	4.9550	.82394	.05826	390.063	1	390.063	710.454	.000
	Northern	200	2.9800	.64745	.04578	218.515	398	.549		
	Total	400	3.9675	1.23501	.06175	608.578	399			
Network Intention	Central	200	5.5350	.68639	.04854	342.250	1	342.250	298.123	.000
	Northern	200	3.6850	1.35089	.09552	456.910	398	1.148		
	Total	400	4.6100	1.41524	.07076	799.160	399			
	Total	400	1.92	.833	.042	277.110	399			
Social Networks	Central	200	3.5567	.50434	.03566	53.284	1	53.284	165.278	.000
	Northern	200	2.8267	.62484	.04418	128.311	398	.322		
	Total	400	3.1917	.67463	.03373	181.595	399			
Subjective Norms	Central	200	5.6050	.82607	.05841	322.203	1	322.203	315.407	.000
	Northern	200	3.8100	1.16649	.08248	406.575	398	1.022		
	Total	400	4.7075	1.35148	.06757	728.778	399			
Societal Capabilities	Central	200	4.5808	.52777	.03732	159.385	1	159.385	388.180	.000
	Northern	200	3.3184	.73665	.05209	163.417	398	.411		
	Total	400	3.9496	.89946	.04497	322.803	399			

Source: Primary data (2015)

The results from the cross tabulations indicated the following:

There are significant differences (F= 2033.763; Sig. =.000) in FI indicators across the regions and that there are higher levels of FI in the Central (Mean=5.0788) compared to Northern region (Mean=2.0822). The study hypothesized that ***H17:*** *There are differences in FI among individuals between the two regions*, based on the results, the hypothesis was supported that there are differences in financial inclusion among individuals in the Central and Northern regions of Uganda.

There are significant differences (F= 201.109; Sig. =.000) in financial self-efficacy across the regions and financial self-efficacy is more in the Central (Mean=5.3650) compared to Northern region (Mean=3.2500). The study hypothesized that ***H18:*** *There are differences in financial self-efficacy among individuals between the two regions.* Based on the results, the hypothesis was supported that there are differences in financial self-efficacy among individuals in the Central and Northern regions of Uganda.

There are significant differences (F=710.454; Sig. =.000) in personal capabilities (PC) across the regions and personal capabilities are more in the Central (Mean=4.9550) compared to Northern region (Mean=2.9800). The study hypothesized that ***H19:*** *There are differences in personal capabilities among individuals between the two regions.* Based on the results, the hypothesis was supported that there are differences in personal capabilities among individuals in the Central and Northern regions of Uganda.

There are significant differences (F=190.211; Sig. =.000) in financial attitude across the regions and financial attitude is more in the Central (Mean=5.5800) compared to Northern region

(Mean=4.3300). The study hypothesized that ***H19a:*** *There are differences in financial attitude among individuals between the two regions*. Based on the results, the hypothesis was supported that there are differences in financial attitude among individuals in the Central and Northern regions of Uganda.

There are significant differences (F= 915.737; Sig. =.000) in financial literacy across the regions and financial literacy is more in Central (Mean=4.3300) compared to Northern region (Mean=1.6300). The study hypothesized that ***H19b:*** *There are differences in levels of financial literacy among individuals between the two regions*. Based on the results, the hypothesis was supported that there are differences in financial literacy among individuals in the Central and Northern regions of Uganda.

There are significant differences (F=388.180; Sig. =.000) in societal capabilities (SC) across the regions and societal capabilities are more in the Central (Mean=4.5800) compared to Northern region (Mean=3.3184). The study hypothesized that ***H20:*** *There are differences in societal capabilities among individuals between the two regions*. Based on the results, the hypothesis was supported that there are differences in societal capabilities among individuals in the Central and Northern regions of Uganda.

There are significant differences (F= 298.123; Sig. =.000) in social network intention across the regions and network intention is more in the Central (Mean=5.5350) compared to Northern (Mean=3.6850). There are significant differences (F= 165.27; Sig. =.000) in social networks across the regions and social networks are more in the Northern region (Mean=3.1917) compared to Central (Mean=2.8267). This study hypothesized that ***H20a:*** *There are differences in the influence*

of social networks among individuals between the two regions. Based on the results, the hypothesis was supported that there are differences in social networks in which individuals are embedded in the Central and Northern regions of Uganda.

There are significant differences (F= 315.407; Sig. =.000) in subjective norms across the regions and subjective norms are more in the Central region (Mean=5.6050) compared to Northern region (Mean=3.8100). The study hypothesized that ***H20b:*** *There are no differences in the influence of subjective norms among individuals between the two regions*. Based on the results, the hypothesis was supported that there are differences in subjective norms in which individuals are embedded in the Central and Northern regions of Uganda.

4.5 Testing for Construct Reliability

It is important to ensure that the scales included in the study are internally consistent and adequately measure the same underlying construct. In this study, the reliability of the items measuring financial attitude, financial literacy, social networks, subjective norms, financial self-efficacy and financial inclusion was assessed to ensure that the items used were actually measuring these constructs. One of the commonly used indicators of the degree of consistency between the measurement items is the Cronbach alpha coefficient. Table 4.4 presents the reliability Cronbach alpha coefficient results and number of items which were retained and dropped at each stage of the study from the pilot study, main survey and the confirmatory factor analysis (CFA) reliability assessment. The results specify that the reliability of the instrument was satisfactory for both the pilot and main study and further confirmed by the composite reliability using confirmatory factor analysis (CFA). Cronbach Alpha coefficients above .70 which is the minimum threshold according to (Hair et al., 2010; Nunnally, 1978) were considered accordingly.

Table 4.4: Summary of Reliability Results

		Financial attitude	Financial literacy	Financial self-efficacy	Social networks	Subjective norms	Financial Inclusion
Pilot study	Alpha	0.93	0.96	0.93	0.97	0.97	0.96
No. Items		10	14	11	14	8	37
Main study	Alpha	0.9	0.75	0.94	0.89	0.93	0.99
No. Items		08	07	07	10	8	39
Confirmatory Factor Analysis	Alpha	0.96	0.99	0.77	0.83	0.8	0.94
No. Items		4	4	6	4	4	8

Source: Primary Data, 2015

4.6 Construct Validity Using Exploratory Factor Analysis (EFA) and Confirmatory Factor analysis (CFA)

4.6.1 Exploratory Factor Analysis (EFA)

Exploratory factor analysis, typically known as a data reduction procedure, is used to form a smaller number of items per construct (Pallant, 2010). Further, factor analysis determines the underlying relationships that exist among the subscales and variables being examined prior to further multivariate analysis. In this study, principal component analysis (PCA) was used to transform the data for all the variables using their variances into the smaller required combinations. Stevens (2012) argued that the preference for PCA over other factor analysis methods, for instance, image factoring, alpha factor, unweighted least squares, among others, is mainly because PCA minimizes exposure to "*factor indeterminacy*" which is commonly experienced during the factor analysis process. Therefore, in this study EFA using the PCA method was used to identify the actual factors that correlate and explain common variance of the study variables, hence reducing the factors to the most suitable ones to support further analysis. It is

important to note that in cases where there was cross loading of a single item on two components, the higher value was retained.

Besides, it was important to assess the strength of the inter association of the items as well as the adequacy of the sample to support EFA determination. Using Kaiser Meyer Olkin's (KMO) measure of sampling adequacy and Bartlett's test of sphericity, factorability of the dataset was established. It is recommended that the overall sample size considered adequate for EFA should be above 150 which was consistent with the study sample size of 400. Additionally, KMO should be greater than .6 (Kaiser, 1974) and Bartlett's test of sphericity should be significant (p=.05) (Hair et al., 2010; Pallant, 2010). The results presented in the following section 4.5.1 suggest that this study was suitable for factor analysis, hence demonstrating the factor loadings and how they are differentially associated with the variables financial attitude, financial literacy, social networks, subjective norms, financial self-efficacy and financial inclusion respectively.

4.6.1.1 Financial Inclusion

Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy =.979, Bartlett's Test of Sphericity; Approx. Chi-Square=25038.638; DF=741; Sig. =.000

Table 4.5: Rotated Component Matrix for Financial Inclusion

	Access	Quality	Usage
The nearest bank is less than 5km from in my home	.816		
There is an usable access road leading to the nearest formal financial institution	.814		
There is a place near my home where I can easily send and receive money	.812		
I live within less than 1km of an ATM that I can easily visit to access my account	.809		
There are a number of banking agent services that I can easily visit near my home	.803		
I live within 5km of a place where I can pay my bills	.802		
I have the money required to run a savings account	.753		
There are insurance operators near my home that I can easily visit	.740		
I have used mobile money services to pay bills	.738		
I have used mobile money services to send money	.736		
I am aware of the formal products and services	.720		
The cost of borrowing money from formal institutions affordable	.699		
I have used my savings account to save for any emergencies	.677		
I have used mobile money services to receive money	.677		
I have used my savings account to save for future expenses	.669		
I have enough money to purchase insurance services	.663		
There is available banking infrastructure e.g. ATMs in my area	.636		
When I have an unpleasant experience with the services, the bank staff solve the issue immediately		.818	
When I experience a problem with my transactions, I get quick help		.793	
I receive prompt information regarding my transactions		.766	
I am certain of the safety of my transactions when using formal services		.765	
I find the staff in the formal financial institutions friendly and helpful		.764	
I am assured of getting customer support on the use of the financial services		.762	
I am able to carry out my transactions because the banking hours are convenient		.762	
I am able to utilise a variety of financial services offered		.759	
I am sure of the confidentiality of my account transactions		.757	
I feel that it is more reputable to associate with formal financial institutions		.755	
Imposing service charges is fair to bank customers (withdrawal fees, payments fees)		.745	
The formal financial institutions have modern equipment that make transactions easy		.728	
The modern equipment and décor make formal financial services more attractive		.723	
I have the necessary documents required to open an account		.666	
I know which documents are required to open a bank account		.635	
I have used insurance services for other in forms of coverage			.791
I have used insurance services for health cover			.750
I have received a loan from a bank to finance personal needs			.747
I have received a loan from a bank for my business			.677
I have used my bank to transfer money			.620
I have used the bank account to receive remittances(money)			.612
I have used my bank account to receive my salary			.541
Eigen Value	2.753	2.149	1.467
% of variance	32.64	30.67	16.55
Cumulative % of Variance	32.64	63.31	79.86

Source: Primary Data, 2015

The KMO and Bartlett's test of sphericity for financial inclusion supported the factorability of the correlation matrix. The results of PCA in Table 4.5 and parallel analysis generated the three

factors that is access, quality and usage with eigen values greater than 1 (2.8, 2.1, 15) explaining 32.6%, 30.7% and 16.6% of the variance explanation respectively. Additionally, the factors explained a total variance of 80%. The interpretation of the results were consistent with previous financial inclusion research with a few modifications as conceptualised in this study for the dataset of 400 individuals that was randomly generated for this study.

4.6.1.2 Financial self-efficacy

KMO =.880; Bartlett's Test of Sphericity; Approx. Chi-Square=1955.360; df= 21; Sig. =.000

Table 4.6: Component Matrix for Financial Self-efficacy

	Generality
I can confidently deposit money in the bank to plan for the future	.877
I have what it takes to use financial services to manage my financial goals	.846
I can easily spend less that my income each month	.841
I have the ability to borrow money from the bank	.835
I can easily save part of my income each month	.822
It is easy for me to stick to my savings plan against my income	.722
I ensure that I pay back money that I have borrowed in time	.702
Eigen Value	4.58
% of Variance	65.45
Cumulative % of Variance	65.45

Source: Primary Data, 2015

The KMO and Bartlett's test of sphericity for financial self-efficacy supported the factorability of the correlation matrix. The results of PCA in Table 4.6 and parallel analysis generated the one component – generality with an eigen values greater than 1 (4.6) explaining 65.5% of the total variance. The interpretation of the results were consistent with previous financial self-efficacy research that used the generality scale to measure self-efficacy with a few modifications as conceptualised in this study context.

4.6.1.3 Financial Attitude

KMO =.902; Bartlett's Test of Sphericity; Approx. Chi-Square= 1880.041; Df=28; Sig. =.000

Table 4.7: Component Matrix for Financial Attitude

	Evaluative
I think that using formal financial services is safe for financial transactions	.861
It is wise to borrow money from formal financial services	.819
In my view service charges of formal services are cheaper than informal services	.796
In my opinion, I can earn interest on my savings with formal institutions	.793
I find it convenient to use the remittance services to send and receive money	.786
I believe using insurance services is important to protect me against loss of assets	.767
I think changing from informal sources of credit to formal is a wise idea	.759
I believe that it is faster to get a consumption loan from a bank	.711
Eigen Value	4.962
% of Variance	62.03
Cumulative %	62.03

Source: Primary Data, 2015

The KMO and Bartlett's test of sphericity for financial attitude supported the factorability of the correlation matrix. The results of PCA in Table 4.7 and parallel analysis generated the one component – affective dimension with an eigen value greater than 1 (4.9) explaining 62% of the total variance. The interpretation of the results were consistent with previous attitude scales used in empirical studies research that used the affective scale to measure, however a few modifications were made to suit this study context.

Table 4.8: Component Matrix for Financial Literacy

	Financial Knowledge
Credit terms	.956
Insurance	.946
Interest rates	.940
Remittances (money transfer services)	.936
Inflation	.927
Loans	.917
Savings	.880
Eigen Value	6.044
% of variance	86.34
Cumulative %	86.34

Source: Primary Data, 2015

For financial literacy measurement scale, the KMO and Bartlett's test supported the factorability of the correlation matrix. The results of PCA in Table 4.8 and parallel analysis generated the one

component – financial knowledge with an eigen value greater than 1 (6) explaining 86.3% of the total variance. However items for financial application used to explain financial literacy were removed. The explanation for this change of loading and consequent deletion of items through the commonalities could have been that financial application could have been interpreted by respondents as financial knowledge hence modifications were further made to accommodate such perceptions. The generated component of financial knowledge was still consistent with previous empirical studies and scales used to measure financial literacy.

4.6.1.5 Social Networks

KMO= .942; Bartlett's Test of Sphericity; Approx. Chi-Square= 3719.438

Table 4.9: Component Matrix for Social Networks

	Network Intentions
I use the opportunities within my networks to attain my financial goals	.900
I use opportunities within quickly in order to attain my financial goals	.867
People in my networks have urged me to set my financial goals	.861
Social networks are the most important source of financial information	.860
I get involved in activities within my networks that improve my financial wellbeing	.855
Social networks have enabled me find out where financial institutions are located	.849
Social networks are important in obtaining a loan from a financial institution (referee/guarantor)	.843
I rely of others in my networks to make financial decisions	.817
Social networks are an important source of credit	.814
I am recognized by a financial institution because of the social network I belong to	.802
Eigen Values	7.179
% of Variances	71.79
Cumulative % of variance	71.79

Source: Primary Data, 2015

The KMO and Bartlett's test of sphericity for social networks supported the factorability of the correlation matrix. The results of PCA in Table 4.9 and parallel analysis generated the one component – financial knowledge with an eigen value greater than 1 (7.2) explaining 71.8% of the total variance. However items for social ties used to social networks was removed. The

explanation for this change of loading and consequent deletion of items through the commonalities could have been that social ties could have been interpreted by respondents as social intention or resource utilisation, hence modifications were further made to accommodate such perceptions. The generated component of network intentions was still consistent with previous studies and scales used to measure social networks.

4.6.1.6 Subjective Norms

KMO= .906; Bartlett's Test of Sphericity; Approx. Chi-Square= 2322.457; df=28; Sig.=.000

Table 4.10: Component Matrix for Subjective Norms

	Normative beliefs
The people important to me think that formal financial services are cheaper to use	.866
The people important to me believe I can afford formal financial services	.860
The people who are important to me would expect me to use bank credit to finance my income generating activities	.824
The people in my life whose opinions I value would approve of my decisions to reach out to formal financial institutions for my financial needs	.824
People whose opinions I value would approve of the usefulness of insurance services	.798
The people important to me would support sending and receiving money through bank remittance services	.797
Most people who are important to me believe that saving in a bank is safe	.792
The people who influence my decisions expect me to save my money in the bank	.788
Eigen Value	5.369
% of Variance	67.12
Cumulative %	67.12

Source: Primary Data, 2015

The KMO and Bartlett's test of sphericity for subjective norms supported the factorability of the correlation matrix attained. The results of PCA in Table 4.10 and parallel analysis generated the one component – normative beliefs with an eigen value greater than 1 (5.4) explaining 67.1% of the total variance. The interpretation of the results were consistent with previous subjective norms scales used in empirical studies research, however a few modifications were made to suit this study context.

4.7 Correlations and Regression Results

The ordinary least square (OLS) assumptions were upheld through the diagnostic tests presented in chapter three (section 3.12.3) which indicated that the parametric tools of analysis can be used in analyzing and testing the relationships between the study variables using regression and structural equation modeling.

4.7.1 Correlation Analysis

Correlation analysis is a statistical method which tells us whether variables are related which is important in measuring the nature or relationship - negative or positive - between the study variables. The zero order Pearson correlation analysis was performed to examine associations between the study variables as shown in Table 4.11.

Table 4.11: Zero Order Correlation Matrix

	1	2	3	4	5	6	7	8	9
Financial Attitude (1)	1	.537**	.563**	.369**	.623**	.607**	-.120*	.578**	.631**
Financial Literacy (2)		1	.539**	.545**	.636**	.558**	.167**	.688**	.685**
Personal Capabilities (3)			1	.522**	.560**	.367**	.056	.574**	.661**
Social Networks (4)				1	.523**	.468**	-.063	.548**	.582**
Subjective Norms (5)					1	.648**	-.107*	.726**	.522**
Societal Capabilities (6)						1	-.104*	.751**	.561**
Interaction of PC & SC (7)							1	.021	.122*
Financial Self-efficacy (8)								1	.693**
Financial Inclusion (9)									1

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

(Source: Primary Data, 2015)

The results presented in Table 4.11 suggest that there are positive linear relationships that exist between the study variables. Therefore personal capabilities, financial attitude, financial literacy, societal capabilities, social networks, subjective norms, financial self-efficacy and financial inclusion are linearly positively related. Despite the high correlation between the variables, the

multicollinearity test presented in chapter three, section 3.12.3, multicollinearity was assessed using the tolerance value (TV) and the variance inflation factor (VIF). The results indicated that all VIF values are less than 5 and the condition index value is less than 30 for all study variables which are within acceptable levels, an indication that there is no multicollinearity as presented in *Appendix 5d.*

4.7.2 Hierarchical Linear Regression (HLR)

In a situation similar to this study where prediction of a dependent variable with a set of independent variables is required, regression analysis technique is used to objectively assess the degree of such relationships (Hair et al., 2010). In this study, HLR was used because of its ability to statistically control for additional variables to explore the ability to predict the model within a particular context. Further, regression models, can easily determine how well the conceptualised variables predict a particular outcome as well as the magnitude of effect of variables when others have been controlled for in a particular model (Hair et al., 201; Pallant, 2010).

Prior to the regression analysis, the data were subjected to the assumptions of multivariate analysis which were met accordingly (see chapter three, section 3.12.3) and additional collinearity results as per model specified presented in *Appendix 5d* in order to prevent any misinterpretations of the relationships.

The confirmatory specification approach was used for variable selection into the models. This approach allowed the researcher to specify and select the exact set of conceptualised independent variables to be included into the specified model. The variables were selected according to the conceptualised model presented earlier in chapter two, section 2.8. Unlike other

selection estimation techniques like the sequential and combinatorial approaches, the confirmatory approach allows absolute control based on theoretical and empirical justification for a true reflection of the variables selected. In this regard, Hair et al. (2010) recommends that in order to minimise specification errors that are commonly experienced with the selected approach, the researcher should ensure that a tradeoff between independent variables selected in order to increase predictive accuracy be harmonised with parsimony and concise explanation. This can be managed and addressed using structural equation modelling as one of the options which is adopted in the next chapter five.

Further, regression analysis mainly focuses on metric data due to its inability to model non-linear associations (Hair et al., 2010). Therefore, in order to enable the use of gender and marital status as control variables in the regression models, these categorical variables had to be modified in order to effectively improve the relationships between financial attitude, financial literacy, social networks, subjective norms, financial self-efficacy and financial inclusion. In this study, the modification of gender and marital status was established by creating dummy variables which consequently replaced the variables accordingly and these were interpreted in relation to their respective reference categories. In this study, hierarchical linear regression was further performed on financial self-efficacy and financial inclusion as dependent variables with age, gender, marital status, financial attitude, financial literacy, social networks, subjective norms, personal capabilities (PC), societal capabilities (SC) and the hypothesised interaction of PC and SC respectively, as presented in the following sections.

The results presented in Tables 4.12 to 4.15 show the use of both unstandardised (B) and standardised (β) regression coefficients. Standardisation z-scoring was done in order to convert

variables to a more comparable and interpretable scale variation whereby a mean of zero (0) and standard deviation of one (I) is achieved.

In this regard, Hair et al. (2010) argues that the beta (β) regression coefficients be used in the interpretation and explanation of the regression models because they eliminate the problem of dealing with varying measurement units which consequently affects the impact of the dependent variable - financial inclusion, due to the change in standard deviation in either predictor variable.

Table 4.12: Hierarchical Linear Regression with Financial Self-efficacy as the Dependent Variable

	Model 1		**Model 2**		**Model 3**		**Model 4**		**Model 5**		**Model 6**	
Variables	B	Beta	B	Beta	B	Beta	B	Beta	B	Beta	B	Beta
Constant	4.789**		1.021**		1.523***		.643**		.370		.422	
Age	-.009	-.056	-.011	-.072	.004	.026	.004	.023	.004	.024	.004	.024
Dummy Gender	.397**	.133**	.251*	.084*	.115	.038	.074	.025	.033	.011	.032	.011
Dummy Married	-.850**	-.275**	-.367*	-.119*	-.165	-.053	-.145	-.047	-.115	-.037	-.115	-.037
Dummy Divorced & Widowed	-.706*	-.169*	-.503*	-.120*	-.356*	-.085	-.372*	-.089*	-.305	-.073	-.307	-.073
No.of dependants	.057*	.131*	.027*	.062*	-.007	-.017	-.009	-.021	-.012	-.027	-.011	-.024
Financial Attitude			.752**	.554**	.173**	.128**	.168**	.123**	.079	.058	.073	.050
Financial Literacy					.643**	.697**	.565**	.612**	.452**	.490**	.461**	.500**
Social Networks							.369**	.167**	.276**	.125**	.271**	.123**
Subjective Norms									.286**	.259**	.280**	.254**
R^2	0.073		0.361		0.637		0.656		0.682		0.682	
Adj. R^2	0.062		0.351		0.63		0.649		0.675		0.674	
Std Error Estimate	1.447		1.203		.908		.885		.852		.853	
F- statistic	6.233		36.870		97.917		92.938		92.829		83.390	
p-value	0.000		0.000		0.000		0.000		0.000		0.000	

Dependent Variable: Financial Self-efficacy; PC-Personal capabilities; SC-Societal capabilities
**Significant at the 0.01 level (2-tailed). *Significant at the 0.05 level (2-tailed).
(Source: Primary Data, 2015)

Results in Table 4.12, suggest that by adding each set of predictor variables had a significant positive relationship with financial self-efficacy. 68.2 % of variance in financial self-efficacy was explained by financial attitude (Beta=.050; Sig. <.05), financial literacy (Beta=.500; Sig. <.01), social networks (Beta=.125; Sig. <.01) and subjective norms (Beta=.254; Sig. <.01), inclusive of the 7.3% explained by age and gender control variables included in the model. Additionally, results indicate that a one standard deviation increase in the financial literacy index is associated with a .50 standard deviation increase in the level of financial self efficacy with all factors taken into account.

The results further suggest that the variables, though by a small margin, significantly improved prediction of financial inclusion as hypothesized, therefore providing support for hypotheses; ***H2:*** *There is a positive relationship between subjective norms and financial self-efficacy among individuals in Uganda;* ***H3:*** *There is a positive relationship between social networks and financial self-efficacy;* ***H4:*** *There is a positive relationship between financial attitude and financial self-efficacy among individuals* in Uganda; ***H5:*** *There is a positive relationship between financial literacy and financial self-efficacy among individuals in Uganda;*

Control variables

The results in model one and two show an insignificant and negative relationship between age and financial self-efficacy. However in models three, four, five and six, the significance of the individuals' age was not significantly associated with financial self-efficacy. This perhaps implies that age reflects an increase in other behavioural and societal attributes which consequently builds the level of an individuals' confidence towards use of financial services. That is, the older one is the more they are likely to have a positive financial attitude, knowledge and skills,

increased networks and influence of normative beliefs which inherently affects their financial self-efficacy. Our argument is consistent with Allen et al. (2012) who argued that individuals within the age of 25-65 years were more likely to be influenced into having an account with a formal financial institution.

In our model, gender had a significantly weak relationship with financial self-efficacy. This suggests that an individual's level of confidence towards use of financial services does not necessarily relate to whether they are female or male. The gender aspect has a very small portion of influence to this regard. In line with this result, Demirguç-Kunt and Klapper (2013) found that gender was one of the factors that related to access to finance. This effect could be explained through an indirect effect where either males or female's confidence levels inherently led to a variation is access to finance.

Marital status and the number dependents were significantly disassociated with financial self-efficacy. The underlying results suggest that the level of confidence an individual possesses towards the use of formal financial services was not affected by one's marital status or the number of dependents they had.

Table 4.13: Hierarchical Linear Regression with Personal Capabilities (PC), Societal Capabilities (SC) and Interaction of PC and SC with Financial Self-efficacy as the Dependent Variable

	Model 1		Model 2		Model 3		Model 4	
Variables	B	Beta	B	Beta	B	Beta	B	Beta
Constant	4.789**		.754**		-.356		-.434	
Age	-.009	-.056	-.001	-.004	-3.666	.000	.000	.001
Dummy Gender	.397**	.133**	.129	.043	.035	.012	.036	.012
Dummy Married	-.850**	-.275**	-.142	-.046	-.092	-.030	-.095	-.031
Dummy Divorced and Widowed	-.706*	-.169*	-.363	-.087	-.306	-.073	-.301	-.072
Number of dependants	.057*	.131*	-.003	-.006	-.009	-.020	-.013	-.030
Personal Capabilities (PC)			.924**	.764**	.584**	.483**	.566**	.468**
Societal Capabilities (SC)					.625**	.377**	.653**	.394**
Interaction of PC & SC							.065	.045
R^2	0.073		0.607		0.664		0.666	
Adj. R^2	0.062		0.601		0.658		0.659	
Std Error of Estimate	1.447		0.944		0.874		0.872	
F-Statistic	6.233		100.847		110.423		97.176	
p-value	.000		.000		.000		.000	

Dependent Variable: Financial Self-efficacy
**Significant at the 0.01 level (2-tailed). *Significant at the 0.05 level (2-tailed).
(Source: Primary Data, 2015)

There were significant positive relationships between personal capabilities (Beta=.468; Sig. <.01); societal capabilities (Beta=.394; Sig. <.01) and financial self-efficacy. There was no significant positive relationship between the interaction of PC & SC (Beta =.045, Sig.>.05) and financial self-efficacy.

The results further suggested the following;

66.6% of variance in financial self-efficacy was explained by Personal capabilities (PC) and societal capabilities. Personal capabilities (PC) and societal capabilities (SC) improved the prediction of financial self-efficacy by 53.3% and 5.7% respectively. Additionally, results indicate that a one standard deviation increase in the personal capabilities (PC) index is associated with a .468 standard deviation increase in the level of FSE with all factors taken into account.

In our model, there was no significant relationship between the interaction of PC and SC and financial self-efficacy. This is an indication that an individual's level of confidence regarding the use of formal financial services is not affected by a combination of both personal and societal capabilities. The effect is only realized independently by personal and societal capabilities. The results further suggest that the variables, though by a small margin, significantly improved prediction of financial self-efficacy as hypothesised except the interaction of PCSC, therefore providing support for hypotheses; ***H12:*** *There is a positive relationship between personal capabilities and financial self-efficacy among individuals in Uganda;* ***H14:*** *There is a positive relationship between societal capabilities and financial self-efficacy. However, the results do not support hypothesis* ***H10*** *that there is a positive relationship between the interaction of PC and SC and financial self-efficacy.*

Table 4.14: Hierarchical Linear Regression with Financial Self-efficacy, Financial Attitude, Financial Literacy, Social Networks and Subjective Norms with Financial Inclusion as the Dependent Variable

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
Variables	B	Beta	B	Beta	B	Beta	B	Beta	B	Beta	B	Beta	B	Beta
Constant	4.387**		.381		-.738*		.200		-.314		-.349		-.582	
Age	-.024*	-.139*	-.017*	-.097	-.019*	-.112*	-.009	-.051	-.009	-.052	-.009	-.051	-.009	-.054
Dummy Gender	.591**	.180**	.259*	.079	.248*	.075*	.219*	.067*	.197*	.060*	.192*	.058*	.194*	.059*
Dummy Married	-.953**	-.280**	-.242	-.071	-.134	-.039	-.091	-.027	-.084	-.025	-.081	-.024	-.081	-.024
Dummy Divorced & Widowed	-.284	-.062	.307*	.067	.299*	.065*	.229*	.050	.207	.045	.213	.046	.221	.048
Number of dependants	.078**	.164**	.031	.064	.025*	.052*	.002	.004	.001	.001	005	.000	-.006	-.012
Financial self-efficacy			.837**	.762**	.685**	.623**	.255**	.232**	.221**	.201**	.209**	.191**	.211**	.192**
Financial Attitude					.369**	.247*	.116*	.078*	.118**	.079**	.106*	.071*	.131*	.088*
Financial Literacy							.640**	.632**	.611**	.603**	.601**	.593**	.558**	.551**
Social Networks									.237**	.098**	.227**	.094**	.249**	.102**
Subjective Norms											.044	.036	.069	.057
R^2	0.115		0.652		0.692		0.821		0.827		0.827		0.83	
Adj. R^2	0.104		0.647		0.686		0.817		0.823		0.823		0.825	
Std Error of Estimate	1.554		0.975		0.919		0702		0.691		0.691		0.687	
F-Statistic	10.197		122.593		125.382		222.874		206.252		185.764		171.394	
p-value	.000		.000		.000		.000		.000		.000		.000	

Dependent Variable: Financial Inclusion

**Significant at the 0.01 level (2-tailed).*Significant at the 0.05 level (2-tailed).

(Source: Primary Data, 2015)

The model seven (7) results presented in Table 4.15 indicate that there were significant positive relationships between financial self-efficacy (Beta=.192; Sig. <.01); financial attitude (Beta=.088; Sig. <.05); financial literacy (Beta=.551; Sig. <.01); social networks (Beta=.102; Sig. <.01) and financial inclusion. However, there was no significant positive relationships between subjective norms (Beta =.057, Sig.>.05) and financial inclusion.

Results in Table 4.15 further suggest that by adding each set of predictor variables had a significant positive relationship with financial inclusion. Eighty three percent of variance in financial inclusion was explained by financial self-efficacy, financial literacy, social networks and subjective norms, inclusive of the 11.5% explained by gender, marital status and number of dependents as control variables included in the model. Additionally, results indicate that a one standard deviation increase in the financial literacy index is associated with a .551 standard deviation increase in the level of financial inclusion with all factors taken into account

The results further suggest that the variables, though by a small margin, significantly improved prediction of financial inclusion as hypothesised except subjective norms, therefore providing support for hypotheses; ***H1:*** *There is a positive relationship between financial self-efficacy and financial inclusion among individuals in Uganda* ***H6:*** *There is a positive relationship between financial attitude and financial inclusion among individuals in Uganda;* ***H7:*** *There is a positive relationship between financial literacy and financial inclusion among individuals in Uganda;* ***H9:*** *There is positive relationship between social networks and financial inclusion among individuals in Uganda*. Accordingly, the results did not provide support for Hypothesis, ***H8*** *that there is a positive relationship between subjective norms and financial inclusion among individuals in Uganda.*

Table 4.15: Hierarchical Linear Regression with Personal Capabilities (PC), Societal Capabilities (SC) and Interaction of PC and SC with Financial Inclusion as the Dependent Variable

	Model 1		Model 2		Model 3		Model 4		Model 5	
Variables	B	Beta	B	Beta	B	Beta	B	Beta	B	Beta
Constant	4.146**		.256*		-.758**		-1.137**		-1.303**	
Age	-.013	-.074	-.012	-.071	-.013*	-.075*	-.013*	-.076	-.014*	-.083**
Dummy Gender	.676**	.206**	.292*	.089	.232*	.071*	.199*	.061*	.189*	.058*
Dummy Married	-.753**	-.222**	-.161	-.047	-.031	-.009	-.027	-.008	-.070	-.021*
Dummy Divorced &Widowed	-.034	-.007	.408	.089	.276*	.060*	.269	.059	.239	.052
Personal Capabilities					.799**	.602**	.718**	.541**	.673**	.507**
Societal Capabilities							.244*	.134*	.329**	.180**
Interaction of PC & SC									.181**	.115**
R^2	0.097		0.651		0.792		0.798		0.811	
Adj. R^2	0.088		0.646		0.789		0.795		0.807	
Std Error of Estimate	0.566		0.976		0.753		0.743		0.721	
F-Statistic	10.642		146.74		249.751		221.814		209.329	
p-value	.000		.000		.000		.000		.000	

Dependent Variable: Financial Inclusion
**Significant at the 0.01 level (2-tailed).*Significant at the 0.05 level (2-tailed)
(Source: Primary Data, 2015)

There were significant positive relationships between personal capabilities (Beta=.507; Sig. <.01); societal capabilities (Beta=.180; Sig. <.01), the interaction of PC & SC (Beta=.115; Sig. <.01) and financial inclusion.

The results further suggested the following;

In model five presented in Table 4.15, 81.1% of variance in financial inclusion was explained by Personal capabilities (PC) and societal capabilities and the interaction between PC and SC inclusive of the 9.7% of the control variables - age and gender and decreasing effect of marital

status. Personal capabilities (PC) and societal capabilities and the interaction between PC and SC, though by a small margin, improved the prediction of financial inclusion respectively. . Additionally, results indicate that a one standard deviation increase in PC index is associated with a .507 standard deviation increase in the level of financial inclusion with all factors taken into account.

The results further suggest that the variables though by a small margin, significantly improved prediction of financial inclusion as hypothesized. Therefore the results provide support for hypotheses; ***H13:*** *There is a positive relationship between personal capabilities and financial inclusion among individuals in Uganda;* ***H15:*** *There is a positive relationship between societal capabilities and financial inclusion among individuals in Uganda;* ***H11:*** *There is a positive relationship between the interaction of personal and societal capabilities and financial inclusion among individuals in Uganda.*

Control variables

The results presented in table 4.15 indicate that the age of the individuals was associated with financial inclusion. This finding corroborates with Allen et al. (2012) who found that individuals within the age of 25-65 years who actually represent our average sample age, were more likely to be influenced into having an account with a formal financial institution.

Additionally, gender had a significantly negative relationship with financial inclusion. This suggests that an individual's gender accounts for the disparities in usage of financial services. These findings are congruent with, Allen et al., (2012); Demirguç-Kunt & Klapper, (2013); Kempson & Whyley, (1999) who found gender statistically significant in developing countries and

consequently influencing access to financial services. Their results further reveal that significant disparities in account penetration were attributed to gender.

Marital status was also significantly associated with financial inclusion. The underlying results suggest an individual's ability or desire to use financial services is significantly affected by their marital status. For instance, the model revealed that individuals who were married were more likely to be financially included as opposed to their separated and divorced counterparts. This result is commensurate with Collard et al. (2001) who found that married women in Somalia were constrained from accessing financial services. This is possibly true in many sub-Saharan African countries where women, especially the married ones, are controlled by the men or socially excluded from participating in the formal system. This was acknowledged during the study especially in the rural areas of Northern Uganda where women were culturally forbidden from participating in formal activities - the financial system inclusive.

4.8 Chapter Conclusions

From the HLR analysis, it is evident that among individuals in Uganda, financial attitude, financial literacy social networks, PC and SC positively influence FSE. However the results indicated that the interaction of PCSC had no relationship with FSE. It is also evident that financial attitude, financial literacy, social networks, PC, SC and PCSC positively relate with FI. However, subjective norms had no significant relationship with FI though financial attitude was seen to have a negative relationship with FI among individuals in the selected regions of Uganda.

CHAPTER FIVE

Robustness Tests Using Structural Equation Modeling

5.1 Introduction

Structural equation modeling (hereafter SEM) is a theory driven technique that combines factor analysis with multiple regression in order to simultaneously assess the contribution and relationships among multiple observed and unobserved variables (Hair et al., 2010; Schreiber, Nora, Stage, Barlow, & King, 2006; Ullman, 2001). In this study, SEM was used because of its ability to explain a set of hypothesised relationships at the same time, its ability to allow one to test theoretical prepositions and directionality of the variables through path analysis while minimising measurement error. Additionally, SEM was used to test the mediation hypotheses accordingly. These have been identified as major drawbacks in the factor analysis and traditional multiple regression analysis which SEM overcomes in order to draw more robust conclusions regarding the stipulated hypotheses.

As part of the process, in order to effectively use SEM to address the various study research questions and hypotheses two conditions have to be fulfilled; a) determination of the measurement models; b) Develop the structural model. The researcher took into consideration the pre-analysis and post-analysis non-technical (research questions that justify the need for SEM, graphical display of models and implications from findings) and technical (adequate sample size, missing value analysis, compliance to the parametric tests assumptions, software

programme used and estimation method adopted) required as stipulated by Schreiber et al. (2006).

5.2 Structural equation modeling and hypothesis testing

5.2.1 Measurement Models

An assessment of the measurement models was performed to understand the relationships that existed between the latent and manifest variables as presented in section 4.8.1-4.8.8. Confirmatory factor analysis (hereafter CFA) identifies the patterns for each of the variables that corroborate with the theoretical and hypothesized model. SPSS Amos™ 21 software was used to confirm items that measured the study constructs and variables before proceeding to testing the study hypotheses SEM by developing the structural models.

In this study, the maximum likelihood estimation method was used to perform the analysis since the data was normally distributed which is consistent with Muthén (2002). Missing values had been handled accordingly as well as the multivariate parametric assumptions upheld (*see chapter 3, section 3.12.3*) using a sample size of 400. The study hypothesised a six factor model that was independently confirmed in the measurement portion of the model as presented in the following section. Additionally, CFA was used to confirm the reliability of the manifest and latent variables and validity of the constructs and variables through convergent and discriminant validity as presented in section 5.3. CFA confirmed a specific number of items for the constructs with the latent and manifest variables clearly indicated by the regression weights and a presentation of the model fit summary indices for each factor. Consequently, the structural models were

developed explaining financial inclusion among selected individuals in Uganda from a demand side behavioural perspective.

The statistical significance and model fit indices were used to assess the significance of the measurement model and structural paths representing the effect of hypothesised variables respectively. In this study, the specific model fit indices used to assess the measurement and structural models were; absolute fit indices which included chi square value whose cut off should have a ratio to degrees of freedom ≤ 2 or 3; and incremental and parsimonious fit indices which included Normed fit index (NFI), Incremental fit index (IFI), Tucker-Lewis Index (TLI), comparative fit index (CFI) whose cut off for acceptance should be .95 and root mean square residual (RMSEA) < .08 with 95% confidence interval were used to assess how the articulated theoretical mode fits the sample data and alternative models. In order to ensure that the purported theory fits the reality as well as the similarity of two covariance models, we looked out for small chi square values and large probability levels that are not statistically significant besides the other fit indices.

5.2.1.1 Financial Inclusion

Financial inclusion was measured in terms of access, usage and quality of financial services. CFA confirmed and retained the three constructs and four items were retained for access, two for usage and two for quality with the observed variable of financial inclusion as shown in Tables 5.1, Figure 1 and regression weights in Table 5.2. The results indicated a good model fit (Chi-square = 49.825, Df= 17, p= .000; NFI=.991, RFI =.986, IFI=.994, TLI=.990, CFI=.994; RMSEA=.070). The results in Table 5.2 indicates that the standardised parameter estimates for all the retained items for financial inclusion were statistically significant with p<.001. This suggested a good

representation of financial inclusion items hence confirming the factors or items used in the CFA model and the overall hypothesised measurement model for the study.

Table 5.1: Constructs and items of financial inclusion

Construct	Code	Items
Access	ACC1	The nearest bank is less than 5km from in my home
	ACC2	There is a usable access road leading to the nearest formal financial institution
	ACC3	I live within less than 1km of an ATM that I can easily visit to access my account
	ACC4	There are a number of banking agent services that I can easily visit near my home
Usage	USA1	I am aware of the formal products and services
	USA2	I have used my savings account to save for future expenses
Quality	QUAL1	I know which documents are required to open a bank account
	QUAL14	I receive prompt information regarding my transactions

Figure 5.1 Financial Inclusion measurement model

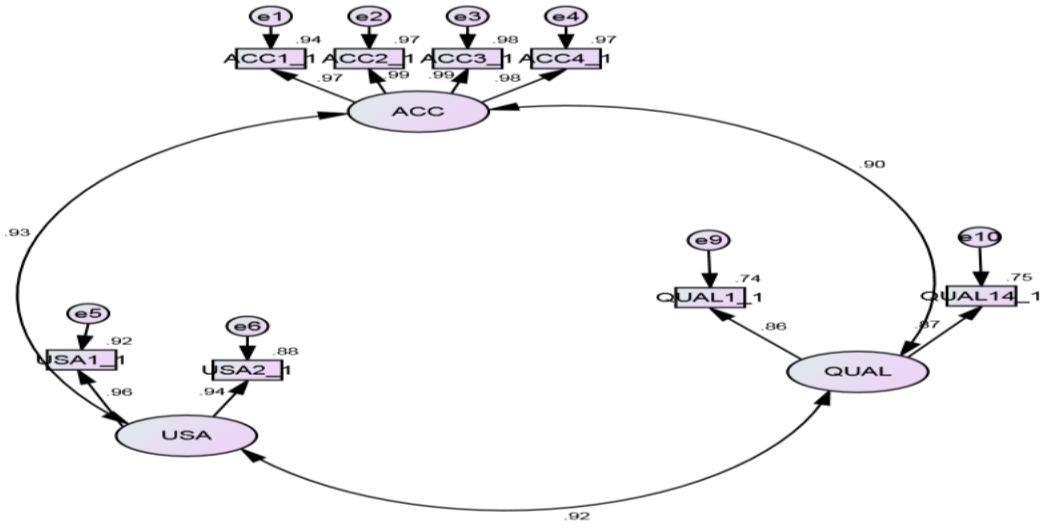


Table 5.2: Regression Weights for financial inclusion

			B	S.E.	β
ACC1_1	<---	ACC	1.000		.969***
ACC2_1	<---	ACC	1.040	.016	.985***
ACC3_1	<---	ACC	1.044	.016	.989***
ACC4_1	<---	ACC	1.039	.016	.984***
QUAL1_1	<---	QUAL	1.000		.861***
QUAL14_1	<---	QUAL	1.022	.046	.867***
USA2_1	<---	USA	.971	.025	.939***
USA1_1	<---	USA	1.000		.957***

5.2.1.2 Financial Self-efficacy

CFA confirmed and retained five items to measure a one factor model of financial self-efficacy as shown in Table 5.3, Figure 2 and the regression weights Table 5.4. The results indicated a good model fit (Chi-square = 53.456, Degrees of freedom = 5, Probability level = .000; NFI=.956, RFI =.916, IFI=.960, TLI=.920, CFI=.960; RMSEA=.06). The results in Table 5.4 indicates that the standardised parameter estimates for all the retained items for financial self-efficacy were statistically significant with p<.001. This suggested a good representation of financial self-efficacy items hence confirming the factors or items used in the CFA model and the overall hypothesised measurement model for the study.

Table 5.3: Constructs and Items of Financial Self-efficacy

Construct	Code	Items
Generality	FSE1	I am confident that I can manage my finances
	FSE5	I can easily spend less that my income each month
	FSE8	I can confidently deposit money in the bank to plan for the future
	FSE10	I have the ability to borrow money from the bank
	FSE11	I have what it takes to use financial services to manage my financial goals

Figure 5.2 Financial Self-efficacy (FSE) Measurement Model

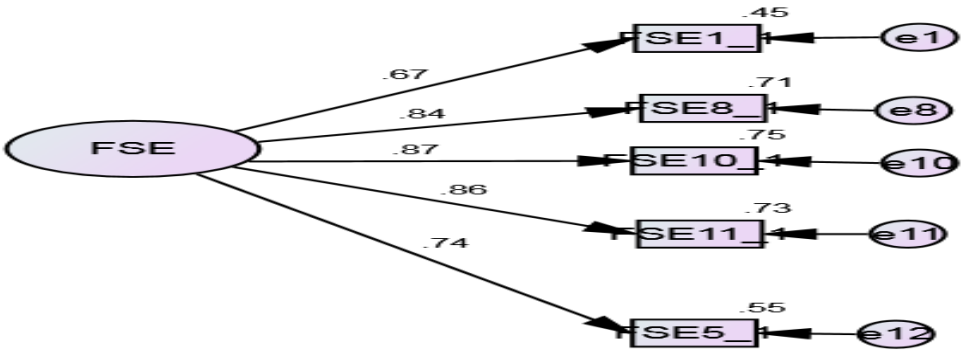


Table 5.4: Regression Weights for Financial self efficacy

			B	S.E.	β
FSE8_1	<---	FSE	1.268	.087	.842***
FSE10_1	<---	FSE	1.522	.101	.868***
FSE11_1	<---	FSE	1.462	.099	.856***
FSE5_1	<---	FSE	1.146	.087	.741***
FSE1_1	<---	FSE	1.000		.669

5.2.1.3 Financial Attitude

CFA confirmed and retained four items to measure a one factor model of financial attitude as shown in Table 4.5, Figure 3 and the regression weights Table 5.6. The results indicated a good model fit (Chi-square = 3.351, Df= 2, Probability level = .187; NFI=.994, RFI =.983, IFI=.998, TLI=.993, CFI=.998; RMSEA=.041). The results in Table 5.6 indicates that the standardised parameter estimates for all the retained items for financial attitude were statistically significant with p<.001. This suggested a good representation of financial attitude items hence confirming the factors or items used in the CFA model.

Table 5.5: Constructs and Items of Financial Attitude

Construct	Code	Items
Financial Attitude (FATT)	FATT1	I consider using formal financial services (savings, loans, insurance, remittances) useful
	FATT6	I find it convenient to use the remittance services to send and receive money
	FATT7	I think that using formal financial services is safe for financial transactions
	FATT8	It is wise to borrow money from formal financial services

Figure 5.3 Financial Attitude Measurement Model

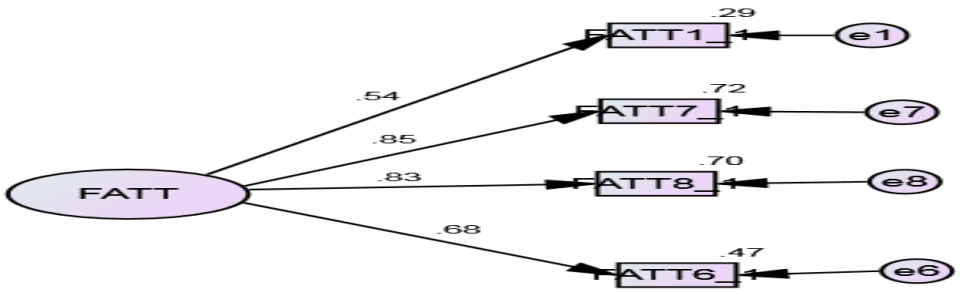


Table 5.6: Regression Weights for financial attitude

			B	S.E.	β
FATT1_1	<---	FATT	1.000		.537***
FATT7_1	<---	FATT	1.537	.146	.848***
FATT8_1	<---	FATT	1.599	.152	.834***
FATT6_1	<---	FATT	1.271	.132	.683***

5.2.1.4 Financial Literacy

CFA confirmed and retained four items to measure a one factor model of financial literacy as shown in Table 5.7, Figure 4 and the regression weights Table 5.8. The initial verification of the inter item correlations revealed that the initial items of the financial application construct was deleted because the items poorly correlated with other items in the scales. The remaining items were subjected to CFA and still generated good fit indices and did not distort the

conceptualisation towards financial inclusion. The results indicated a good model fit (Chi-square = .248, Df= 2, Probability level = .883; NFI=1.000, RFI =1.000, IFI=1.001, TLI=1.003, CFI=1.000; RMSEA=.000). The results in Table 5.8 indicate that the standardised parameter estimates for all the retained items for financial literacy were statistically significant with p<.001. This suggested a good representation of financial literacy items retained hence confirming the factors or items used in the CFA model.

Table 5.7: Constructs and Items of Financial Literacy

Construct	Code	Items
Financial knowledge	FL1a	Savings
	FL3a	Insurance
	FL4a	Remittances
	FL7a	Inflation

Figure 5. 4 Financial Literacy Measurement Model

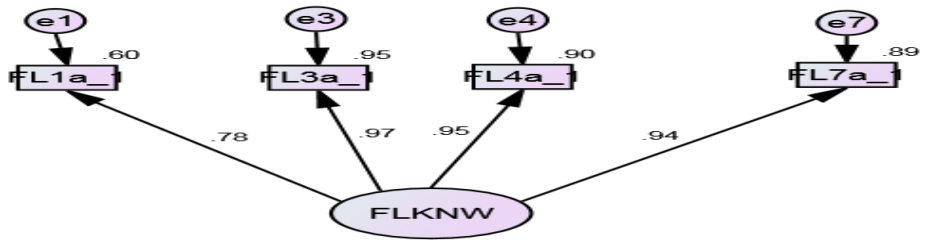


Table 5.8: Regression Weights for financial literacy

			B	S.E.	β
FL1a_1	<---	FLKNW	1.000		.776
FL3a_1	<---	FLKNW	1.559	.067	.973***
FL4a_1	<---	FLKNW	1.527	.068	.947***
FL7a_1	<---	FLKNW	1.488	.067	.945***

5.2.1.5 Personal Capabilities (PC)

CFA confirmed and retained eight items to measure a two factor model of personal capabilities measured using financial attitude and financial literacy as shown in Table 5.9, Figure 5 and the regression weights Table 5.10. The results provided a good model fit (Chi-square = 51.252, Degrees of freedom = 19, Probability level = .000; NFI=.981, RFI =.972, IFI=.988, TLI=.982, CFI=.988; RMSEA= .065). The results in Table 5.10 indicate that the standardised parameter estimates for all the retained items for personal capabilities were statistically significant with p<.001. This suggested a good representation of personal capabilities items retained in the CFA measurement model.

Table 5.9: Constructs and Items of Personal Capabilities (PC)

Construct	Code	Items
Financial knowledge	FATT1	I consider using formal financial services (savings, loans, insurance, remittances) useful
	FATT6	I find it convenient to use the remittance services to send and receive money
	FATT7	I think that using formal financial services is safe for financial transactions
	FATT8	It is wise to borrow money from formal financial services
Financial attitude	FL1a	Savings
	FL3a	Insurance
	FL4a	Remittances
	FL7a	Inflation

Figure 5.5 Personal Capabilities Measurement Model

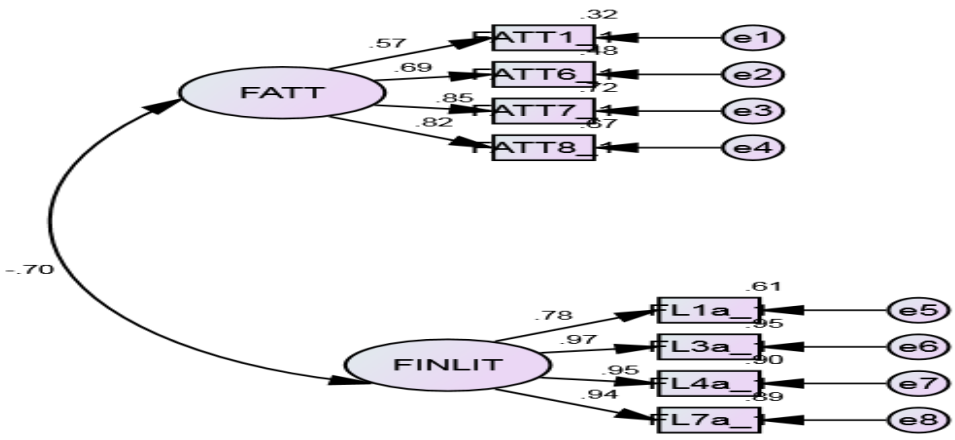


Table 5.10: Regression Weights for personal capabilities

			B	S.E.	β
FATT1_1	<---	FATT	1.000		.566
FATT6_1	<---	FATT	1.219	.119	.690***
FATT7_1	<---	FATT	1.456	.128	.846***
FATT8_1	<---	FATT	1.488	.132	.818***
FL1a_1	<---	FINLIT	1.000		.778
FL3a_1	<---	FINLIT	1.555	.067	.973 ***
FL4a_1	<---	FINLIT	1.523	.068	.947***
FL7a_1	<---	FINLIT	1.485	.066	.945***

5.2.1.6 Social Networks (Intentions)

CFA confirmed and retained four items to measure a one factor model of social networks measured using network intentions as shown in Table 5.11, Figure 6 and the regression weights Table 5.12. The initial verification of the inter item correlations revealed that the initial network availability construct epitomised by size and pattern was deleted because the items poorly correlated with other items in the scales. The remaining items were subjected to CFA and still generated good fit indices and did not distort the conceptualisation towards financial inclusion.

The results provided a good model fit (Chi-square = 8.045, Degrees of freedom = 2, Probability level = .018; NFI=.994, RFI =.981, IFI=.995, TLI=.986, CFI=.995; RMSEA=.08). The results in Table 5.12 indicate that the standardized parameter estimates for all the retained items for social networks were statistically significant with p<.001. This suggested a good representation of social networks items retained in the CFA measurement model.

Table 5.11: Constructs and Items of Social Networks

Construct	Code	Items
Network intentions (SOCINT)	SN1b	Social networks are the most important source of financial information
	SN4b	I use the opportunities within my networks to attain my financial goals
	SN11b	I use opportunities within quickly in order to attain my financial goals
	SN12b	I get involved in activities within my networks that improve my financial wellbeing

Figure 5.6 Social Networks Measurement Model

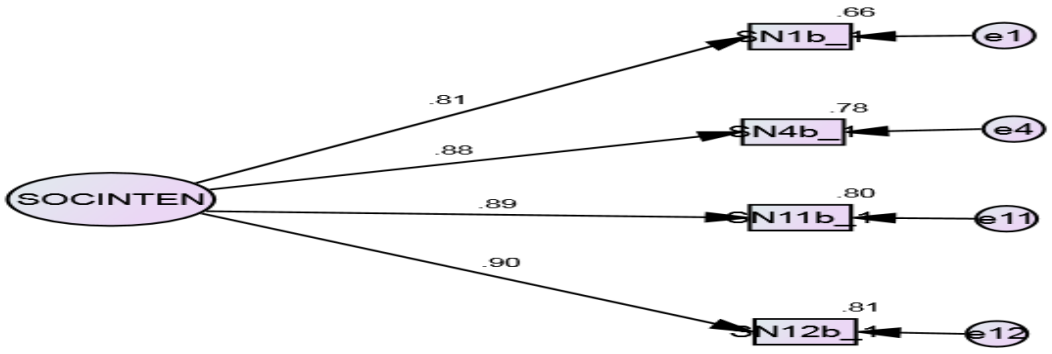


Table 5.12: Regression Weights for social networks

			B	S.E.	β
SN1b_1	<---	SOCINTEN	1.000		.813
SN4b_1	<---	SOCINTEN	1.040	.049	.882***
SN11b_1	<---	SOCINTEN	1.032	.048	.892***
SN12b_1	<---	SOCINTEN	1.121	.052	.898***

5.2.1.37 Subjective Norms

CFA confirmed and retained four items to measure a one factor model of subjective norms as shown in Table 5.13, Figure 7 and the regression weights Table 5.14. The results indicated a relatively good model fit (Chi-square = 14.108, Df= 2, Probability level = .001; NFI=.986, RFI =.957, IFI=.988, TLI=.963, CFI=.988; RMSEA=.12). The results in Table 5.14 indicates that the standardised parameter estimates for all the retained items for financial attitude were statistically significant with p<.001. This suggested a good representation of financial attitude items hence confirming the factors or items used in the CFA model.

Table 5.13: Constructs and Items of Subjective Norms

Construct	Code	Items
Normative beliefs	SUBNOR1	The people who influence my decisions expect me to save my money in the bank
	SUBNOR6	People whose opinions I value would approve of the usefulness of insurance services
	SUBNOR7	The people important to me believe I can afford formal financial services
	SUBNOR8	The people important to me think that formal financial services are cheaper to use

Figure 5.7 Subjective Norms Measurement Model

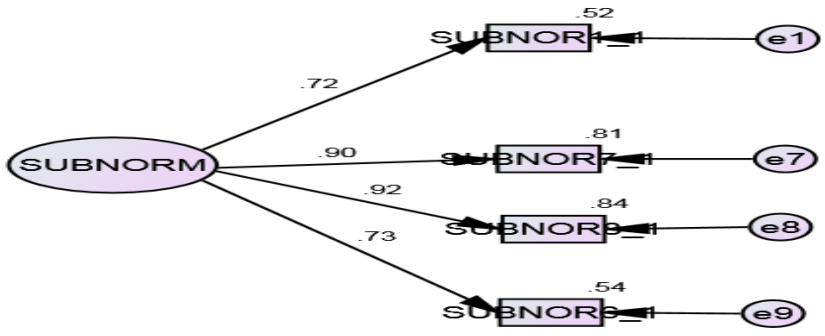


Table 5.14: Regression Weights for subjective norms

			B	S.E.	β
SUBNOR1_1	<---	SUBNORM	1.000		.720
SUBNOR7_1	<---	SUBNORM	1.115	.064	.899***
SUBNOR8_1	<---	SUBNORM	1.190	.068	.918***
SUBNOR6_1	<---	SUBNORM	.795	.056	.734***

5.2.1.8 Societal Capabilities (SC)

CFA confirmed and retained four items to measure a two factor model of societal capabilities measured using social networks and subjective norms as shown in Table 5.15, Figure 8 and the regression weights Table 5.16. The results provided a good model fit (Chi-square = .191, Df= 1, Probability level = .662; NFI=1.000, RFI =.999, IFI=1.001, TLI=1.006, CFI=1.000; RMSEA=.000). The results in Table 5.16 indicate that the standardised parameter estimates for all the retained items for societal capabilities were statistically significant with p<.001. This suggested a good representation of personal capabilities items retained in the CFA measurement model.

Table 5.15: Constructs and Items of Societal Capabilities (SC)

Construct	Code	Items
Subjective norms	SUBNOR1	The people important to me think that formal financial services are cheaper to use
	SUBNOR8	The people important to me think that formal financial services are cheaper to use
Social networks	SN1b	Social networks are the most important source of financial information
	SN4b	I use the opportunities within my networks to attain my financial goals

Figure 5.8 Societal Capabilities Measurement Model

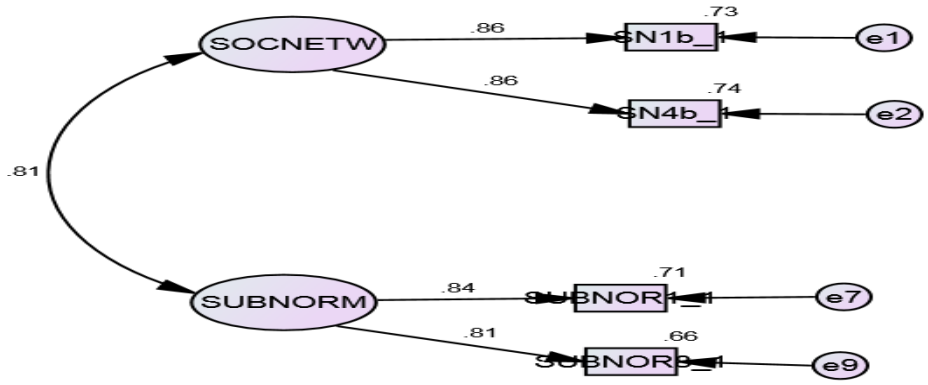


Table 5.16: Regression Weights

			B	S.E.	β
SUBNOR8_1	<---	SUBNORM	.898	.058	.813***
SUBNOR1_1	<---	SUBNORM	1.000		.844***
SN1b_1	<---	SOCNETW	1.000		.856***
SN4b_1	<---	SOCNETW	.964	.056	.860***

Finally, in order to modify the various measurement models in addition to the goodness of fit model evaluation, path analysis and standardised residual modification of indices was performed. This was to ensure that factor loadings that fell below the .70 threshold value were assessed for deletion. This was carefully done in order to retain those variables or items that were not problematic in terms of affecting the model fit values when removed (Hair et al., 2010).

5.3 Testing for Convergent and Discriminant validity using CFA

The measurement models were assessed using item loadings in EFA, the composite reliability showing the internal consistency of the items and then the convergent and discriminant validity of the study variables.

5.3.1 Convergent Validity

In this study, convergent validity which assessed the degree to which the construct measures are associated was used. Convergent validity was determined using communalities or factor loadings in EFA and the average variance explained (AVE) in CFA. The ranges of communalities were high within the study variables as shown in Table 5.17 and *Appendices 6a-6f*. The results indicate that the average variance extracted (AVE) of each variable was above 0.5 as presented in Table 4.36, an indication of convergent validity (Hair et al., 2010).

5.3.2 Discriminant Validity

Discriminant validity was determined in EFA using extraction method of principal component analysis and rotated method varimax with Kaiser Normalisation with results presented in rotated component matrix table, eigen values and percentage of variances. Factor loadings of ≥ .5 and eigen values > 1 were considered. In CFA, a comparison of square root of average variance extracted AVE (Table 5.17) and correlation or factor loading between constructs and variables was used to determine discriminant validity. The results indicated that the square roots of the average of variance extracted (AVE) for all the constructs and variables are above 0.7. In addition, the square roots of the AVE for each manifest variable were greater than the correlation coefficients with other constructs presented in the zero order correlation.

The results confirm construct validity and composite reliability of financial inclusion, financial self-efficacy, financial attitude, financial literacy, social networks, subjective norms scales and their dimensions respectively. It is therefore construed that there is no significant difference between the hypothesised and observed model regarding the individuals' capabilities explaining

financial inclusion in Uganda from a behavioural perspective. A summary of the validity results is shown in Table 5.17.

Table 5.17: Summary of Convergent Validity

		EFA	CFA	
	Measurement Scale	**Communalities Ranges**	**AVE**	**Square root of AVE**
1.	Financial inclusion	0.61 - 0.95	0.893	0.945
2.	Financial self-efficacy	0.60 – 0.83	0.654	0.808
3.	Financial attitude	0.51 – 0.74	0.543	0.737
4.	Financial literacy (knowledge)	0.77 – 0.91	0.835	0.914
7.	Social networks (network intention)	0.64 – 0.81	0.760	0.872
8.	Subjective norms	0.62 – 0.75	0.677	0.823

Source: Primary Data, 2015

5.4 Estimating the Structural Models

After assessing the measurement models and ensuring that the construct and manifest variables - financial attitude, financial literacy, social networks, subjective norms, financial self-efficacy and financial inclusion were within acceptable standards, estimates of the hypothesised relationships using the structural model assessment component of SEM was performed. The control variables number of dependents and dummy marital status were included in the model.

In this study, the significance (p-value) and direction of hypothesised relationships in the path diagrams (standardised beta (β) values) presented in the preceding section are used to explain the relationships between the variables. The standardised beta values are particularly used because they incorporate the number of deviations of observed residuals that apparently exist when the causal model fits well. Standardisation z-scoring is done in order to convert variables to a more comparable and interpretable scale variation whereby a mean of zero (0) and standard deviation of one (1) is achieved. In this regard, Hair et al. (2010) argues that the beta (β) regression coefficients be used in the interpretation and explanation of the causality models

because they eliminate the problem of dealing with varying measurement units. These consequently affect the impact of the dependent variable - financial inclusion due to the change in standard deviation in either exogenous predictor variables. The relationship between the variables that depict dependence associations are illustrated using the straight arrows from the predictor to dependent variable while the curved double headed arrows represent the correlations between the indicators implying no causation (Schreiber et al., 2006).

5.4.1 Hypothesis testing using SEM

The hypotheses (*see Figure 3.1, in chapter two, section 2.8*) developed from the review of literature implied testing direct and indirect relationships between the studies variables. The results for Figure 5.9 generated a chi-square value of 1017.625 at p=.000 for 282 degrees of freedom. The P-value was less than .05 suggesting relatively good model fit. Additionally, other recommended model fit indices specifically; NFI=.897, RFI =.882, IFI=.924, TLI=.911, CFI=.923; RMSEA=.08 which suggested acceptable model fit which suggested acceptable model fit (Hair et al., 2010; Hu & Bentler, 1995; Schreiber et al., 2006).

These results are also consistent with the accepted model fit levels provided by Bentler, (2007); Hair et al., (2010); Hu & Bentler, (1999); Schreiber et al., (2006). The results indicate that the model regression weights are significant hence different from zero implying that the dependence and correlational relationships between the manifest and latent variables were actually established accordingly.

Figure 5.9: Testing Hypotheses of the Study Variables

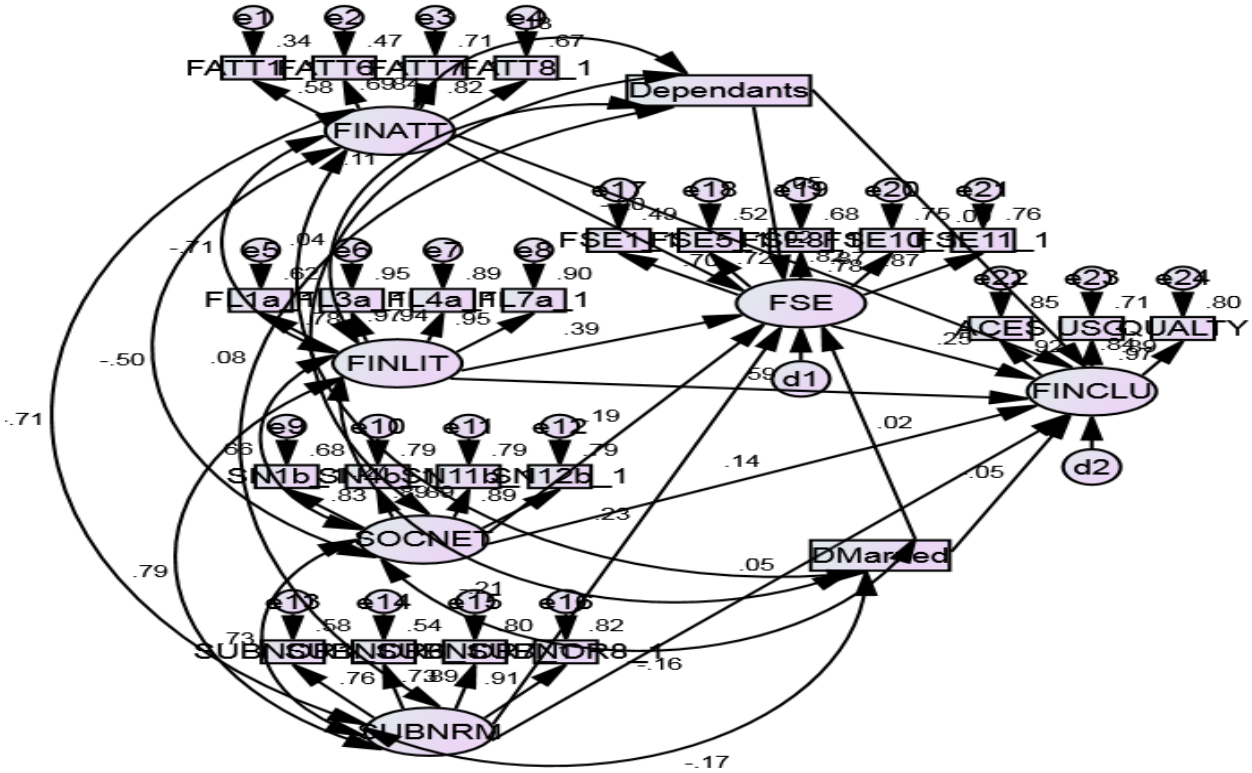


Table 5.18: Regression Weights for Study Hypotheses

			B	S.E.	β	P	*Hypothesis Supported?*
FSE	<---	FINLIT	.427	.068	.384	***	*Yes*
FSE	<---	SOCNET	.174	.046	.191	***	*Yes*
FSE	<---	SUBNRM	.206	.062	.232	***	*Yes*
FSE	<---	A7	-.017	.011	-.047	.101	
FSE	<---	DMarried	.024	.075	.009	.750	
FSE	<---	FINATT	-.312	.090	-.192	***	*Yes*
FINCLU	<---	FSE	.428	.084	.258	***	*Yes*
FINCLU	<---	SOCNET	.214	.050	.141	***	*Yes*
FINCLU	<---	SUBNRM	.077	.067	.052	.247	*No*
FINCLU	<---	A7	.000	.011	.000	.994	
FINCLU	<---	DMarried	-.251	.079	-.058	.001	
FINCLU	<---	FINATT	-.056	.095	-.021	.557	*No*
FINCLU	<---	FINLIT	1.094	.087	.591	***	*Yes*

***Significant at the 0.001 level (2-tailed); financial self-efficacy (FSE), financial literacy (FINLIT), social networks (SOCNET), subjective norms (SUBNRM), financial inclusion (FINCLU), A7-no. of dependants
Source: Primary data, 2015

The structural model results presented by Figure 5.9 and Table 5.18 revealed the following;

There was a significant positive relationship between FSE and FI (β=.288, p<.001). The results suggest that FSE positively influenced FI. Therefore the hypothesis ***H1:*** *There is a positive relationship between financial self-efficacy and financial inclusion among individuals in Uganda* was accepted. The significant and positive relationship infers that when an individual financial consumer is endowed with high levels of confidence to manage tasks specifically relating to financial services, the level of financial inclusion improves.

Financial attitudes of individual financial consumers was negatively and non-significantly associated with financial inclusion (p>.001). This suggests that an individual's evaluative judgment of whether using financial services was desirable and favourable or not did not influence a consumer's decision in terms of accessing and using financial services. Therefore the results did not provide support for hypothesis ***H6*** *that there is a positive relationship between financial attitude and financial inclusion among individuals in Uganda*. The results corroborate with the findings of Taib et al. (2008) that attitude may be influenced by other capabilities while predicting individual behaviour which may result into an insignificant and weak direct effect say on financial inclusion.

There was a significant positive relationship between financial literacy and financial inclusion (p<.001). The model results actually denotes that a positive change in the level of skills, knowledge and understanding of the basic financial concepts regarding financial services is associated with an increase in financial inclusion in terms of access, usage and quality among

individuals. This is conceivably true because the more understanding, skills and knowledge one has about financial services, the more they are capable of understanding why and how the financial services are important and used respectively in order to consequently derive satisfaction *per se*. Therefore the hypothesis ***H7:*** *There is a positive relationship between financial literacy and financial inclusion among individuals in Uganda* was significantly supported as theorised.

Social networks were significant and positively related with financial inclusion (p<.001). The results suggest that individuals' possession of distinguished relationships within specific interactions through friendly or family relationships was a source of financial information about formal saving, credit, and insurance and remittance services. Consequently, such information opportunities positively increased one's ability to overcome the perceived difficulties relating to access and use of formal financial services and managing their financial goals. Therefore the hypothesis ***H9*** *that there is a positive relationship between social networks and financial inclusion among individuals in Uganda* was supported by the model results as conceptualised.

There was no relationship between subjective norms and financial inclusion (p>.001). The results infer that an individual's belief about what those significant to them, say spouse, family member, friends or supervisor thought about their choices and consequent behaviour did not influence their access and use of financial services. Therefore the hypothesis ***H8:*** *There is a positive relationship between subjective norms and FI among individuals in Uganda* was not supported, contrary to our theorisation.

There was a significant negative relationship between financial attitude and financial self-efficacy (p<.001). The results showed that as financial attitude increased by one unit, financial self-

efficacy decreased by 0.192 units at p<.001. This suggests that an individual's evaluative judgment of whether using financial services was desirable and favourable reduced the level of confidence for individuals to deposit money, use saving facilities, borrow money, use of insurance services and remittances services. Therefore providing support for hypothesis ***H4*** *that there is a positive relationship between financial attitude and FSE among individuals* in Uganda.

There was a significant positive relationship between financial literacy and financial self-efficacy (p<.001). The model results essentially indicate that a positive change in the level of skills, knowledge and understanding of the basic financial concepts regarding financial services is associated with an increase in an individual's level of confidence to manage tasks specifically relating to access and use of financial services. Therefore providing support for hypothesis ***H5*** *that there is a positive relationship between financial literacy and financial self-efficacy among individuals in Uganda.*

There was a significant positive relationship between social networks and financial self-efficacy (p<.001). The results inferred that individuals' possession of distinguished relationships within specific interactions through friendly or family relationships was a source of financial information about formal saving, credit, and insurance and remittance services. The possession of such information derived from the social networks within which individuals were embedded consequently increased their level of confidence to access and use of financial services in order to achieve their financial goals. Therefore the hypothesis ***H3:*** *There is a positive relationship between social networks and FSE among individuals in Uganda* was supported.

There was a significant positive relationship between subjective norms and financial self-efficacy (p<.001). The results infer that an individual's normative belief about what those significant to them, say spouse, family member, friends or supervisor, thought about their choices and consequent behaviour increased their level of confidence to pursue the use of financial services. Therefore the model results provide support for hypothesis ***H2*** that *there is a positive relationship between subjective norms and FSE among individuals in Uganda*.

There is limited empirical evidence in financial inclusion literature providing evidence on the relationships between personal capabilities (financial attitude, financial literacy), societal capabilities (social networks and subjective norms) and financial self-efficacy. Therefore, the study findings provide a broader and more precise understanding of the financial self-efficacy among individuals in the financial inclusion and financial behaviour.

5.4.1.1 Testing Hypotheses of the Interaction Variables; Personal Capabilities (PC), Societal Capabilities (SC), the combination of between PC and SC

Research question four (4) was assessed to determine the extent to which the combined/interaction effect of the independent variables PC and SC had on financial self-efficacy and financial inclusion. Using structural model estimation, this research question was examined through testing of hypotheses ***H10, H11, H12, H13, H14, H15*** and multiplicative (PCSC) structural model as presented in Figure 5.9 and Table 5.19.

The results generated a chi-square value of 1.390 at p=.238 for 1 degree of freedom. The P-value is less than .05 suggesting relatively good model fit. Additionally, other recommended model fit

indices specifically GFI=.999, NFI=.999, RFI =.990, IFI=1.000, TLI=.997, CFI=1.000; RMSEA=.031 which suggested acceptable model fit. These results are also consistent with the accepted model fit levels provided by Bentler, (2007); Hair et al., (2010); Hu & Bentler, (1999).

Figure 5.10: Testing Hypotheses of Interaction Study Variables

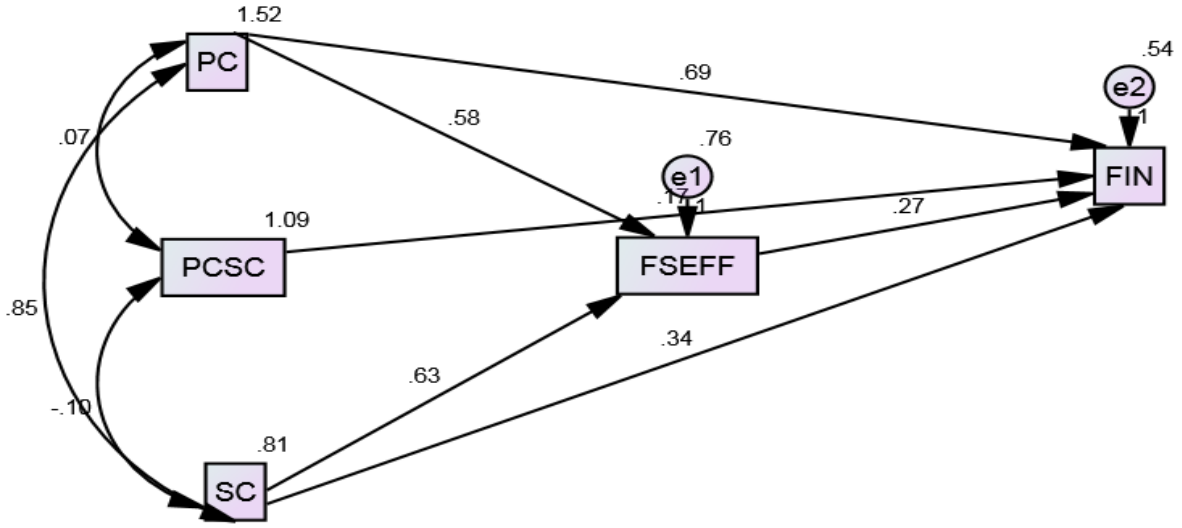


Table 5.19: Regression Weights for Personal Capabilities, Societal Capabilities, and the Interaction of PCSC

			B	S.E.	β	P	*Hypothesis Supported?*
FSEFF	<---	PC	.583	.055	.481	***	*Yes*
FSEFF	<---	SC	.634	.076	.382	***	*Yes*
FIN	<---	PC	.691	.053	.520	***	*Yes*
FIN	<---	PCSC	.168	.036	.107	***	*Yes*
FIN	<---	SC	.342	.071	.188	***	*Yes*
FIN	<---	FSEFF	.272	.042	.248	***	*Yes*
FSEFF	<---	PCSC	.051	.043	.035	.238	*No*

***Significant at the 0.001 level (2-tailed); Personal capabilities (PC); Societal capabilities (SC)
Source: Primary data, 2015

The structural model results in Figure 5.9 and Table 5.19 reveled the following;

There was a significant positive relationship between personal capabilities and financial inclusion (p<.001). The results inferred In this regard, an individual financial consumer needs to have an

evaluative judgment of whether or not to use financial services as well as possess awareness and understanding of basic financial concepts and products in order to collectively achieve financial inclusion. Therefore the hypothesis ***H13:*** *There is a positive relationship between personal capabilities and financial inclusion among individuals in Uganda* was supported.

There was a significant positive relationship between societal capabilities and financial inclusion ($p<.001$). The results implied that individuals' possession of social relationships through which financial information is derived as well as the normative beliefs of their significant others combined, greatly influence and increase the access and use financial services. Therefore the findings supported hypothesis ***H15:*** *There is a positive relationship between Societal Capabilities and FI among individuals in Uganda*.

There was a significant positive relationship between the interaction of PC and SC and financial inclusion ($p<.001$). The results suggest that a combination of personal and societal capabilities is necessary in order to realize a significant increase in individual access, use and quality of financial services. Therefore the hypothesis ***H11:*** *There is a positive relationship between the interaction of PC and SC on FI among individuals in Uganda* was supported.

There was a significant positive relationship between personal capabilities and FSE ($p<.001$). The results showed that personal capabilities which included a combined effect of an individual's evaluative judgment as well as financial knowledge and skills regarding financial services positively enhanced an individual's levels of confidence regarding the use of financial services.

Therefore, the structural model results provide support for hypothesis ***H12:*** *There is a positive relationship between personal capabilities and FSE among individuals in Uganda*.

There was a significant positive relationship between societal capabilities and FSE ($p<.001$). This implied that SC positively influenced FSE. This implied that societal capabilities which included a combined effect of social relations and normative beliefs of significant others improved individuals' levels of confidence regarding the use of financial services. Therefore the hypothesis ***H14:*** *There is a positive relationship between SC and FSE* was supported.

There was no significant positive relationship between the interaction of PC and SC and FI ($p>.001$). The results suggest that a combination of personal and societal capabilities is not important in enhancing individuals' levels of confidence regarding the use of financial services. Therefore the hypothesis the results failed to support ***H10:*** *There is a positive relationship between the interaction of PC and SC on financial self-efficacy*.

While there is no empirical evidence in financial inclusion and financial self-efficacy literature on the effect of PC (financial attitude and financial literacy) and SC (social networks and subjective norms) and combined PCSC as predictors of financial inclusion and financial self-efficacy respectively, the findings provide a broader and more precise understanding of the complex and different nature of individuals towards the access and use of formal savings, credit, insurance and remittance services. The findings further provide a new articulation of financial self-efficacy and financial inclusion that is focused on the behavioural capabilities of an individual.

5.4.2 Testing for Mediation effect of Financial Self-efficacy on Study Variables

The concept of mediation denotes causal relationships whereby an intervening variable influences the effect that predictor variable exerts on the dependent variable. In this study, the mediation effect of financial self-efficacy between financial attitude, financial literacy, social networks, PC, SC, the interaction of PC and SC and financial inclusion was assessed. The bootstrap method was used for testing the mediation variable effects. Bootstrapping was selected over other methods like Sobel tests and the causal steps approach to test for mediation mainly because despite the complex and existence of multiple paths within a model, its extrapolation is based on the indirect effect between the predictor and dependent variable respectively (Preacher, Rucker, & Hayes, 2007).

Prior testing for mediation effects, the Baron and Kenny (1986) criteria for establishing existence of mediation were met as presented below, thus providing a basis for testing hypotheses ***H16:*** *Financial self-efficacy mediates the relationship between PC and financial inclusion,* ***H16a1:*** *FSE financial self-efficacy mediates the relationship between financial attitude and financial inclusion,* ***H16a2:*** *FSE mediates the relationship between financial literacy and financial inclusion,* ***H16b:*** *FSE mediates the relationship between SC and financial inclusion,* ***H16b1:*** *FSE mediates the relationship between social networks and financial inclusion,* ***H16b2:*** *FSE mediates the relationship between subjective norms and financial inclusion,* ***H16c:*** *FSE mediates the relationship between the interaction of PC and SC and financial inclusion.*

a) There was a significant direct effect of the financial literacy, social networks, subjective norms, except financial attitude and subjective norms:- financial attitude (β=-.083; S.E=.098,

p-value=.021), financial literacy (β=-.691 S.E=.089, p=.000), social networks (β=.193; S.E=.051, p=.000) and subjective norms (β=-.100; S.E=.069, p=.031) on financial inclusion.

b) There was a significant direct effect of the financial literacy, social networks, subjective norms, except financial attitude and subjective norms: financial attitude (β=-.094; S.E=.089, p-value=.084), financial literacy (β=.443, S.E=.068, p=.000), social networks (β=.251; S.E=.047, p=.000) and subjective norms (β=-.262; S.E=.064, p=.000) on financial self-efficacy.

c) The was a significant direct effect of financial self-efficacy on financial inclusion (β=-.530; S.E=.214, p=.000)

d) Results indicated that the effect of the financial literacy and social networks increased when financial self-efficacy was introduced into the model except financial attitude and subjective norms. Financial attitude significantly reduced when the mediator - financial self-efficacy was included in the equation.

However, the significance of the results that suggest mediation is not yet tested because we cannot rely on Baron and Kenny (1986)'s regression equation to prove the mediation hypotheses. Therefore, SEM guidelines for mediation recommended by Hair et al. (2010) were consistently followed to test for mediation effects after establishing the conditions for mediation above. Assessment of the cut off accept/reject criteria of fit indices suggested by Bentler, (2007); Hu & Bentler, (1999) included; chi-square statistic (χ^2) , degrees of freedom (Df), p-values, GFI, AGFI, the baseline comparisons indices; NFI, RFI, IFI, TLI, CFI; RMSEA, parsimony adjusted measures; PNFI, PCFI, AIC, CAIC, E CVI and predictive power as reported in table 4.20.

5.4.3 Validating the Competing Hypothesized Financial Inclusion Models

In this study, full and partial mediation was tested for statistical significance which is a test of whether the independent variables - financial attitude, financial literacy, social networks, subjective norms, PC, SC and the interaction of PC and SC and dependent variables - financial inclusion is completely accounted for by the mediator - financial self-efficacy (Hair et al., 2010).

SEM was further used to confirm and substantiate the hypotheses and mediation effects of the predictor variables and interaction effect models and variables with financial inclusion. This was done by testing for both partial and full mediation of competing models to make valid comparisons and ensure superiority of the hypothesised model.

Figure 5.11: Partial Mediation of Financial Self-efficacy on the Relationship between Independent Variables and Financial Inclusion

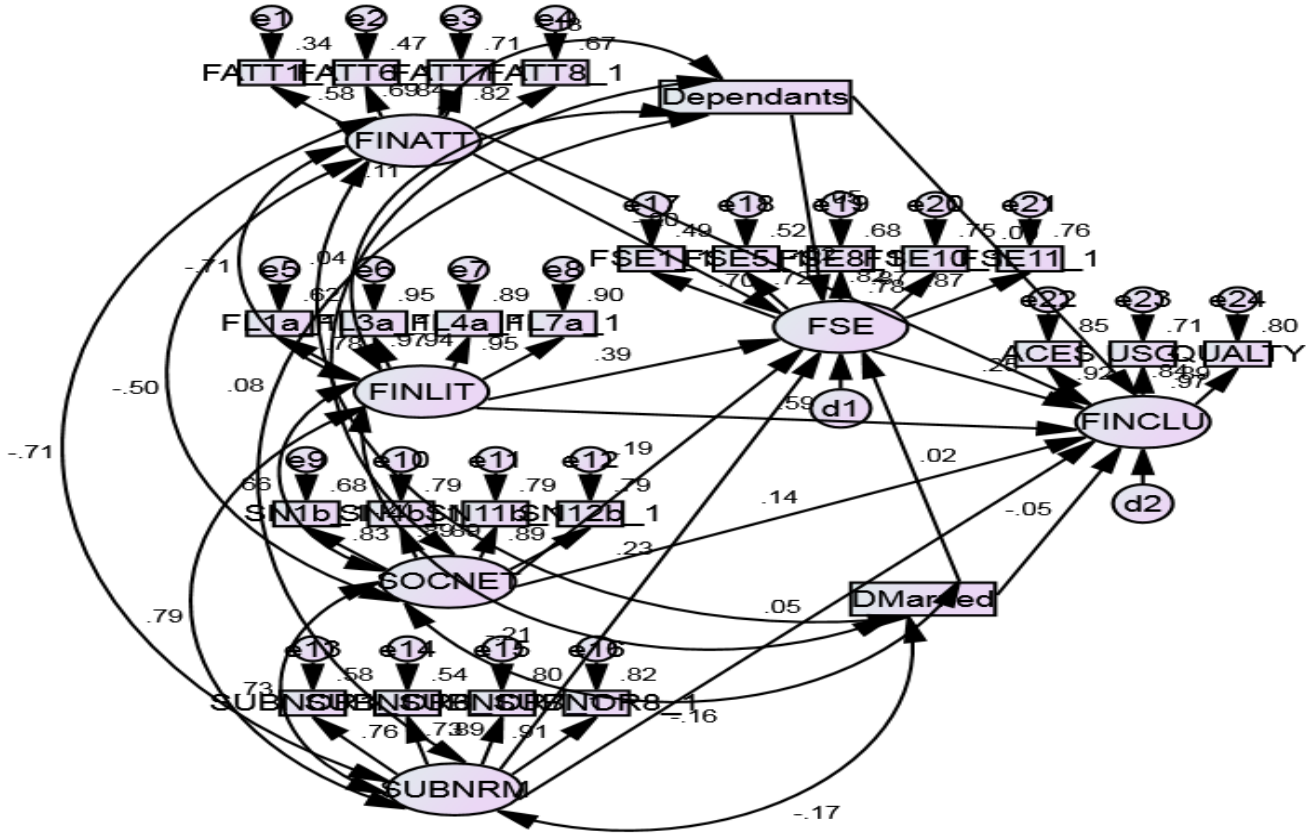


Figure 5.12: Full Mediation of Financial Self-efficacy on the Relationship between Independent Variables and Financial Inclusion

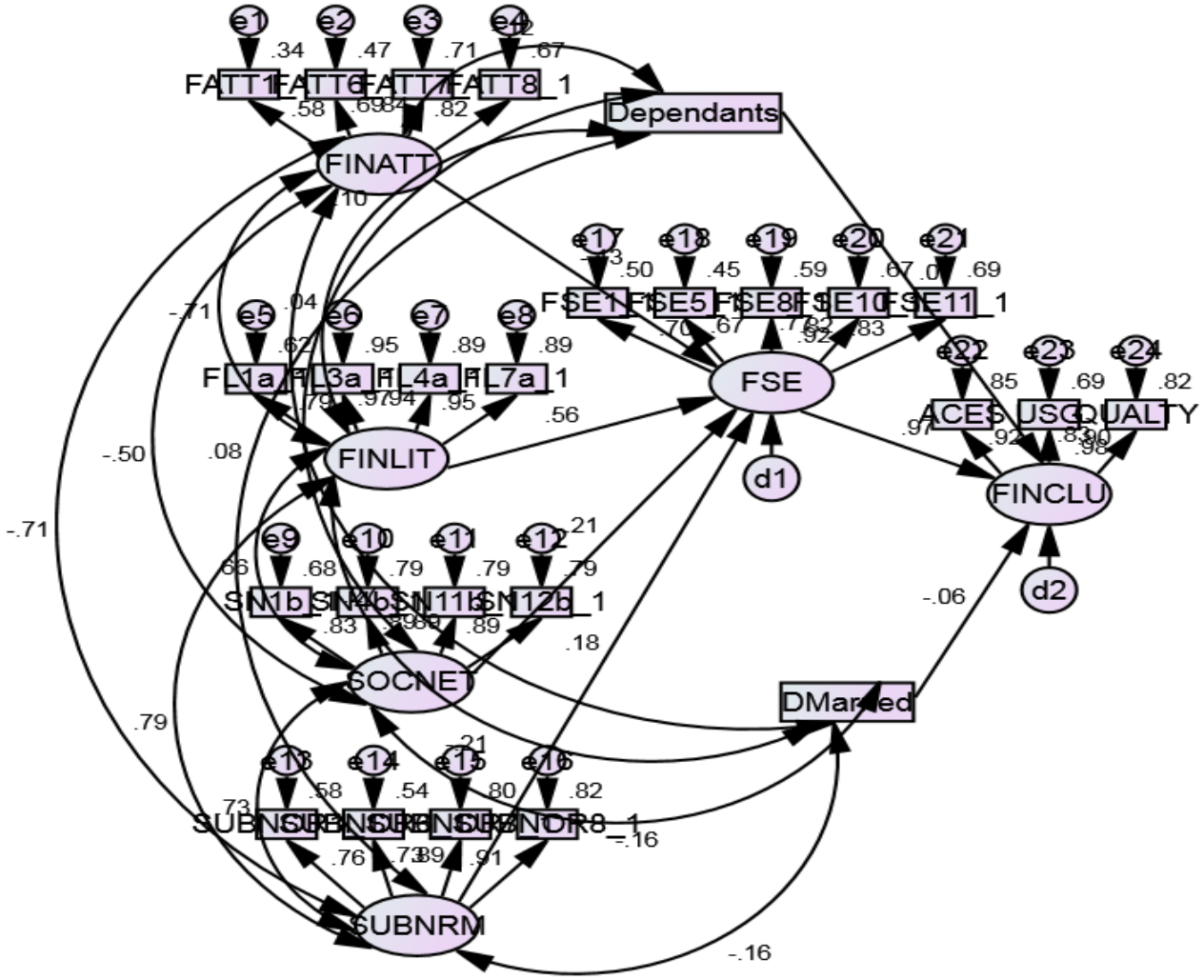


Figure 5.13: Partial Mediation of Financial Self-efficacy on the Relationship between Interaction of Personal Capabilities with Societal Capabilities and Financial Inclusion

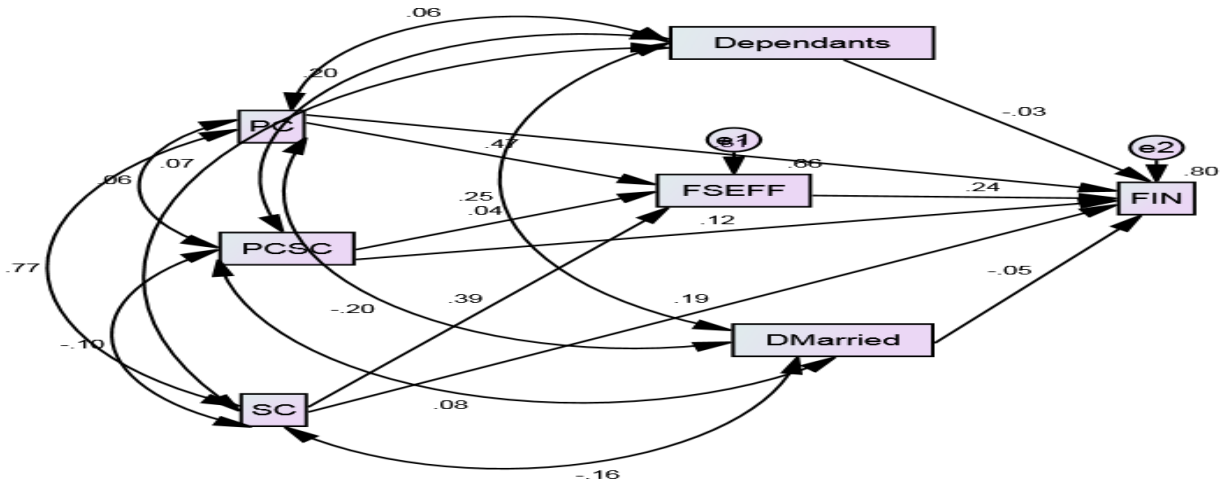
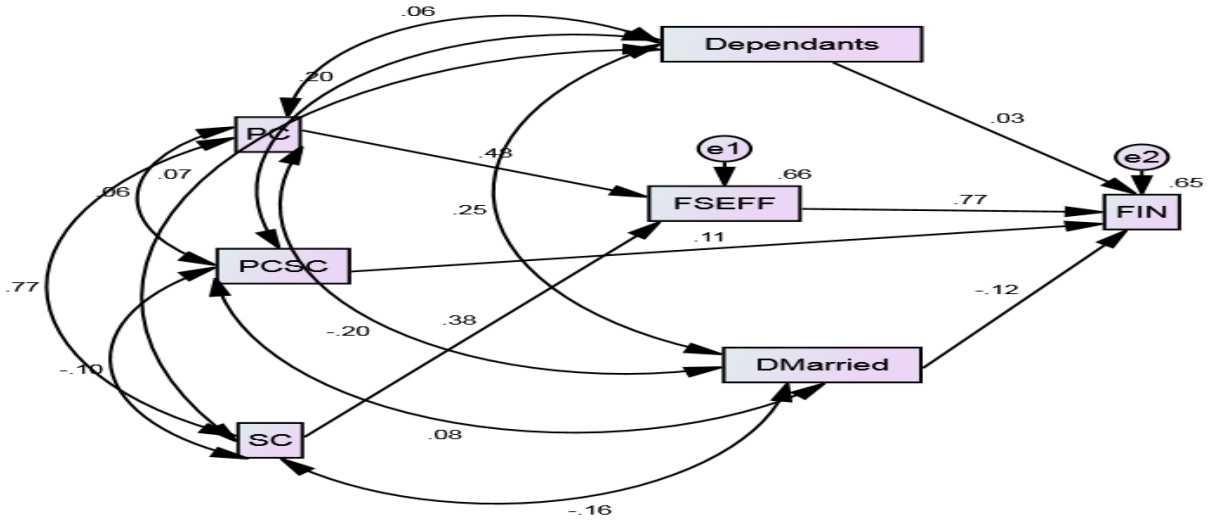


Figure 5.14: Full Mediation of Financial Self-efficacy on the Relationship between Interaction of Personal Capabilities with Societal Capabilities and Financial Inclusion



In this study, because of the presence of a number of models, the competing models strategy was adopted to determine the model that best fits or explains the mediation effects as hypothesised. Hair et al. (2010) recommended that it is important to determine which model best explains or test the theories in model isolation. Table 5.20 presents the structural model

statistics for the competing mediation models for the hypothesised variables including the interaction terms.

Table 5.20: Structural Model Statistics for Competing Mediation and Interaction Models

Model Fit Index			Mediation Models		Interaction Models	
			Full	Partial	Full	Partial
Absolute measures						
χ^2			1152.67	989.91	232.54	3.589
DF			280	276	5	2
P Value			.000	.000	.000	.166
RMR			.185	.172	.115	.051
GFI			.810	.837	.888	.997
AGFI			.762	.792	.374	.964
RMSEA			.08	.08	.34	.05
Comparative fit measures						
NFI			.884	.900	.848	.998
RFI			.865	.882	.361	.975
IFI			.909	.926	.851	.999
TLI			.894	.912	.366	.989
CFI			.909	.925	.849	.999
Parsimony Measures						
PCLOSE			.000	.000	.000	.439
PNFI			.761	.764	.202	.095
PCFI			.783	.786	.202	.095
Path l			β	β	β	β
FSE	<---	FINLIT	.557***	.387***		
FSE	<---	SOCNET	.210***	.193***		
FSE	<---	FINATT	-.126***	-.196***		
FSE	<---	SUBNRM	.175***	.231**		
FIN	<---	FSE	.975***	.253***		
FIN	<---	SOCNET		.140***		
FIN	<---	FINLIT		.586***		
FIN	<---	SUBNRM		.051		
FIN	<---	FINATT		-.021		
FIN	<---	A7		-.001		
FIN	<---	DMarried		-.055		
FSEFF	<---	PC			.481***	.470***
FSEFF	<---	PCSC				.035
FSEFF	<---	SC			.382***	.394***
FIN	<---	FSEFF			.773***	.244***
FIN	<---	PC				.508***
FIN	<---	PCSC			.110**	.118***
FIN	<---	SC				.193***
FIN	<---	A7			.028	-.028
FIN	<---	DMarried			-.122	-.054
Variance Explained			R2	R2	R2	R2
FSE			.921	.781	.659	.660
FINCLU			.980	.969	.653	.804

Source: Primary data

The comparison results presented in Table 5.20 show the differences in partial and full mediation for both the hypothesised models (study variables and interaction variables). Results further indicate that the full mediation model in Figure 5.11 generated a χ^2 =1152.67, P=.000 for 280 degrees of freedom, RMR= .185, NFI= .884, RFI=.865, IFI=.909, TLI=.894, CFI= .909 and RMSEA = .08, which indicated a relatively acceptable model fit when compared to the criteria indices. Partial mediation in Figure 5.10 on the other hand generated χ^2 =989.91, P=.000 for 276 degrees of freedom, χ^2 /DF = 3.6, RMR= .172, NFI= .900, RFI=.882, IFI=.926, TLI=.912, CFI= .925 and RMSEA = .08, which suggested a better acceptable model fit when compared to the full mediation results.

The interaction full mediation model presented in Figure 5.13 generated a χ^2 =232.54, P=.000 for 5 degrees of freedom, χ^2 /DF = 46.51, RMR= .115, GFI= .888, AGFI= .374, NFI= .848, RFI=.361, IFI=.851, TLI=.366, CFI= .849 and RMSEA = .34, which indicated a poor and unacceptable model fit. The interaction partial mediation model in Figure 5.12 however generated χ^2 =3.59, P=.166 for 2 degrees of freedom, χ^2 /DF = 1.79, RMR= .051, NFI= .998, RFI=.975, IFI=.999, TLI=.989, CFI= .999 and RMSEA = .05, which indicated a very good and acceptable model fit. The results generated in Table 5.20 are an indication and justification that there was no need for any model modifications specifically to the hypothesised partially mediated and interaction models earlier generated.

When the two competing mediation models are confirmed against the criterion indices, results presented in Table 5.20 indicate that partially mediated models for both unobserved and interaction variable models provide a more accurate and better representation of the study data. This is further confirmed using the criteria provided by Hair et al. (2010) for competing model

strategy determination. We specifically look out for a smaller chi square value specifying the difference in the model covariance. The number of significant hypothesised paths, amount of variance explained by each model and finally the assessment of the parsimony fit indices were also determined according to their cut off criteria. According to the comparison and selection criteria, we noted differences in chi-square values, significant hypothesised paths, amount of variance explained and parsimony values. The partial mediation models for all variables including the interaction variables presented a better representation of the study variable correlations in terms of small chi square values, more significant paths represented, relatively higher variance explained and better parsimony fit indices as shown in Table 5.20.

5.4.2 Assessment of Direct and Indirect Mediation Effects of Financial self-efficacy

In this study, the bootstrap procedure provided by Preacher & Hayes, (2008); Preacher et al., (2007) was used to test significance of the mediation using the direct and indirect mediation effects in the following hypotheses; ***H16:*** *Financial self-efficacy mediates the relationship between personal capabilities (PC) and financial inclusion,* ***H16a1:*** *Financial self-efficacy mediates the relationship between financial attitude and financial inclusion,* ***H16a2:*** *Financial self-efficacy mediates the relationship between financial literacy and financial inclusion,* ***H16b:*** *Financial self-efficacy mediates the relationship between societal capabilities and financial inclusion,* ***H16b1:*** *Financial self-efficacy mediates the relationship between social networks and financial inclusion,* ***H16b2:*** *Financial self-efficacy mediates the relationship between subjective norms and financial inclusion,* ***H16c:*** *Financial self-efficacy mediates the relationship between the interaction of PC and SC and financial inclusion.* The hypotheses previously tested in the following sections were also confirmed using the standardised mediation effects. Preacher et al. (2007) argued that in

order to accurately confirm and consequently interpret the data, emphasis should be based on both the standardised direct and indirect effects.

Following the assessment of the significance of the direct and indirect effects on financial inclusion, confirmation of the mediation and hypotheses was done (Preacher & Hayes, 2004). Analysis was performed using the maximum likelihood (ML) parametric bootstrap method, 2000 re-samples of 400 observations. Maximum likelihood method was selected in order to maximise the number of iterations to achieve better results. The analysis provided the average bootstrap estimates of the indirect and direct effects and 95% confidence intervals. This was done by determining the 2.5% lower bound values and 97.5% upper bound values in the distribution of the indirect effect estimates from each bootstrap sample as presented in Table 5.21 and Table 5.23.

Table 5.21: Regression Path coefficients for the Partially Mediated Model

			B	S.E.	β	P	Lower bound	Upper Bound	***Hypothesis Supported?***
FSE	<---	FINLIT	.428	.068	.387	***	.268	.502	
FSE	<---	SOCNET	.175	.046	.193	***	.060	.343	
FSE	<---	A7_1	-.018	.011	-.051	.085			
FSE	<---	DMarried	.042	.079	.016	.592			
FSE	<---	FINATT	-.315	.092	-.196	***	-.330	-.070	
FSE	<---	SUBNRM	.204	.063	.231	.001	.030	.462	
FINCLU	<---	FSE	.428	.084	.253	***	.144	.365	
FINCLU	<---	SOCNET	.214	.050	.140	***	.105	.272	*Yes*
FINCLU	<---	A7_1	-.001	.011	-.001	.957			
FINCLU	<---	DMarried	-.239	.083	-.055	.004			
FINCLU	<---	FINLIT	1.095	.087	.586	***	.589	.771	*Yes*
FINCLU	<---	SUBNRM	.076	.067	.051	.255	.002	.226	*Yes*
FINCLU	<---	FINATT	-.058	.097	-.021	.549	-.156	.012	*Yes*

*** p- value at 0.001
Source: Primary data

Table 5.22: Total, Direct and Indirect Effects for the Partially Mediated Model

Standardized Total Effects					
	SUBNRM	SOCNET	FINLIT	FINATT	FSE
FSE	.231*	.193**	.387***	-.196**	-
FINCLU	.110*	.188***	.684***	-.071	.253**
Standardized Direct Effects					
FSE	.231*	.193**	.387***	-.196**	-
FINCLU	.051	.140**	.586***	-.021	.253**
Standardized Indirect Effects					
FSE	-	-	-	-	-
FINCLU	.059*	.049**	.098***	-.050**	-

*** p- value at 0.001, ** p-values at 0.01, * p-value at 0.05
Source: Primary data

The results in Table 5.21 and Table 5.22 indicate significant mediation effect of financial self-efficacy between financial literacy, social networks and financial inclusion and an insignificant mediation effect between financial attitude, subjective norms and financial inclusion. The results in Table 5.22 further show that; 5% reduction effect of financial attitude, 9.8% effect of financial literacy, 1.4% effect of social networks and 5.9% effect of subjective norms on financial inclusion through financial self-efficacy is indirect. The direct effect therefore on financial inclusion through financial self-efficacy is; -2.15% reducing effect, 58.6%, 14% and 5.1% respectively. This is an indication that changes in financial literacy and social networks can also be directly and indirectly associated with changes in financial inclusion. However, results further indicate that changes in financial attitude and subjective norms can only be directly associated with financial inclusion without going through financial self-efficacy.

Given the significant results (p>.001) presented in Table 5.21, it is inferred that financial self-efficacy partially mediates the relationship between financial literacy, social networks and financial inclusion respectively. Additionally, the insignificant results (p>.001) imply that financial

self-efficacy fully mediates the relationship between financial attitude, subjective norms and financial inclusion respectively. The results therefore provide support for hypotheses; - ***H16a1:*** *Financial self-efficacy mediates the relationship between financial attitude and financial inclusion,* ***H16a2:*** *Financial self-efficacy mediates the relationship between financial literacy and financial inclusion,* ***H16b1:*** *Financial self-efficacy mediates the relationship between social networks and financial inclusion,* ***H16b2:*** *Financial self-efficacy mediates the relationship between subjective norms and financial inclusion.*

5.4.4.1 Interaction Model Effects estimation

Research question 8 was assessed to determine the extent to which financial self-efficacy mediated the combined/interaction effect of the independent variables (Personal capabilities (PC), societal capabilities (SC), PCSC) and financial inclusion. Using structural model estimation and the standardized total, direct and indirect effects were examined through testing of hypotheses ***H16a:*** *Financial self-efficacy mediates the relationship between PC and financial inclusion*, ***H16b:*** *financial self-efficacy mediates the relationship between SC and financial inclusion*, ***H16c:*** *financial self-efficacy mediates the relationship between the interaction of PC and SC and financial inclusion* as presented in Table 5.23.

Table 5.23: Regression Coefficients for the Partially Mediated Interaction Model

			B	S.E.	β	P	Lower Bound	Upper Bound	*Hypothesis Supported?*
FSEFF	<---	PC	.568	.056	.470	***	.360	.567	
FSEFF	<---	PCSC	.051	.043	.035	.238	-.026	.096	
FSEFF	<---	SC	.655	.078	.394	***	.284	.502	
FIN	<---	FSEFF	.268	.042	.244	***	.161	.333	
FIN	<---	A7_1	-.013	.011	-.028	.238			
FIN	<---	DMarried	-.185	.080	-.054	.021			
FIN	<---	PC	.675	.053	.508	***	.542	.699	*Yes*
FIN	<---	PCSC	.186	.037	.118	***	.072	.184	*Yes*
FIN	<---	SC	.353	.070	.193	***	.204	.374	*Yes*

*** p- value at 0.001
Source: Primary data

Table 5.24: Total, Direct and Indirect Effects for the Partially Mediated Interaction Model

Standardized Total Effects				
	SC	PCSC	PC	FSEFF
FSEFF	.394***	.035	.470**	-
FIN	.290***	.127***	.623**	.244***
Standardized Direct Effects				
FSEFF	.394***	.035	.470**	-
FIN	.193***	.118***	.508***	.244***
Standardized Indirect Effects				
FSEFF	-	-	-	-
FIN	.096***	.009	.115***	-

*** p-value at 0.001, ** p-values at 0.01, * p-value at 0.05

Based on the bootstrap procedure provided by Preacher & Hayes, (2008); Preacher et al., (2007), the significant results (p<.001) presented in Figure 13, Table 5.23 and Table 5.24 specified that financial self-efficacy partially mediates the relationships between PC, SC, PCSC and financial inclusion respectively. The results therefore provide support for hypotheses; - ***H16:*** *Financial self-efficacy mediates the relationship between PC and financial inclusion*, ***H16b:*** *financial self-efficacy mediates the relationship between SC and financial inclusion*, ***H16c:*** *financial self-efficacy mediates the relationship between the interaction of PC and SC and financial inclusion.*

The results in Table 5.24 further shows that; 11.5% effect of PC, 0.9% effect of PCSC, 9.6% effect of SC on financial inclusion through financial self-efficacy is indirect. The direct effect therefore on financial inclusion through financial self-efficacy was; 50.8%, 11.8%, 19.3% respectively. This is an indication that changes in PC, SC and PCSC can also be directly and indirectly associated with changes in financial inclusion.

5.5 Structural Equations

In this study we finally present the structural models of partial mediation effect of financial self-efficacy in the relationships between financial attitude (FATT), financial literacy (FL), social networks (SN), subjective norms (SUBNRM), personal capabilities (PC), societal capabilities (SC), the interaction of PCSC and financial inclusion (FI) respectively, as one of the core contributions of this study in terms of the following equations;

Partial Mediation

$FSE=\beta_1 FL+ \beta_2 SN+\beta_3 FATT+ \beta_4 SUBNRM+e_1$

$FI= \beta_1 FSE+ \beta_2 FL+\beta_3 SN+ \beta_4 FATT+ \beta_5 SUBNRM +e_2$

Where**:** e is the error term

$\beta_{1, 2, 3, 4.....n}$ are the beta standardized coefficient estimates

Therefore,

FSE=.383FL+.193SN-.196FATT+.231SUBNRM+.341……..*Equation 1a*

FI=.253FSE+.140SN+.588FL+.139……*Equation 1b*

Financial self-efficacy (FSE) is also an endogenous variable, despite being a mediating variable as determined in equation 1a which has been used to substitute FSE in the FI equation. Therefore;

FI=.253(.383FLIT+.193SN-.196FATT+.231SUBNRM+.341) +.140SN+.588FL+.139

FI = .097FLIT+.049SN-.049FATT+.058SUBNRM+.140SN+.588FL+.86+.139

FI=.685FLIT+.189SN-.049FATT+.058SUBNRM+.225 ……*Equation 1c*

Interaction structural model equations

Partial Mediation

$FSE=\beta_1 PC+ \beta_2 SC + \beta_3 PCSC + e_1$

$FI= \beta_1 FSE+ \beta_2 PC+\beta_3 SC+ \beta_4 PCSC+ e_2$

FSE=.470PC+.394SC+.757……*Equation 2a*

FI=.244FSE+.526……*Equation 2b*

The financial self-efficacy (FSE) equation determined in equation 3a has been used to substitute FSE in the FI equation therefore;

FI=.244(.470PC+.394SC+.757) +.526

FI=.116+.096SC+.185+.526

FI=.116PC+.096SC+.711……*Equation 2c*

5.6 Testing for Non-Spurious Correlation

Non-spurious correlation between the study variables in the hypothesised model was tested by comparing the two extracted structural model path coefficients presented in Table 5.20. Model 1 consisted of the effects between the study variables (financial attitude, financial literacy, social networks, subjective norms, financial self-efficacy and financial inclusion) and Model 2 included the effect of the number of dependents (A7) and dummy marital status (A4) which are the control variables. Hair et al. (2010) posits as a rule that there should not be any difference between the relationships between the variables in model 1 and 2.

Table 5.25: Non Spurious Correlation Results between Study Variables

			Model 1		Model 2	
Path			Estimate	P-values	Estimate	P-Values
FSE	<---	FINLIT	.382	***	.383	***
FSE	<---	SOCNET	.194	***	.194	***
FSE	<---	SUBNRM	.233	***	.234	***
FSE	<---	FINATT	-.188	***	-.187	***
FINCLU	<---	FSE	.253	***	.254	***
FINCLU	<---	SOCNET	.145	***	.139	***
FINCLU	<---	FINLIT	.590	***	.585	***
FINCLU	<---	SUBNRM	.043	.345	.051	.256
FINCLU	<---	FINATT	-.036	.304	-.022	.540
FINCLU	<---	A7_1			-.003	.860
FINCLU	<---	DMarried			-.054	.005

Source: Primary data

Table 5.25 presents results of two model comparisons. The results indicate no significant difference when the control variable (number of dependents -A7 and dummy marital status) were introduced into model 2. Results further indicate that the effect of the control variables remained non-significant in Model 2 except the marital status which implies that the hypothesised causal effects and relationships have a relatively insignificant effect by an individual's marital status or number of dependents. The results confirm that the relationships between the interaction variables in the model were non-spurious.

5.6.1 Testing for Non Spurious correlation for Interaction variables

Table 5.26: Non Spurious Correlation Results between Interaction Variables

			Model 1		Model 2	
Path			Estimate	P-values	Estimate	P-Values
FSEFF	<---	PC	.481	***	.470	***
FSEFF	<---	SC	.382	***	.394	***
FIN	<---	FSEFF	.248	***	.244	***
FIN	<---	PC	.520	***	.508	***
FIN	<---	PCSC	.107	***	.118	***
FIN	<---	SC	.188	***	.193	***
FIN	<---	A7_1			-.028	.238
FIN	<---	DMarried			-.054	.021

Source: Primary data.

Table 5.26 presents results of two model comparisons for the interaction variables, PC, SC and PCSC. The results indicate no significant difference when the control variable (number of dependents -A7 and dummy marital status) were introduced into model 2. Results further indicate that the effect of the control variables remained non-significant for both Model 1 and Model 2. The results suppose that the hypothesised causal effects and relationships are not in any way affected by an individual's marital status or number of dependents. The results confirm that the relationships between the interaction variables in the model were non-spurious.

In the same regard, MacKinnon, Lockwood, Hoffman, West, and Sheets (2002) argued that a number of factors influence psychological behaviours. Thus it is often unrealistic to anticipate that a single mediating variable would actually completely be explained by the relationship between an independent and criterion variable.

5.7 Chapter Conclusions

This chapter presented the results and their interpretation in line with the intended purpose, research questions and hypotheses of the study following the methodology laid out in the chapter three. The definite results are summarised as follows:

1. When EFA and CFA were performed, specific items were retained for each construct and variables that were used for further analysis. CFA further confirmed fewer items compared to EFA.

Construct	EFA	CFA
Financial attitude	8	4
Financial literacy	7	4
Social networks	10	4
Subjective norms	8	4
Financial self-efficacy	7	5
Financial inclusion	39	8

2. Assessment of construct validity and reliability revealed that internal consistency of the items used to measure the study variables were robust. The composite reliability used to measure convergent validity all had AVE values >.50 which was within recommended threshold. The results confirm construct validity and composite reliability of financial inclusion, financial self-efficacy, financial attitude, financial literacy, social networks, subjective norms scales and their dimensions, respectively. Therefore, no significant difference existed between the hypothesised and observed model regarding the individuals' capabilities explaining financial inclusion in Uganda from a behavioural perspective.
3. The zero order Pearson correlation analysis was performed to examine associations between the study variables as hypothesised in the literature review. The results confirmed satisfactory linear associations between financial attitude, financial literacy, social networks, subjective norms, financial self-efficacy and financial inclusion.
4. The structural models were used to determine causal relationships between the variables and testing of the hypotheses. Both the mediation models using the unobserved variable and interaction of unobserved variables were assessed. The Structural Model Statistics for Competing Mediation and Interaction Models were assessed using the criterion of choice, that is using the overall model fit indices, the total percentage of the significant path coefficients and amount of variance explained by each model, as well as the indices of parsimony, specifically PNFI and RMSEA. The results indicate that the partial mediation models for both unobserved and interaction variable models provide a more accurate and better representation of the study data and did not need any modification since they were not significantly different. The chi-square difference was significant for the specified degrees

of freedom and the model remained virtually the same. This is an indication that both models were also not subjected to measurement bias. Hypotheses were accordingly tested using the accept/reject criteria.

5. The bootstrap method was used to test for mediation of financial self-efficacy between the study variables and financial inclusion. Following the assessment of the significance of the direct and indirect effects, the results reveled that financial self-efficacy actually partially mediated the relationship between financial literacy, social networks, personal capabilities (PC), societal capabilities (SC) and the interaction between PCSC. Additionally, financial self-efficacy fully mediated the relationship between financial attitude, subjective norms and financial inclusion respectively. Therefore financial self-efficacy acts as an important conduit between these relationships despite their ability to have a direct effect on financial inclusion.

CHAPTER SIX

Discussion of Study Results

6.1 Introduction

This chapter entails a detailed discussion of the results presented in chapters four and five in relation to theoretical and empirical findings in the existing literature. The discussion is based on the research questions and tested hypotheses that support drawing of definite conclusions within the Ugandan context.

In this study, we draw on Sen, (1993)'s capability approach which is a multi-dimensional understanding of capabilities that people have which enables them achieve outcomes valuable to their lives. The capabilities approach is a generative tool for explaining how personal capabilities (PC) like financial attitude, financial literacy and societal capabilities, like social networks and subjective norms, financial self-efficacy actually influence financial inclusion at the individual level. Sen's capability approach was useful in framing this study because of its ability to broadly incorporate a blend of individual capabilities to facilitate an individual's functionality to achieve a desired outcome. This is because it allows us to think through the related individual capabilities in which financial inclusion is realised from a demand side perspective.

Additionally, in most cases individuals are influenced by different non-financial factors while making financial decisions, possibly depending on the capabilities they possess, their location or their general way of life. Therefore in this study, an assessment of personal and societal capabilities was important to enriching our understanding of FI and generally, financial behaviour from a demand side perspective among individuals.

6.2 Discussion of Study Results

6.2.1 Differences in the study variables across regions

In this study, a comparison of geographical areas was considered essential because the study was undertaken in two distinct regions that represent the rural-lower income segment of Northern Uganda and urban-higher income segment of Central Uganda. The two regions differ in infrastructural availability, distance characteristics to formal financial service providers, for instance, commercial banks and insurance companies, social values and practices in terms of beliefs and customs. These differences possibly contribute to the individuals' capabilities and financial inclusion in these regions respectively.

In Uganda, the Finscope, (2013) survey, while focusing on the demographic and socio-economic barriers to financial inclusion, revealed the differences in banking distribution and socio-economic aspects across the four regions of Uganda. Significant differences were established between the urban and rural locations of Central and Northern Uganda given their political, social and economic differences which is consistent with the study results.

There were significant differences (Sig. =.000) in financial inclusion, financial self-efficacy, personal capabilities (PC), societal capabilities respectively between the two areas. The results reveal higher levels of financial inclusion, financial self-efficacy, personal capabilities and societal capabilities among individuals in the Central compared to Northern region. The results consequently provide support for hypotheses *based on differences in individuals' financial inclusion, financial self-efficacy and the personal and societal capabilities between the two regions.*

The study results are consistent with Vighneswara (2011)'s study on regional distribution of banking services in India. The coverage of services in rural areas was found to be 39% compared to 60% in urban areas. These results provide a true reflection of distribution of banking services in most developing countries. Similarly, regarding regional variations in financial exclusion/inclusion, Kempson & Whyley, (1999); Leyshon & Thrift, (1994); Ssonko, (2010) found that higher levels of banking exclusion were related to areas of deprivation of banking services. In the same regard, Frade, Lopes, Nogueira, Magalhães, and Brinca (2006) found that the distribution of individuals' use of credit services is unequal based on socio-economic status, and also geographical differences. This demonstrates that urban area inhabitants have higher chances of accessing formal financial services, compared to the rural inhabitants.

Relating to the capabilities aspect, Gnan, Silgoner, and Weber (2007) noted that cognitive attributes such as financial literacy and attitude differ depending on the environment in which individuals live and what they are exposed to. Congruently, Ford and Rowlingson (1996) found that individuals' decisions towards the kind of financial institutions as well as products and services to use are certainly influenced by culture, values and customs which definitely differ across regions of Uganda and from one individual to another. This is demonstrated by the diverse and distinct social dimensions that influence financial behaviour and consequently, the way individuals perceive financial services in the different regions.

While there is no extant empirical evidence for comparison in financial inclusion literature on differences in financial inclusion, personal and societal capabilities, the findings reflect the need for a broader and more precise understanding of the complex nature of societies and the people that dwell in those locations. Furthermore, the strong and consistent differences suggest that

future research should certainly take into account that individuals across regions may possess the same capabilities but their ability to effectively apply these capabilities to access and use financial services greatly differs when assessed independently. The significant findings reinforce the participation in the financial system irrespective of the differences in an individual's financial self-efficacy, personal and societal capabilities.

The results bring to the forefront the reality that there is an uneven distribution of formal banking services in terms of access points and banking agents across the regions which also spills over to the utilisation of capabilities that individuals possess. Therefore, for more equitable progress, especially in the deprived regions like Northern Uganda, there is a need to address the banking needs. This is in terms of enhancing distribution through supply side strategies and supporting demand side factors that inhibit financial inclusion. Therefore, the initiatives by policy makers and financial institutions should focus on the delivery of specifically designed products and services that are easily understandable and culturally appropriate to those who live in deprived rural communities despite the challenges providers may face in reaching out to those segments.

6.2.2 Relationship Hypotheses of the study variables

In this study, the hypothesized model which illustrates the influence of personal and societal capabilities and financial self-efficacy on financial inclusion reveals variations in the results presented in previous chapters four and five. Based on the financial inclusion prediction model and study results, this section provides meaning to the hypotheses that were tested within the Ugandan context while comparing the results to existing literature and theoretical perspectives on financial inclusion.

6.2.2.1 Financial Self-efficacy and Financial Inclusion

This study sought to examine the extent to which financial self-efficacy influenced financial inclusion. The SEM standardised path coefficient results indicated that there was a strong positive relationship between financial self-efficacy and financial inclusion (β=.288, p<.001). The hypothesis **H_1** that there *is a positive relationship between financial self-efficacy and financial inclusion among individuals in Uganda* was consequently supported.

The significant and positive relationship suggests that when an individual financial consumer possesses high levels of confidence to manage tasks specifically relating to financial services, it is related to higher financial inclusion. This is true because ordinarily for an individual to perform a task, one is highly dependent on the ability to overcome any difficulty associated with achieving the outcome. This is an indication that it is important to build confidence among individuals to realise financial inclusion. Additionally, when an individual consumer has significantly high levels of self-efficacy, they demonstrate a greater level of sureness in case they experience challenges regarding the access and usage of the financial services provided.

In the financial inclusion literature, it is only very recently that scholars have begun to examine the concept of self-efficacy within the finance domain. However, assessment has mainly been skewed towards the influence of financial self-efficacy on broad financial behaviour within developed contexts. This is consistent with Bandura (1986, 1995); Bandura and Schunk (1981) who acknowledged and applauded self-efficacy as a major predictor of successful performance and behavioural outcome across various contexts that are people focused.

The study findings support the contention of the social cognitive theory which asserts that individuals are able to control their actions and lives even though their anticipated outcomes may

not necessarily be certain (Bandura, 1977; Bandura, 1986). This study provides further justification in line with Amatucci & Crawley, (2011); Dietz, Carrozza, & Ritchey, (2003); Engelberg, (2007); Forbes & Kara, (2010); Lown, (2012) who argue the level of confidence in one's ability to deal with a financial situation without being overwhelmed is one of the major attributes that positively influences financial behaviour. Additionally, Tokunaga (1993); Locke and Baum (2007) found that among other psychological capabilities, self-efficacy significantly increases the ability for prudent credit users to predict the likelihood of credit problems.

Despite the lack of extant literature on financial self-efficacy to provide further validation to the findings, examining the self-efficacy concept and its relation to financial inclusion is particularly relevant. This is because a financial consumer's cognitions and behaviours might be influenced by a belief in their abilities to engage in a specific task or activity. It is also important to note that sometimes there are certain subjective factors that may either independently or collectively influence an individual's financial self-efficacy levels, for instance: personality (Danes & Haberman, 2007), family history (Shim et al., 2010; Weiser & Riggio, 2010), social influence (Bandura, 1994; Hira, 2012; Pajares, 2002; Schunk & Pajares, 2009). Therefore, while trying to boost individual financial self-efficacy, such factors need to be reflected upon, since their influence may vary from one individual to another.

Despite other scholars like Kinard and Webster (2010) who found that self-efficacy was a weak predictor of risk behaviours, it is important to note that individuals with high levels of financial self-efficacy tend to focus on the financial opportunities and tend to disregard obstacles towards financial inclusion in anticipation of a positive outcome as supported by earlier evidence. This is also highlighted in a recent study by Lapp (2010) which suggested that financial self-efficacy is

the missing link between financial knowledge and effective action towards the access and use of formal financial services.

In conclusion, financial service providers need to support individuals in the development of higher levels of confidence regarding the use of financial services through enhancing confidence levels in management of finance, utilisation of formal financial products and services. These forms of enhancing self-efficacy can certainly help them overcome the adversities that inhibit access and use of financial services.

One must then further question how financial self-efficacy may exert its behavioural effects on individuals. Therefore, formal financial service providers financial inclusion policies need to unravel those specific elements of financial self-efficacy mentioned above that individuals respond to in order to realise changes in financial behaviour and consequently exert higher financial inclusion accordingly.

6.2.2.2 Personal capabilities (PC) and Financial Inclusion

Personal capabilities were captured by a combination of an individual's financial attitude and financial literacy which were used collectively to predict financial inclusion. The joint effect of financial attitude and financial literacy revealed a positive and statistically significant influence on financial inclusion (β=.520 p<.001). Therefore providing support for ***H13*** *that there is a positive relationship between personal capabilities and financial inclusion among individuals in Uganda.* The strong and consistent results suggest that financial inclusion is better explained and influenced when financial attitude and financial literacy are combined into personal capabilities. In this regard, an individual financial consumer needs to have an evaluative judgment of whether

or not to use financial services as well the ability to understand the basic financial concepts and products in order to achieve financial inclusion through the utilisation of one's personal capabilities.

The influence of financial attitude as well as financial literacy in making financial decisions cannot be ignored because these factors are significantly related to motivations for using financial services. Therefore, individuals are more likely to reflect on an outcome using their evaluative judgment and financial knowledge and skills that they possess in order to make financial decisions that consequently affect financial behaviour and financial inclusion. This argument is consistent with (Cosma & Pattarin, 2012; Lea et al., 1993; Pattarin & Cosma, 2012).

While there is no extant empirical evidence in financial inclusion literature on the combined effect of financial attitude and financial literacy to form personal capabilities as a predictor of financial inclusion, the positive and significant findings provide a broader and more precise understanding of the complex and different nature of individuals towards being financially included. In addition, it is important that future research considers the possible relationships between personal capabilities and specific outcomes that focused on individual behaviour.

6.2.2.2.1 Financial Attitude and Financial Inclusion

Hypothesis ***H6*** *that there is a positive relationship between financial attitude and financial inclusion among individuals in Uganda* examined how financial attitude, which is a traditional predictor of behavioural intent in the theory of planned behaviour (TPB), influenced financial inclusion. The expectation was that there was a relationship between financial attitude and one's use of financial services (financial inclusion).

There was no significant (β=-.021, p>.05) relationship between financial attitude and financial inclusion hence supporting the hypothesis. The results showed that the individual's evaluative judgment of whether using financial services was desirable and favourable or not was not related to a consumer's decision in terms of using financial services. However, there is considerable support in prior literature that a positive attitude is likely to lead to behavioural change.

The findings are in line with Taib et al. (2008), who found that attitude may be influenced by other capabilities while predicting individual behaviour which may result into an insignificant and weak direct effect say on financial inclusion. Additionally, a negative and insignificant result can be explained if questionnaire items on attitude are not field or domain specific, which may minimise its predictive power (Fishbein & Ajzen, 1975).

In this study, the issue of specifying the domain was addressed by modifying the scale and survey questions to suit the finance context. This corroborates with studies by Chen et al., (2012); Norvilitis & Mao, (2013); Shih & Ke, (2013) that assessed 'financial' attitude with the intention of increasing the predictive power of attitude within the finance context.

Additionally, literature and models such as the TPB that articulate attitude and behavioural intention have been used in developed contexts, which may not necessarily find support in developing contexts such as the one adopted in this study. From the results, it is noted that the study did not find strong support for using the TPB to predict financial inclusion. In this study, the precepts of TPB were modified by using financial attitude as a direct predictor of behavioural outcome - financial inclusion. This perhaps means that, in order to derive significant results, a mediating variable is required to improve the effect of financial attitude on financial inclusion

since the survey questions incorporated the aspect of intent which is required in measuring financial attitude. This extends the Ajzen and Fishbein (1980)'s precepts that the TPB performs better when predicting intention of behaviour.

The findings in this study however contradict the ideal reality stipulated by Fishbein and Ajzen (2011) who argued that attitudes guide, influence, direct, shape and predict actual behaviour. Therefore, it is anticipated that through a deliberative process, financial consumers evaluate and judge whether undertaking the use of financial services is important towards improving their wellbeing or not. Therefore it becomes difficult and illogical to understand financial inclusion detached from the individual's financial attitude, considering that financial consumers make critical financial choices and decisions from a variety of options.

The findings further oppose studies by Pattarin and Cosma (2012); Livingstone & Lunt, (1992); Norvilitis et al., (2006) which found a positive significant relationship between individuals' attitudes towards financial behaviour specifically relating to motivations for using credit to the other options of financing. Similarly, Godwin and Carroll (1986); Parrotta and Johnson (1998) found a positive significant influence of attitude on financial management and also as the greatest predictor of cash flow management, among other predictors.

In support of the study results, Kamukama, (2012) argued that findings which are opposing in nature should not be treated with surprise. This is because even studies that are simulated should not be expected to provide the same results as the original studies. This study is one such kind. Accordingly, Kamukama, (2011) contended that variations in such studies are expected and

perhaps even add more insight while making a contribution to the body of knowledge both practically and theoretically.

Therefore, despite the fact that financial inclusion involves an individual's judgment regarding the use of formal saving, credit, insurance and remittance services, financial attitude may not necessarily be solely fundamental to that effect. However, irrespective of the limitations and insignificant results, one clear conclusion is that individuals across regions require different support at various stages as they make financial decisions. Whereas financial attitude is important, long term financial strategies that generate changes in individuals' attitude are necessary. This is because changes in attitude are specifically slow and process may be difficult, especially regarding financial choices.

6.2.2.2.2 Financial literacy and Financial Inclusion

The results established that a positive and significant relationship exists between financial literacy and financial inclusion hence supporting ***H7****: There is a positive relationship between financial literacy and financial inclusion among individuals in Uganda* as expected.

The results essentially denote that a positive change in the level of skills, knowledge and understanding of the basic financial concepts regarding financial services is associated with an increase in financial inclusion in terms of access, usage and quality among individuals. This is conceivably true because the more understanding, skills and knowledge an individual has about financial services, the more they are capable of understanding why and how the financial services are used. Additionally, individuals are able to derive the importance of the financial services in order to consequently derive satisfaction.

The results further indicate that if individuals make an effort to improve their knowledge and skills regarding financial services, it may boost financial inclusion in terms of accessing financial service providers irrespective of their proximity, increase their ability to utilise the banking agents. This is because individuals would be aware of the value of these services. In addition, they would also be aware of the requirements to save, borrow and make use of insurance and remittance facilities in formal financial institutions.

The results supported the social learning theory which stipulates that individuals who possess a reasonable level of capacity and conducive supporting conditions that facilitate the acquisition of skills and knowledge have a strong motivational effect toward certain outcomes and behaviour (Bandura, 1971; Bandura & McClelland, 1977). This consistently suggests that individuals believe that possession or acquisition of knowledge and skills regarding financial services will maximise the desired outcome. This will consequently enable individuals to make more informed decisions regarding the use of formal financial services through improved information about the location and proximity of financial institutions, availability of banking agents to provide the services and consumers' awareness of the promptness of services and documentation required.

The findings are in the line of thought with Jappelli and Padula (2013); Lusardi and Mitchell (2013) who found that the complexities arising in the dynamic financial industry requires financial consumers to more actively make financial choices and decisions from an informed perspective. This is despite the fact that a number of potential financial consumers lack the relevant knowledge of financial concepts and the skills required to facilitate their choices and decisions that are most beneficial to improving their quality of life and welfare (Atkinson & Messy, 2011; Hilgert et al., 2003; Lusardi et al., 2010).

Gerardi et al. (2010) found that individuals who had low or no financial knowledge were more likely to take up mortgages and default on them. This study concurs with Mottola (2013) and Lusardi and Tufano (2009)'s findings that individuals with lower levels of financial literacy reported excessive credit loadings due to the failure to judge their debt positions and limited ability to make good financial decisions. Similarly, Allgood & Walstad, (2013); Allgood & Walstad, (2012) linked financial knowledge, mainly focusing on credit, to influence individual financial behaviours and concluded that the cost of ignorance was actually high.

Sarma and Pais (2011) found that adult literacy is positively and significantly associated with financial inclusion implying that the higher the levels of adult literacy, the higher the levels of financial inclusion among economies. Similarly, Hilgert et al. (2003); Christelis et al. (2010) found an association between cognitive abilities like financial literacy and financial behaviour in different financial contexts.

The findings however contradict Bertrand and Morse (2011) who argued that a significant portion of individual choice to use formal financial services, especially credit, is attributable to cognitive biases rather than to sufficient knowledge and skills for decision-making.

It is therefore imperative to conclude that the expanding and dynamic consumer financial markets, especially in Uganda, continue to provide a wide range of financial products and services to choose from, hence influencing individuals' financial decisions as argued by West (2012). It is therefore important for individual financial consumers to possess financial knowledge in order to increase the likelihood of indulging in recommended financial practices. Such practices

relevant to this study include the ability to understand the value of formal saving, credit, and insurance and remittance services.

Relating to financing, it is worth noting that individuals need to have adequate knowledge about choice options they have within the financial system hence stimulating ability towards financial inclusion. This requires an adequate level of understanding of basic financial terminology as highlighted by Rogaly and Fisher (1999). Previous evaluations and this study's results are justifications that demonstrate the valuations of financial literacy towards achieving financial inclusion strategies which consequently lead to positive changes in people's lives. Additionally, high levels of financial literacy in individuals stimulates greater feelings of empowerment in making financial decisions. Therefore, an effective outcome of financial inclusion is also propelled when individuals are exposed to the financial providers and services within their locations that they can easily access.

6.2.2.3 Societal capabilities and financial inclusion

Societal capabilities were represented by individuals' social networks and subjective norms which were collectively used to predict financial inclusion. The combined effect of social networks and subjective norms revealed a positive and statistically significant influence on financial inclusion (β=.188, $p<.01$). Therefore providing support for ***H15*** *that there is a positive relationship between societal capabilities and financial inclusion among individuals in Uganda*.

These findings are defensible in line with previous studies by Whyley, Brooker, and Keehn (2004) who found that social networks are important in building trust and creating familiarity with formal financial service providers. In line with subjective norms, Ford and Rowlingson (1996)

found that individuals' decisions towards the kind of financial products and services and institutions to use are certainly influenced by culture, values and customs.

While there is limited empirical evidence in the financial inclusion literature on the predictive influence of societal capabilities, the findings reflect the need for a broader and more precise understanding of the complex nature of societal attributes that may influence the use of formal saving, credit, insurance and remittance services. This is in terms of breaking of the inadequacy in order to increase one's information and support from significant others about the location and proximity of financial services and financial institutions, availability of banking agents to provide the services, well as promptness of services and documentation required within the formal banking system.

6.2.2.3.1 Social Networks and Financial Inclusion

A significant positive relationship between social networks and financial inclusion was established. This implied that social networks positively associated with financial inclusion thus supporting and accepting accordingly ***H9:*** *There is a positive relationship between social networks and financial inclusion among individuals in Uganda.* This implies that individuals' possession of distinguished relationships within specific interactions through friendly or family relationships was a source of financial information about formal saving, credit, and insurance and remittance services.

In line with the networks theory and empirical evidence, such information opportunities influence financial inclusion by creating awareness about the location and proximity of financial institutions, the various products and services and documentation required through such specific interactions in which individuals are embedded. Such information opportunities positively

increased one's ability to overcome the perceived difficulties relating to access and use of formal financial services and managing their financial goals.

The study finding mirrors Black (2013); Conroy (2005); Rivera, Soderstrom, & Uzzi, (2010) who found that social relationships are an important source of financial information and useful in improving an individual's knowledge about existing financial services. Similarly, Cassar & Wydick, (2010); Jones & Volpe, (2011); Kamukama et al., (2010); Wydick, Karp Hayes, & Hilliker Kempf, (2011) consistently found that networks increase availability of information about sources of financial services, such as credit. Ahlin and Townsend (2007) congruently observed that networks act as a screening device or even guarantors for selecting potential clients in the lending process. Similarly, Biggs et al., (2002); Van Bastelaer, (2000) found that in accessing financial services, networks help supply information and sometimes mechanisms of enforcement and are important elements within most formal and informal programmes that provide credit access and saving opportunities.

The study is further verified by Benoit and Van den Poel (2012) who found that if financial service providers ignore the network effects when deciding which customers to market to, it may lead to sub-optimal decisions. This is because the explicit links that exist among social network members are sources of effective communication about the beneficial and effective use of formal financial savings, credit access, insurance and payment systems and the availability of these services within their proximity. These findings also corroborate Zhang et al. (2012) who found a significant positive relationship between networks and household choice of financial intermediaries.

We can justifiably conclude that the continuous interactions through meetings and other social activities, which are very common in Ugandan societies, may influence individuals' behaviours through the creation of awareness and advice on various financial choices or options, hence financial inclusion. Social networks continue to be viewed as a platform for formulating shared values and preferences, and instruments for pursuing them. Therefore, an individual's ability to value a specific outcome may very often depend on the possibility of acting together with others within the same network who value similar things or outcomes for instance the benefits of using formal financial services to improve one's welfare. This concurs with Evans (2002) who found that organised collectivities such as unions, political parties, village councils, women's groups, are fundamental to individuals regarding lives they have reason to value.

Policy and financial service providers should consider extending their expansion strategies to include group based programmes especially in the rural areas where activities are more communal or network based in order to enable them become more bankable.

6.2.2.3.1 Subjective norms and Financial Inclusion

In this study, subjective norms were found to have a non-significant (β=.052, p>.05) association with financial inclusion. The results infer that an individual's belief about what those significant to them, for instance, their spouse, family member, friends or supervisor thought about their choices and consequent behaviour did not influence their access and use of financial services. Therefore the results did not provide support for hypothesis ***H8*** that *there is a positive relationship between subjective norms and financial inclusion among individuals in Uganda.*

The insignificant findings corroborate the works of Chau & Hu, (2001); Mathieson et al., (2001); Rice et al., (2010) that found weak and insignificant relationships respectively between subjective norms and financial behaviour.

The findings in this study however contradict the majority empirical studies that have shown positive significant relationships between subjective norms and financial behaviour. For instance, the works of seminal economist Akerlof (1980), who argued that subjective norms continue to exist because of the perceived loss of reputation to the individual intending to act from diverting from what the significant others perceive or think about the intended behaviour. Particularly, Liu et al. (2014) found that there was a strong interaction between social norms and financial incentives which significantly influenced the behaviour of market participants. Similarly, Taib et al. (2008) confirmed that subjective norms positively related to intention to engage in home financing. These findings further concur with studies that were predominantly undertaken in customer acceptance (Azam & Lubna, 2013; Gopi & Ramayah, 2007; Lean et al., 2009) which find subjective norms as a significant and positive predictor of behaviour.

The truth is that in Uganda, as per this study, individuals' values or perceptions of those significant to them (family, spouse, friend, co-worker, community member, supervisor), predominantly influences their behaviour regarding their decision to use formal saving, credit, insurance and remittance services. In most cases, what an individual may do, is to observe the financial practices of those significant people and the values they uphold, regarding financial services which they may or may not particularly imitate, but just recognise without necessarily complying with them. This is in line with the theory of planned behaviour (Ajzen, 1991) which

posits that different individuals and environments influence different actions, outcomes, responses and results.

Accordingly, we recognize that this study's results are not far from such observation. The studies that showed positive and significant relationships between subjective norms and financial behaviour were carried out in different country contexts, which perhaps have a different form of structures and perceptions in this regard. The contradicting results in this case could possibly be attributed to such aspects.

However, Kamukama, (2011) argued that findings which are opposing in nature should not be treated with surprise. This is because they note that even studies that are simulated should not be expected to provide the same results as the original studies. This study is one such kind. Accordingly, variations in such studies are expected and perhaps even add more insight while making a contribution to the body of knowledge, both practically and theoretically.

Despite the limitations and non-significant results, one clear conclusion that we derive from this study is that policy and financial services providers need to provide support through their outreach programmes. Such programmes should encourage people to deal with social pressures that could possibly deter them from using financial services but focus on those that empower them to utilise the financial system to improve their welfare.

6.2.2.4 Interaction of Personal capabilities (PC) and Societal capabilities (SC) and Financial Inclusion

In this study, the interaction between PC and SC was found to have a significant (β=.107, $p<.001$) association with financial inclusion thus contradicting and accordingly accepting ***H11:*** *There is a*

positive relationship between the interaction of PC and SC on financial inclusion among individuals in Uganda. PC was epitomised by individuals' financial attitude and financial literacy while SC by social networks and subjective norms towards formal saving, borrowing, insurance and remittance services among individuals in Uganda. The positive and significant impact of the interaction of PC and SC on financial inclusion rejects the presumed framework of interaction desirable in examining the determinants of financial inclusion from a demand side perspective representing the financial consumer.

While there is no extant empirical evidence in the financial inclusion literature on the effect of PC (financial attitude and financial literacy) and SC (social networks and subjective norms) as predictors of financial inclusion, the positive and significant findings provide a broader and more precise understanding of the intricate nature of individuals towards the access and use of formal savings, credit, insurance and remittance services. We can vividly conclude in this regard that the rapidly expanding and existing complexities in the formal financial system require a multi-dimensional approach of capabilities utilisation to enhance individuals' financial inclusion.

Additionally, the study findings uphold that PC and SC, when combined, are important in achieving financial inclusion. Therefore individuals and financial service providers ought to recognise the role this synergy plays in influencing the use of formal financial services. Similarly, financial service providers need to recognise and utilise this interactive influence and develop strategies to align their products and services with the identified capabilities in order to achieve financial inclusion among its actual and potential consumers.

6.2.2.5 Relationships between predictor variables and financial self-efficacy

One of the research questions of this study was to establish the relationships between personal capabilities societal capabilities and the interaction of PCSC and financial self-efficacy. The results established significant and positive ($p<.001$) relationships between personal capabilities (PC), financial attitude, financial literacy, societal capabilities (SC), social networks, subjective norms and financial self-efficacy respectively were significant, thus the support for the respective hypotheses**.**

Conversely, the results revealed a non-significant ($p=.238$) relationship between the interaction of PC, SC and financial self-efficacy. The result is an indication that a combination of personal and societal capabilities did not emerge as key synergy of capabilities toward financial inclusion. Therefore the study failed to find support for hypothesis ***H10*** that *there is a positive relationship between the interaction of PC and SC on financial self-efficacy*.

With regard to the above, a potentially important and new finding of this study is that personal capabilities, societal capabilities increased an individual's financial self-efficacy in terms of enhancing individuals' levels of confidence regarding the use of financial services. It cannot go without saying that support these hypotheses, including the PCSC, are scarce in literature. It is therefore difficult to provide comparisons and contradictions to validate the findings to that effect. These findings therefore add value to studies that intend to further assess financial self-efficacy among individuals as a determinant of specific behavioural outcomes.

6.2.3 Mediation effect of financial self-efficacy (FSE)

In this study, financial self-efficacy as a mediating variable represents an individual's level of confidence and ability to accomplish or cope with adversity relating to the use of financial services and consequently, financial inclusion. Extant theoretical literature assumes that relationships between behavioural aspects, for instance, individual capabilities and behavioural outcomes are perhaps sometimes intervened. Attesting to this assumption is Bennett (2000); Nkundabanyanga, Opiso, Balunywa, and Nkote (2015) who contended that when considering assessment of association between two variables, it is habitually advisable to consider the role of other variables.

Therefore it was valuable to consider and analyse the position of financial self-efficacy in the relationship between personal capabilities (PC) - financial attitude, financial literacy, societal capabilities (SC) - social networks, subjective norms and the interaction between PCSC and financial inclusion. First, it is important to note that the mediating effect of financial self-efficacy in the relationship between the predictor variables and financial inclusion satisfied the conditions of mediation provided by Baron and Kenny (1986). Additionally, following the assessment of significance of the direct and indirect effects on financial inclusion, confirmation of the mediation and hypotheses was used (Preacher & Hayes, 2004).

The results established that the mediating effect of financial self-efficacy in the relationships between personal capabilities (PC) ($p<.001$), financial literacy, societal capabilities (SC) ($p<.001$), social networks ($p<.001$), the interaction between PCSC ($p<.001$) and financial inclusion respectively, were significant, thus supporting the specified mediation hypotheses. This denotes that financial self-efficacy acts partially as a conduit in the association between an individual's

personal capabilities, financial literacy, societal capabilities, social networks, the interaction between PCSC and financial inclusion.

The findings in this study further indicate that the relationships between personal capabilities (PC) financial literacy, societal capabilities (SC), social network, the interaction between PCSC and financial inclusion is not solely a direct one. This however, does not mean that the importance of these capabilities should be ignored. Given that financial inclusion is associated with high levels of personal capabilities, financial literacy, societal capabilities, social networks, and the interaction between PCSC, efforts should be made to ensure that individuals also develop and sustain high levels of confidence to partake of financial services. In this regard, we note that financial self-efficacy is an important capability in propelling these capabilities towards achieving financial inclusion among individuals.

Whereas the study results provide relatively new empirical evidence in the financial inclusion literature, results are consistent with Zhao et al. (2005) who found that the effects of perceived learning and risk propensity on entrepreneurial intentions were mediated by self-efficacy. Similarly, Maciejewski et al. (2000); Wood et al. (1987); Hejazi et al. (2009) found that self-efficacy had a partial influential mediation effect on individuals' behaviour in the academic context.

Nonetheless, further support for these hypotheses is yet to be reviewed from prior empirical studies, specifically in the financial inclusion space, in order to provide further validity. This advocates in terms of academic, policy and financial practice, augmenting and creating avenues to develop such capabilities through individual focused studies and programmes. These studies

and programmes would further examine and enhance financial behaviour and inclusion respectively at individual level especially in a developing country context.

The mediating effect of financial self-efficacy in the relationships between financial attitude, subjective norms and financial inclusion

In the related case, this study established that the mediating effect of financial self-efficacy in the relationships between financial attitude (p=.549), subjective norms (p=.255) and financial inclusion respectively were not significant. The findings signify that the influence of financial self-efficacy as a mediator in the relationships between financial attitude, subjective norms with financial inclusion respectively, did not necessarily add value to the specified model thus failing to support the hypotheses.

Whereas the study results provide a relatively new empirical perspective in the financial behaviour and inclusion discourse, it should go without saying that the results oppose Zhao et al. (2005), who found that the effects of perceived learning and risk propensity on entrepreneurial intentions were mediated by self-efficacy. Similarly, Maciejewski et al. (2000); Wood et al. (1987); Hejazi et al. (2009) found that self-efficacy had an influential mediation effect on individuals' behaviour in the academic context.

The main conclusion drawn from the observations is that financial self-efficacy is not a mediating variable in the relationship between financial attitude, subjective norms and financial inclusion, respectively, among individuals. Therefore, the presence of financial self-efficacy in the specified conceptualised model is inconsequential in nature. This could have possibly been caused as a spillover of the original insignificant direct that were established even without a mediating

variable. This inference is consistent with Pearl (2014), who argued that in the event that a relationship between variables is judged to be insignificant, the hypothesis is not supported hence the need to provide an alternative explanation for such results.

In light of the above, the findings of this study bring new evidence in the financial behaviour, and specifically financial inclusion, literature. This is especially with regard to the rich combination of various personal and societal capabilities which add value by improving the theoretical and explanatory power of financial inclusion. The results are congruent and a true reflection of Sen's capability approach which frames the articulation of this study.

In this regard, the capabilities approach is a multi-dimensional understanding which focuses on the capabilities that people have that actually enable them to achieve outcomes which are particularly valuable to their lives such as being financially included (Hill, 2003; Iversen, 2003; Nussbaum & Sen, 1993; Robeyns, 2000, 2003; Sen, 1993). In line with the study findings, the capability approach postulates that an individual possesses a blend of interrelated capabilities that include interpersonal and socio-economic attributes which enable individual functionality that results from such combined capabilities (Sen, 1999; Sen, 1970). In addition, capabilities alone are deemed pointless if the user does not utilise them.

6.3 Chapter Summary and Conclusions

1. Individuals who represent the demand side are expected to play a major role in achieving financial inclusion. We note that studies on financial inclusion have given marginal consideration to the demand side factors specifically the personal and societal attributes that actually influence the use of financial services and that perpetually lead to voluntary

financial exclusion. Therefore by distinguishing the different capabilities using Sen's capability approach, this study provides a new model and dimension of thought towards explaining financial behaviour, and specifically financial inclusion, focusing on a demand side perspective that involves distinct urban and rural inhabitants in a developing country context.

2. At present, a detailed discussion on financial self-efficacy is almost non-existent considering the fact that in other fields, self-efficacy has been found to have mediating and moderating effects relating to individuals' attributes and behaviours respectively. This is true despite findings that have demonstrated that self-efficacy beliefs influence attainments by boosting one's effort and perseverance to achieve certain outcomes and tasks which are unlike other personality attributes or capabilities.
3. The results on the differences across the two regions provide evidence of the significant differences in financial inclusion as well as in the magnitude of capabilities they possess due to possibly the different political and socio-economic differences that define their specific environments. Nonetheless, it important to note that these personal and societal capabilities are still important in explaining financial inclusion irrespective of differences in personal and societal capabilities within any environment. This is what the study also intended to portray.
4. Positive and significant relationships were established between personal capabilities (PC) financial literacy, societal capabilities (SC) social networks, financial self-efficacy and financial inclusion. However, financial attitude and subjective norms were insignificant in their respective association with financial inclusion.

5. Financial self-efficacy partially mediates financial literacy, social networks, personal capabilities (PC) and societal capabilities (SC), PCSC and boosts their relationship with financial inclusion. On the other hand, financial self-efficacy does not mediate the relationships between financial attitude, subjective norms and financial inclusion.
6. Financial self-efficacy as a unique individual capability has been found to be a critical capability because it constitutes a significant portion of the explanatory power of financial inclusion and consequently formed a foundation of other capabilities to realise significant and substantial effects on financial inclusion.
7. These results provide new evidence in the financial inclusion literature with its rich independence and interaction of various personal and societal capabilities, hence increasing and improving the explanatory power of financial inclusion at individual level and from a demand side perspective. The results are congruent and a true reflection of Sen's capability approach which frames the articulation of this study.

CHAPTER SEVEN

CONCLUSION, IMPLICATIONS AND DIRECTIONS FOR FURTHER RESEARCH

This chapter presents the conclusions of the study based on the results and discussion in the previous chapters and in line with the study research questions and tested hypotheses. This study examined the extent to which an individual's personal and societal capabilities explained financial inclusion in Uganda. The chapter also provides theoretical, managerial and policy implications upon which various recommendations are drawn. The chapter ends by detailing the limitations of the study and suggesting areas for further research within this context.

7.1 Conclusion

Based on the findings, the study by and large provides empirical evidence regarding the behavioural determinants of financial inclusion in two regions in Uganda focusing on the demand side perspective. The evidence provides further support of existing theory and literature explaining financial inclusion. In this regard, the findings contribute towards a broader financial inclusion discourse, especially on the behavioural aspects of an individual financial consumer. This is assumed useful in supporting other studies as well as policy and financial institution decisions towards promoting more inclusive financial systems.

The main objective of the study was essentially to examine the extent to which personal and societal capabilities influenced financial inclusion among individuals in a developing country context like Uganda. The major focus was to fill the knowledge gap that has arisen because of a focus on explaining financial inclusion from a supply side perspective. This has, for a long time, led to an incomplete explanation of financial inclusion considering that users are an important

aspect in realising financial inclusion. The key question that the study addressed was whether the postulated capabilities; financial attitude, financial literacy, financial self-efficacy, social networks and subjective norms that individuals possessed actually influenced financial inclusion.

In the economics literature, financial inclusion has been identified as an important means to improve wellbeing across the globe. Several demand side factors have been identified and assessed in an effort to explain the concept from both the supply and demand side. This study has brought on board a relatively new and important perspective. In this different perspective, with the exception of financial attitude and subjective norms, whose association with financial inclusion was insignificant, all other capabilities had a significant and positive relationship with financial inclusion. Specifically, the integration of personal and societal capabilities into a model was successful in predicting financial inclusion from a demand side perspective in Uganda.

The first objective examined the differences in financial inclusion and the individual capabilities – financial attitude, financial literacy, social networks, subjective norms, personal capabilities and societal capabilities between individuals in Central and Northern Uganda. The findings provided lessons that contribute to the debate on distribution of financial services and need for more equitable financial deepening strategies across regions in Uganda. The results were indicative that the disadvantaged in the rural areas such as Northern Uganda were more likely to be deprived from benefiting from the formal financial system compared to those in the urban areas like Central Uganda where financial services predominate. In this regard, the results provide more evidence to support the Rural Financial Services Strategy (RFSS) through the Department of Microfinance towards supporting the establishment of savings and credit groups and supporting

linkages of such groups to the formal financial system in order to increase access to financial services among the rural poor who are inclined to informal options.

Regarding the insignificant results of the relationship between financial attitude, subjective norms and financial inclusion respectively, the results showed that these two predictors do not necessarily influence financial behaviour directly, but that the association depends on the context in which the relationship is assessed. The findings lead us to conclude that; firstly, when individuals' evaluative judgment regarding the use of formal financial services increases, such changes do not necessarily associate with financial inclusion. This implies that we cannot necessarily rely on financial attitude alone to introduce changes in access, usage and quality of financial services among individuals. Secondly, regarding subjective norms, individuals may observe the financial practices of those significant people and the values they uphold, regarding financial services without particularly complying with them. This implies that individuals' normative beliefs alone do not necessarily affect changes in access, use and quality of financial services.

The study investigated the contribution of financial literacy and social networks towards financial inclusion respectively. The findings regarding these objectives conclude as follows; **a)** financial literacy in terms of possession of financial skills and knowledge make a positive and significant contribution to changes in financial inclusion among individuals. We can comfortably conclude that financial literacy will enhance an individual's ability towards financial inclusion. **b)** Social relationships between individuals are an important source of various resources, specifically financial information which increases one's ability to overcome the perceived difficulties relating to access and use of formal financial services.

Additionally, consistent with the above conclusions, the interaction relationships depicted by significant interactive terms - personal capabilities (PC), societal capabilities (SC) and the combination of personal and societal capabilities (PCSC) were an important contribution to explaining financial inclusion. It is important to note that a change in PCSC, which was composed of all the capabilities, was related to an increase in the level of financial inclusion.

On examining the mediation effects of financial self-efficacy in the relationships between financial attitude, financial literacy, social networks, subjective norms, the interactive terms - personal capabilities (PC), societal capabilities (SC) and the combination of PCSC, the following conclusions were drawn; **a)** financial literacy, social networks, PC, SC and PCSC do not have a direct effect on financial inclusion. This implies that part of the effect is carried on to financial inclusion indirectly through financial self-efficacy. Nonetheless, the importance of financial literacy, social networks, PC, SC, PCSC should not be ignored because these factors also directly influence financial inclusion despite the presence of the indirect conduit effect; **b)** financial attitude and subjective norms had an insignificant impact on financial inclusion hence no mediation effect was realised in the relationship.

The study undoubtedly emphasised the power of the additive effect of financial self-efficacy, which boosts the level of confidence to undertake the financial tasks/decisions in the relationships between financial literacy, social networks, the interactive terms - personal capabilities (PC), societal capabilities (SC), PCSC and financial inclusion respectively. Additionally, we can conclude that the study supported and built on the capability approach (theory) propositions that a set of capabilities, properly utilised can enable individuals' realisation of

outcomes. In this study, a combination of a set of personal and societal capabilities was used to effectively explain financial inclusion as a desired outcome among individuals in Uganda.

7.2 Study Contributions and implications

7.2.1 Theoretical Implications

Theoretical implications are specifically drawn based on whether or not the findings of the study supported the doctrines of the theory and secondly, whether or not the findings filled the theoretical questions and identified gaps.

Sen's capability approach, which was used to frame and provide theoretical grounding for this study, postulates that a blend of interrelated capabilities that include socio-economic attributes enable individual functionality which results from their capabilities. In this regard, capabilities alone are deemed pointless if the user does not utilise them to realise an outcome. One of the key gaps in the capability approach/theory is the broad reference to a whole range of outcomes while focusing on just one element in a capability set (Biggeri & Ferrannini, 2014). This study therefore established that a combination of personal and societal capabilities is important in realising financial inclusion. This is because determining which capability is actually singularly important may be difficult to substantiate, given the diversity and spontaneity in the utilisation of an individual's capabilities in a given situation. A 'multi-capability' approach used in this study to articulate financial inclusion is an addition to the dialogue in the field of behavioural finance.

With reference to the interactive effects of the personal and societal capabilities on financial inclusion, the findings established that different combinations that are not yet existent in literature are viable to the enhancement of financial inclusion among individuals. This has

therefore addressed some contradictions and static perceptions that exist in the literature that have examined capabilities independently. Besides, those predictors that may appear insignificant or inconsequential towards financial inclusion, their influence can be felt when combined with other constructs or even mediated with others, say financial self-efficacy.

This study provides further theoretical contributions in terms of the mediation effects of financial self-efficacy in the relationship between financial literacy, social networks, the interactive terms - personal capabilities (PC), societal capabilities (SC) and financial inclusion respectively. The study has further established that financial self-efficacy which is a measure of confidence that an individual possesses in one's ability to use financial services is important and a true mediator in these relationships with financial inclusion among individual financial consumers in Uganda.

From the social cognitive theory perspective which posits a continuous reciprocal interaction between the behavioural aspects, environment and cognitive factors that influence the individual's accomplishment of an outcome, the study interactively explored the role of cognitive thinking, combined with societal capabilities in guiding individuals' motivation and financial behaviour. This provided an enriching evaluation of financial inclusion by interactively relating predictors demonstrated in the theory of planned behaviour, network theory and social learning theory tenets to explain the financial inclusion context. This study therefore extends each theory independently from the interactive approach it adopted. This is congruent with the argument that actually, the use of a multi-theory approach leverages and improves the gaps and weaknesses of one theory with the strengths of another related theory.

7.2.2 Methodological Implications

This combination of contributions made by this study is rare. Therefore in terms of methodological contribution and implications, the following are established:

This study addresses the lack of a harmonised measure that collects multi-dimensional information to define and explain financial inclusion, both from a supply and demand side perspective. To date, financial inclusion measurement has mainly been approached by the access and usage dimensions as the only indicators to formal financial services by using supply side aggregate data.

This study has been able to contribute towards developing a usable scale to measure financial inclusion and the predictor variables used - financial attitude, financial literacy, social networks and subjective norms, PC, SC, PCSC. Specifically, the significant interaction effects and mediation of financial self-efficacy is an additional contribution to the cocktail that this study has made towards the financial inclusion body of knowledge. This is because of the scarcity of literature and empirical evidence available. This is an indication and evident justification of the value that personal and societal capabilities actually have in driving financial inclusion among individuals across distinct locations and income segments.

Beside the above, the study approach recognises the multiple use of capabilities and these should inherently be adopted in more studies. This study indicates varying types of relationships between the variables, therefore further studies need to develop clear articulation of variables where they best explain a concept, either as an explicitly endogenous or exogenous variable.

Further still, this study assessed financial self-efficacy both as an endogenous and exogenous capability hence providing richer insights to the discourse.

The study confirmed that financial inclusion is multi-dimensional in nature comprising of access, usage and quality which carried close to equal total variance in explaining financial inclusion. This study therefore provides a true reflection of how financial inclusion is perceived and measured from a demand side perspective in the districts of Uganda, a developing country context. Previous predominantly panel data based studies have combined mainly supply side elements to evaluate financial inclusion and this has been complex in clearly establishing the variations of each dimension or factor. Chakravarty & Pal, (2012); Chakravarty & Pal, (2013); Sarma, (2008); Sarma & Pais, (2011) tried to modify the measures by assigning indices of equal weight to all dimensions to address the previous measurement weaknesses. However the assumption that all dimensions have an equal impact of financial inclusion is questionable. This study results therefore further suggest an improvement to the debate on the measurement of financial inclusion among individuals specifically within a developing country context.

The study developed a multi-theoretical measurement approach of financial inclusion which is important in summarising the complex nature of what the phenomenon is perceived to be. This will help in monitoring its evolution and evaluation. In the same regard, the study approach provides a better alternative in articulating financial inclusion by providing a basis for the development of valid measures from the assimilation of constructs and variables. These can be used as predictors of financial inclusion and consequently financial behaviour in various contexts.

The harmonisation of societal and psychological attributes provides a clear guide for the various stakeholders who are part of the effort towards better financial inclusion among individuals. This is especially true in the developing countries that are trying to address voluntary exclusion demonstrated from the demand side. In this regard, this study demonstrates evidence of how the theory of planned behaviour, network theory and social learning theory interactively provide an enriching explanation of financial inclusion using validated measures of the related constructs, hence supporting the theories while addressing their measurement and conceptual gaps.

This study methodology provides a wave of robust findings on financial inclusion which can be applicable in a developing country context focusing on the demand side perspective of financial inclusion. This is possible because a large survey across two distinct segments/regions-urban and rural individual financial consumers was used in Uganda. This study presented a true reflection of the composition of inhabitants across income segments and the rural/urban divided which is important in evaluating equitable financial inclusion.

7.3 Policy and Managerial Implications

Basing on the study findings and the theoretical and methodological implications drawn, the following policy and managerial implications/recommendations are pertinent to improving financial inclusion particularly in the formal financial system among individuals in Uganda.

7.3.1 Policy Implications

Promoting financial inclusion across the globe is a shared responsibility of both the government and the private sector. Using the capability approach helps to broaden the concepts of economics beyond demand and supply of products and services. It also opens the discussion to more

interdisciplinary co-operation which stimulates useful empirical work and policy initiatives regarding the drive towards a more inclusive financial system at the individual level.

BoU financial inclusion programmes include financial literacy programmes which could be rolled out through school curricula and community programmes to enhance financial confidence among consumers of all income segments and geographical locations. In additional there is the drive for financial innovation in order to address the specific quality dimension or needs of all segments across the country. Furthermore, the need to promote financial deepening while addressing access and quality issues is still lacking. In the same regard, there is an effort towards expanding financial services data and measurement which will provide more accurate information to guide the process of addressing the individual consumer needs towards achieving higher levels of financial inclusion in Uganda.

Secondly, the KPMG M4P approach supported by the Department of International Development (DFID) focuses on developing financial inclusion best practice guidelines in order to stimulate informed demand and supply of financial services, especially among the rural poor. The M4P approach to financial inclusion recognises the fact that all national financial markets, especially in East Africa, are unique. Therefore, the need for knowledge creation and market research to understand the unique needs, financial habits and individual capabilities that influence demand for financial services and financial behaviour of the low income segments that are predominantly financial excluded.

In this regard, policy makers need to design financial inclusion policies and adopt strategies geared through its dimensions - access, usage, and quality. Additionally, designing programmes

that stimulate individual capabilities for their effectiveness is crucial in advancing financial inclusion. It is important to ensure awareness of the behavioural challenges that propel voluntary financial exclusion when proposing initiatives towards promoting a more inclusive financial system.

Following the significant differences in financial inclusion between the Central region which is predominantly urban and Northern region, predominantly composed of the rural poor, there is a need to improve elements that enable accessibility to support expansion of financial services.

Policy frameworks need to support the establishment of financial service centres in the rural areas which still suffer deprivation in order to enhance equitable regional distribution of banking services. The findings indicate the potential of adoption and use of formal financial services given the significant results in the capabilities towards financial inclusion if well stimulated.

There is a need to provide a planning policy framework that recognises individuals' valuable capabilities across income segments, using the rural urban divide as a guide. The framework should capture the dynamic nature of people's capabilities and the changing interactions with their environment and available resources which can consequently support effective development interventions.

Policy programmes therefore need to boost financial literacy among individuals in order to improve financial knowledge and skills in order to realise consequent economic and social welfare. It is therefore important for policy to establish which programmes and financial decision-making structures are most effective, given the diverse features of people in the rural-urban divide. The impact of financial literacy can be enhanced through well designed and targeted

interventions which are easy to comprehend and focused on the importance of the specific financial services.

This study shows that to achieve a variety of welfare improvements from FI both personal and societal capabilities (PCSC) are necessary in the process of innovating and thinking critically about the programmes and strategies to implement. Following the significant influence of PCSC in advancing FI, government and private sector firms need to develop policies and programmes that enhance financial knowledge and skills which to improve how people evaluate the benefits of formal financial services. The impact of such programmes can be enhanced by using the strength of existing social relations and values to build trust and easily creating familiarity with formal financial services especially in the rural communities.

7.3.2 Managerial Implications

Significant differences still exist in terms of financial inclusion in the Northern and Central regions of Uganda which is a clear reflection of the regional inequality aspect to financial inclusion. Financial providers within the formal financial system have mainly focused on broadening financial services through increased branch networks and electronic banking interventions. Additionally, financial institutions especially the MFIs have identified linkages with informal saving groups, for instance village savings and loan associations (VSLAs) and Self-help groups (SHGs), and social protection as an avenue towards financial inclusion. This approach is helpful in the transition of informal groups within the formal financial system which eventually enhances the confidence of even the poor rural inhabitants to benefit from the formal financial system.

One of the major obstacles to financial inclusion is the limited demand side information, especially on the needs of the poor people in the rural locations. This is specifically regarding their needs, preferences, behaviours and the activities they are involved in for sustainability. This study provides extant information to advance the need for financial services data and research to guide managerial interventions.

Financial institutions cannot understand how to best to serve these income segments despite the potential they may possess, if relevant information not known. Financial institutions need to have a deeper understanding of individuals, particularly among the poor in the rural locations, in order to ensure more relevant and effective service delivery. This can be done by investing in research and development activities to establish more demand side information as a strategy towards customer centricity.

The study established the importance of financial literacy as an attribute of personal capabilities towards financial inclusion. This implies that financial institutions need to continuously design financial literacy programmes among the distinct income segments and locations. However, to ensure effectiveness of the programmes, the information delivered to the people should be easy to comprehend and, of course, directly related to their own lives and thinking.

In this study, the importance of social networks as an attribute of societal capabilities towards financial inclusion was established. In this regard, financial institutions need to consider indulging in group based solutions, especially in the rural areas while people capitalise on the power of social networks that such segments possess and value. This will enable members to establish

more secure savings, access to business credit, and increased loan size with better ability to pay, lower transaction costs, hence becoming more bankable within the formal financial system.

Additionally, financial institutions need to integrate the informal and formal financial markets because the volume of informal activity and use of informal financial services in rural locations is far greater than that of formal financial institutions. Perhaps this integration can inherently improve the involvement of the excluded poor rural individuals. This will enable and initiate the upscaling of access to financial services thereby improving the quality of life and economic development at large.

This study provided an indication that many individuals both in rural and urban locations of Uganda were either not aware or confident enough about the use and benefits of insurance services. Therefore it is important for insurance companies to build awareness and client confidence to educate the current and potential insurance service users on the need, benefits and assurance of security of such services in an effort to achieve a holistic level of FI.

Telecommunication companies are at the forefront of providing non-bank remittance and payments services in Uganda. Therefore, financial services providers need to make access to financial services more convenient especially in remote locations. Further, to ensure active use of these financial services, effective communication and training geared towards creating awareness and sensitizing all players within diverse income levels and locations is necessary.

Finally, this study established the significant role of the synergy that PC and SC independently and interactively play in achieving financial inclusion. This is an indication that financial institutions, in an effort to create, increase and improve information flow and implementation of

financial services, need not only focus on nurturing specific individual attributes, like enhancing of financial skills and knowledge, or the interactions people possess through social networks. Institutions need to focus on both personal and societal capabilities collectively in order to realise a more effective outcome towards the use of financial services among distinct individuals.

7.4 Study Limitations

One of the limitations experienced is the unique nature of this study. There is limited literature available specifically in the developing country context which limited the ability to compare the findings of this study to a certain extent. It was therefore important to borrow theories and empirical evidence from other disciplines to address the gap. This leaves the research with limited access to both local and developing country sources which was also certainly supposed to be the foundation of this study.

Given that the study was conducted in two regions of one country, it would require this study to be replicated in other countries and other parts of Uganda as well, because it has provided a valid foundation for further empirical research.

The study adopted a cross sectional design which provides a snapshot at a particular time period. In reality, individuals' perceptions and behaviours change over time and environment which may necessitate investigation over a period of time in order to attain a better understanding and a true reflection of the influence of the capabilities on financial inclusion and financial behaviour generally. This would perhaps improve if a longitudinal study or randomised control trials (RCTs) were undertaken over a long term.

The study was mainly assessed using both potential and actual consumers of financial services collectively. However, if separately assessed, possibly there would be a variation in perceptions or behavioural responses towards financial inclusion. Therefore influences advanced within the hypothesised model should be interpreted cautiously, depending on the reference group.

7.5 Directions for future research

The implications and limitations revealed by the study findings on financial inclusion in Uganda from a demand side perspective prompts the presentation of potential directions for further research as presented below;

Future research should also explore the use of qualitative designs to assess the influence of personal and societal capabilities on financial inclusion and behaviour respectively.

Additionally, further research could consider examining financial self-efficacy as a moderator of the relationship of personal and societal capabilities with financial inclusion.

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Appendices

APPENDIX 1: MAIN SURVEY QUESTIONNAIRE

University of the Witwatersrand
Wits Business School
Faculty of Management
Survey Questionnaire

Section A: Background Information

For each of the following questions, please ***tick/fill in*** what applies to you.

Section 1: Bio Data

1.0 Background Information
A1. How old are you? …….. (Years)
A2. Gender 1. ( ) Male 2. ( ) Female
A3. Which of these best describes the community you live in? 1. ( ) Rural 2. ( ) Urban
A4. What is your marital status?
1 ( ) Single
2 ( ) Married
3 ( ) Cohabiting
4 ( ) Divorced or separated
5 ( ) Widowed
A5. Please indicate your highest level of formal education completed.
1 ( ) Did not attend School
2 ( ) Primary education
3 ( ) O-level
4 ( ) A-Level
5. ( ) Vocational training without formal education
6. ( ) Vocational training after primary school
7 ( ) Vocational training after secondary school
8 ( ) Diploma
9 ( ) Bachelor's Degree
10 ( ) Master's Degree or higher
A6. How many people live in your household? …….. people
A7. How many people depend on you? …… dependents
A8.Are you currently involved in any income generating activity?
If yes specify……..
A9. Do you have a job? 1. ( ) Yes 2. ( ) No
A10. What is the level of your monthly income?
1 ( ) Less than shs.50, 000
2 ( ) Shs.50,000 – shs. 500,000
3 ( ) Shs. 550,000 – shs.1,050,000

4 ( ) Shs. 1,050,000 – shs. 1,550,000
5. ( ) Shs. 1,550,000 – shs. 2,050,000
6. ( ) Shs. 2,050,000 – shs. 2,500,000
7. ( ) Shs. 2,500,000 and above

A11. Which group of people do you think your family belongs to?

1. ( ) We hardly make ends meet. We do not have enough money even for food.
2. ( ) We have enough money to buy food but buying clothes causes financial difficulties
3. ( ) We have enough money to buy food and clothes. But purchase of durables is quite difficult
4. ( ) We have no trouble buying durable goods, but purchase of a really expensive things like a car is hard
5. ( ) We can afford quite expensive things without any difficulty
6. ( ) I find it difficult to answer this question

A12. Please indicate where you get money to finance your income generating activities

1 ( ) Commercial bank
2 ( ) Savings and Credit Associations (SACCOs)
3 ( ) Money lenders
4 ( ) Profits
5 ( ) Friends
6 ( ) Other ……

A13. Which of the following financial services have you used?

1 ( ) Savings
2 ( ) Loans
3. ( ) Insurance
4. ( ) Remittances
5. ( ) Others ……

A14. Which of the following financial institutions have you visited?

1 ( ) Commercial bank
2 ( ) Microfinance institutions
3 ( ) Insurance company
4 ( ) SACCO
5 ( ) Other……

A15. Why do/did you visit the financial institution in A14?

1 ( ) To deposit money
2 ( ) To withdraw money
3 ( ) To borrow money
4 ( ) To send money
5 ( ) To receive money
6 ( ) To buy an insurance policy
7 ( ) Other ……

Section 2

Using the scales below, please indicate one criterion most appropriate to you.

Code	Statement							
ACC		**Strongly disagree**	**Disagree**	**Somewhat disagree**	**No idea**	**Somewhat agree**	**Agree**	**Strongly agree**
ACC 1	There is an usable access road leading to the nearest formal financial institution	1	2	3	4	5	6	7
ACC 2	The nearest bank is less than 5km from in my home	1	2	3	4	5	6	7
ACC 3	I live within less than 1km of an ATM that I can easily visit to access my account	1	2	3	4	5	6	7
ACC 4	There are a number of banking agent services that I can easily visit near my home	1	2	3	4	5	6	7
ACC 5	There are insurance operators near my home that I can easily visit	1	2	3	4	5	6	7
ACC 6	I live within 5km of a place where I can pay my bills	1	2	3	4	5	6	
ACC 7	There is a place near my home where I can easily send and receive money	1	2	3	4	5	6	7
ACC 8	I have the money required to run a savings account	1	2	3	4	5	6	7
ACC 9	I have enough money to purchase insurance services	1	2	3	4	5	6	7
ACC 10	The cost of borrowing money from formal institutions affordable	1	2	3	4	5	6	7
USA	*Using a bank, Micro deposit taking Institutions (MDIs), post office services; In the past 12 months;*	**Strongly disagree**	**Disagree**	**Somewhat disagree**	**No idea**	**Somewhat agree**	**Agree**	**Strongly Agree**
USA 1	**I AM AWARE OF THE FORMAL PRODUCTS AND SERVICES (SAVINGS, LOANS, INSURANCE AND PAYMENTS/REMITTANCES)**	1	2	3	4	5	6	7
USA 2	**I HAVE USED MY SAVINGS ACCOUNT TO SAVE FOR FUTURE EXPENSES**	1	2	3	4	5	6	7
USA 3	I have used my savings account to save for any emergencies				4	5	6	7
USA 4	I have received a loan from a bank to finance personal needs	1	2	3	4	5	6	7

USA 5	I have received a loan from a bank for my business	1	2	3	4	5	6	7
USA 6	I have used insurance services for health cover	1	2	3	4	5	6	7
USA 7	I have used insurance services for other in forms of coverage	1	2	3	4	5	6	7
USA 8	I have used my bank account to receive my salary	1	2	3	4	5	6	7
USA 9	I have used the bank account to receive remittances(money)	1	2	3	4	5	6	7
USA 10	I have used my bank to transfer money	1	2	3	4	5	6	7
USA 11	I have used mobile money services to pay bills	1	2	3	4	5	6	7
USA 12	I have used mobile money services to send money	1	2	3	4	5	6	7
USA 13	I have used mobile money services to receive money	1	2	3	4	5	6	7
QUAL		**Strongly disagree**	**Disagree**	**Somewhat disagree**	**No idea**	**Somewhat agree**	**Agree**	**Strongly Agree**
QUAL 1	I know which documents are required to open a bank account	1	2	3	4	5	6	7
QUAL 2	I have the necessary documents required to open an account	1	2	3	4	5	6	7
QUAL 3	I am assured of getting customer support on the use of the financial services	1	2	3	4	5	6	7
QUAL 4	When I experience a problem with my transactions, I get quick help	1	2	3	4	5	6	7
QUAL 5	I find the staff in the formal financial institutions friendly and helpful	1	2	3	4	5	6	7
QUAL 6	When I have an unpleasant experience with the services, the bank staff solve the issue immediately	1	2	3	4	5	6	7
QUAL 7	Imposing service charges is fair to bank customers (withdrawal fees, payments fees)	1	2	3	4	5	6	7
QUAL 8	I am certain of the safety of my transactions when using formal services	1	2	3	4	5	6	7

QUAL 9	I am sure of the confidentiality of my account transactions	1	2	3	4	5	6	7
QUAL 10	I am able to utilise a variety of financial services offered	1	2	3	4	5	6	7
QUAL 11	I feel that it is more reputable to associate with formal financial institutions	1	2	3	4	5	6	7
QUAL 12	There is available banking infrastructure e.g ATMs in my area	1	2	3	4	5	6	7
QUAL 13	The modern equipment and décor make formal financial services more attractive	1	2	3	4	5	6	7
QUAL 14	I receive prompt information regarding my transactions	1	2	3	4	5	6	7
QUAL 15	I am able to carry out my transactions because the banking hours are convenient	1	2	3	4	5	6	7
QUAL 16	The formal financial institutions have modern equipment that make transactions easy	1	2	3	4	5	6	7

Section 3

Code	**Statement**							
FSE		**Not at all true**	**Somewhat untrue**	**No idea**	**Hardly true**	**Moderately true**	**True**	**Exactly True**
FSE 1	I am confident that I can manage my finances	1	2	3	4	5	6	7
FSE 2	I have the drive to borrow money from the bank to finance my income generating activities	1	2	3	4	5	6	7
FSE 3	I am confident that I can comfortably deal with a financial problem	1	2	3	4	5	6	7
FSE 4	I can draw a budget for my spending and savings each month	1	2	3	4	5	6	7
FSE 5	I can easily spend less that my income each month	1	2	3	4	5	6	7
FSE 6	I can easily save part of my income each month	1	2	3	4	5	6	7

FSE 7	It is easy for me to stick to my savings plan against my income	1	2	3	4	5	6	7
FSE 8	I can confidently deposit money in the bank to plan for the future	1	2	3	4	5	6	7
FSE 9	I can use insurance facilities for unexpected events	1	2	3	4	5	6	7
FSE10	I have the ability to borrow money from the bank	1	2	3	4	5	6	7
FSE11	I have what it takes to use financial services to manage my financial goals	1	2	3	4	5	6	7
FSE12	I can easily send and receive money through the formal institutions and services	1	2	3	4	5	6	7
FSE13	I ensure that I pay back money that I have borrowed in time	1	2	3	4	5	6	7
		Strongly Agree	**Agree**	**Somewhat Agree**	**No idea**	**Somewhat Disagree**	**Disagree**	**Strongly disagree**
FATT 1	I consider using formal financial services (savings, loans, insurance, remittances) useful	1	2	3	4	5	6	7
FATT 2	I think changing from informal sources of credit to formal is a wise idea	1	2	3	4	5	6	7
FATT 3	I believe using insurance services is important to protect me against loss of assets	1	2	3	4	5	6	7
FATT 4	In my view service charges of formal services are cheaper than informal services	1	2	3	4	5	6	7
FATT 5	In my opinion, I can earn interest on my savings with formal institutions	1	2	3	4	5	6	7
FATT 6	I find it convenient to use the remittance services to send and receive money	1	2	3	4	5	6	7

FATT 7	I think that using formal financial services is safe for financial transactions	1	2	3	4	5	6	7
FATT 8	It is wise to borrow money from formal financial services	1	2	3	4	5	6	7
FATT 9	I believe that it is faster to get a consumption loan from a bank	1	2	3	4	5	6	7
FATT 10	I feel it is easy to get a business development loan from SACCOs	1	2	3	4	5	6	7
Code	**Statement** *How much do you know about the following financial terms?*							
FLa	**Knowledge/Awareness**	**Nothing at all**	**Very little**	**Little**	**Fair knowledge**	**Good knowledge**	**Very much**	**A great deal**
FL 1a	Savings	1	2	3	4	5	6	7
FL 2a	Loans	1	2	3	4	5	6	7
FL 3a	Insurance	1	2	3	4	5	6	7
FL 4a	Remittances (money transfer services)	1	2	3	4	5	6	7
FL 5a	Interest rates	1	2	3	4	5	6	7
FL 6a	Credit terms	1	2	3	4	5	6	7
FL 7a	Inflation	1	2	3	4	5	6	7
FL b	**Application**	**Strongly Agree**	**Agree**	**Somewhat Agree**	**No idea**	**Somewhat Disagree**	**Disagree**	**Strongly Disagree**
FL 1b	I know how to calculate the cost of loans from a bank	1	2	3	4	5	6	7
FL 2b	When I put money into a savings account I expect to get more money	1	2	3	4	5	6	7
FL 3b	When I borrow money from a bank, I will pay more interest than the original amount	1	2	3	4	5	6	7
FL 4b	When I apply for an insurance policy, I expect to be compensated depending on my monthly payments to the insurance company	1	2	3	4	5	6	7
FL 5b	When I use the bank remittances services I can	1	2	3	4	5	6	7

	get an immediate transfer of money from one point to another at a fee							
FL 6b	When I see information about a loan, I can calculate the total amount I would need to pay	1	2	3	4	5	6	7
FL 7b	High inflation means that the cost of living is increasing rapidly	1	2	3	4	5	6	7

Section 4

*From time to time, you discuss important **financial matters** with other people. Looking back over the last six months – describe (e.g. husband, aunt) the people you have discussed financial matters with, your relationship with them and the kind of support you get from them**.** Please indicate the extent to which you agree or disagree with the*

SNa	*1st Person*	*2nd person*	*3rd person*	*4th person*	*5th person*
SN1a What is your relationship with the person?	1 ( ) Family 2 ( ) Friend 3 ( ) Close friend 4 ( ) Co-worker 5 ( ) Co-member 6 ( ) Financial institution advisor	1 ( ) Family 2 ( ) Friend 3 ( ) Close friend 4 ( ) Co-worker 5 ( ) Co-member 6 ( ) Financial institution advisor	1 ( ) Family 2 ( ) Friend 3 ( ) Close friend 4 ( ) Co-worker 5 ( ) Co-member 6 ( ) Financial institution advisor	1 ( ) Family 2 ( ) Friend 3 ( ) Close friend 4 ( ) Co-worker 5 ( ) Co-member 6 ( ) Financial institution advisor	1 ( ) Family 2 ( ) Friend 3 ( ) Close friend 4 ( ) Co-worker 5 ( ) Co-member 6 ( ) Financial institution advisor
SN2a How often do you speak with the person?	1 ( ) Daily 2 ( ) Weekly 3 ( ) Monthly 4 ( ) Whenever necessary 5 ( ) Always	1 ( ) Daily 2 ( ) Weekly 3 ( ) Monthly 4 ( ) Whenever necessary 5 ( ) Always	1 ( ) Daily 2 ( ) Weekly 3 ( ) Monthly 4 ( ) Whenever necessary 5 ( ) Always	1 ( ) Daily 2 ( ) Weekly 3 ( ) Monthly 4 ( ) Whenever necessary 5 ( ) Always	1 ( ) Daily 2 ( ) Weekly 3 ( ) Monthly 4 ( ) Whenever necessary 5 ( ) Always
SN4a What kind of financial support do you get from them?	1 ( ) Savings advice 2 ( ) Loan payment advice 3 ( ) Interest advice 4 ( ) Insurance policy matters 5 ( ) Money transfer advice	1 ( ) Savings advice 2 ( ) Loan payment advice 3 ( ) Interest advice 4 ( ) Insurance policy matters 5 ( ) Money transfer advice	1 ( ) Savings advice 2 ( ) Loan payment advice 3 ( ) Interest advice 4 ( ) Insurance policy matters 5 ( ) Money transfer advice	1 ( ) Savings advice 2 ( ) Loan payment advice 3 ( ) Interest advice 4 ( ) Insurance policy matters 5 ( ) Money transfer advice	1 ( ) Savings advice 2 ( ) Loan payment advice 3 ( ) Interest advice 4 ( ) Insurance policy matters 5 ( ) Money transfer advice

following evaluation criteria by ticking the most appropriate scale. (These include your relations, friends, saving groups or community members indicated above.)

CODE	**STATEMENT**							
SN b		**Not at all true**	**Somewhat untrue**	**No idea**	**Hardly true**	**Moderately true**	**True**	**Exactly True**
SN1b	Social networks are the most important source of financial information	1	2	3	4	5	6	7
SN2b	Social networks have enabled me find out where financial institutions are located	1	2	3	4	5	6	7
SN3b	People in my networks have urged me to set my financial goals	1	2	3	4	5	6	7
SN4b	I use the opportunities within my networks to attain my financial goals	1	2	3	4	5	6	7
SN5b	I rely of others in my networks to make financial decisions	1	2	3	4	5	6	7
SN6b	Social networks are important in obtaining a loan from a financial institution (referee/guarantor)	1	2	3	4	5	6	7
SN7b	Social networks act as guarantees for borrowing	1	2	3	4	5	6	7
SN8b	Social networks are an important source of credit	1	2	3	4	5	6	7
SN9b	The benefits of social networks depends on their size and composition	1	2	3	4	5	6	7
SN10b	I am recognized by a financial institution because of the social network I belong to	1	2	3	4	5	6	7
SN11b	I use opportunities within quickly in order to attain my financial goals	1	2	3	4	5	6	7
SN12b	I get involved in activities within my	1	2	3	4	5	6	7

	networks that improve my financial wellbeing							
Code	**Statement**							
SUBNOR		**Strongly disagree**	**Disagree**	**Somewhat disagree**	**No idea**	**Somewhat agree**	**Agree**	**Strongly agree**
SUBNOR 1	The people who influence my decisions expect me to save my money in the bank	1	2	3	4	5	6	7
SUBNOR 2	Most people who are important to me believe that saving in a bank is safe	1	2	3	4	5	6	7
SUBNOR 3	The people important to me would support sending and receiving money through bank remittance services	1	2	3	4	5	6	7
SUBNOR 4	The people in my life whose opinions I value would approve of my decisions to reach out to formal financial institutions for my financial needs	1	2	3	4	5	6	7
SUBNOR 5	The people who are important to me would expect me to use bank credit to finance my income generating activities	1	2	3	4	5	6	7
SUBNOR 6	People whose opinions I value would approve of the usefulness of insurance services	1	2	3	4	5	6	7
SUBNOR 7	The people important to me believe I can afford formal financial services	1	2	3	4	5	6	7
SUBNOR 8	The people important to me think that formal financial services are cheaper to use	1	2	3	4	5	6	7

Thank you for your contribution, time and co-operation.

APPENDIX 2: POVERTY INCIDENCE STATISTICS (2009/10) BY RURAL/URBAN LOCATIONS AND REGION

Residence 2009/10	Population Share	Mean CPAE	Poverty Estimates			Contributes to:		
Rural/Urban			P0	P1	P2	P0	P1	P2
Rural	85.0	52,467	27.2	7.6	3.1	94.0	95.9	96.8
Urban	15.0	119,552	9.1	1.8	0.6	5.6	4.1	3.2
Region								
Central	26.5	100,441	10.7	2.4	0.8	12.0	9.5	7.7
Eastern	29.6	49,697	24.3	5.8	2.1	29.0	25.2	22.0
Northern	20.0	38,988	46.2	15.5	7.3	38.0	46.0	52.7
Western	24.0	56,232	21.8	5.4	2.0	21.0	19.3	17.7

UBOS, 2013 Statistical Abstract[2]

APPENDIX 3A: FINANCIAL ACCESS STATISTICS, 2009 AND 2013

Region	2013 (%)	2009 (%)
Formal	20	21
Non-bank formal (Mobile money)	34	7
Informal	31	42
Excluded	30	15

APPENDIX 3B: USE OF FINANCIAL SERVICES (MUTUALLY EXCLUSIVE) BY ADULT POPULATION IN 2013 %

Region	Formal Bank	Non-Bank Formal	Informal	Excluded
Kampala	48.8	39.8	3.2	3.2
Central	20.7	46.8	15.4	17.2
Eastern	11.9	33.3	40.0	14.8
Northern	14.6	19.1	42.6	23.7
Western	27.7	32.6	31.4	8.4

Finscope Uganda Survey, 2013

APPENDIX 3C: BY URBAN/RURAL DIVIDE %

Year		Formal	Non-bank	Informal	Excluded
2013	Urban	36	40	14	10
	Rural	17	32	35	17
2009	Urban	39	9	25	28
	Rural	16	6	47	31

Finscope Uganda Survey, 2013

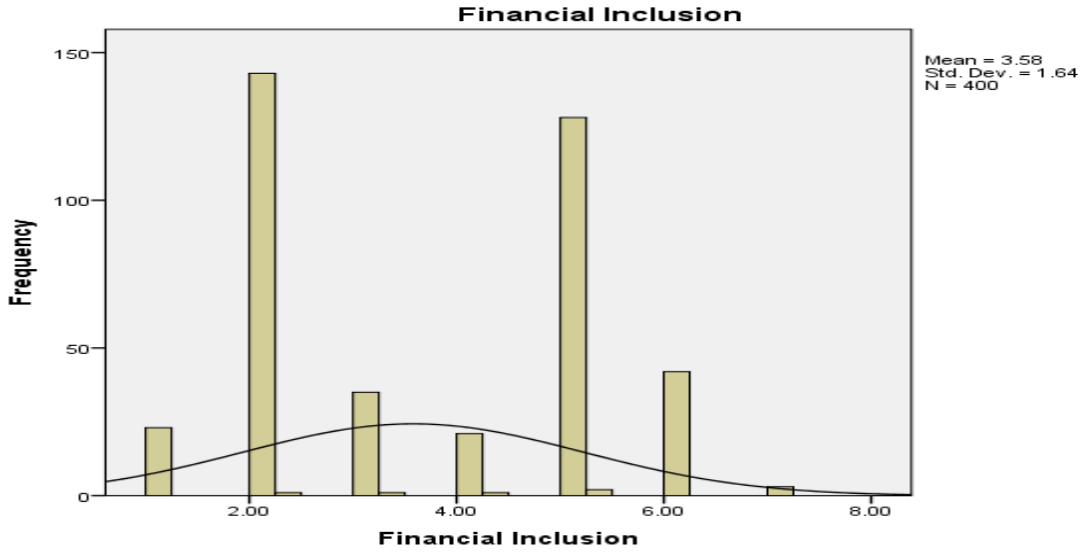
[2] P0- head count index; P1-poverty gap; P2-squared poverty gap; CPAE-consumption per adult

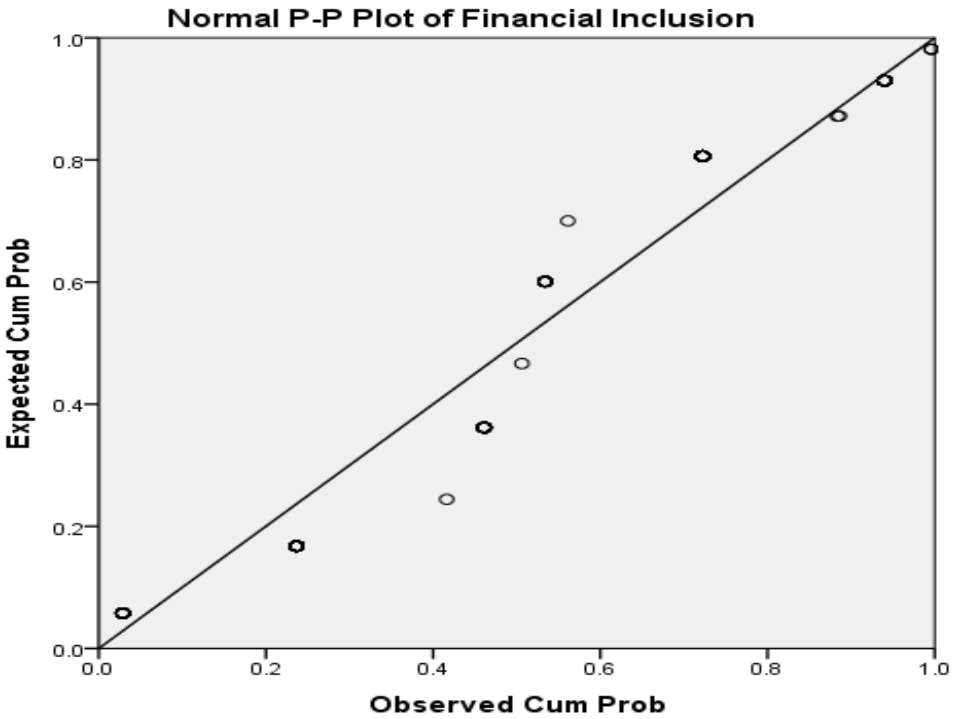
APPENDIX 4: SAMPLE SIZE AND DISTRIBUTION

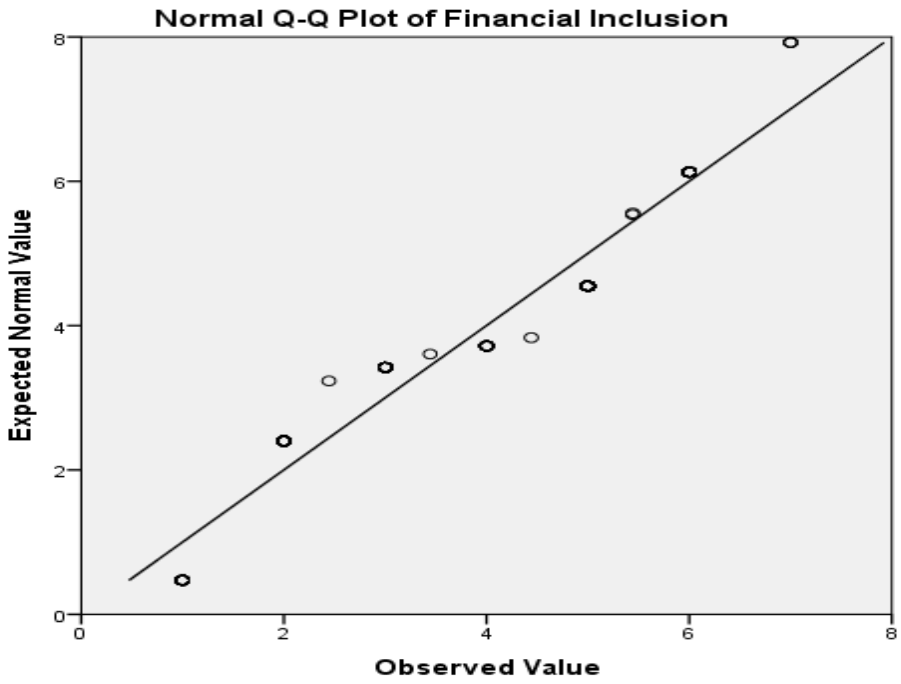
Region	District	County	Sub- county	Target adult (≥18) Population
	Kampala	Kampala Capital City	Central division	79,789
			Kawempe division	338,312
Central			Lubaga division	384,386
			Makindye division	395,276
	Mukono	Mukono	Nakisunga	12,076
			Nama	13,865
			Ntenjeru	10,185
			Kyampisi	10,486
	Maracha	Maracha	Oluvu	6,458
Northern			Yivu	4,861
			Olufee	4,783
			Oleba	5,768
	Kaabong	Dodoth	Loleila	1,399
			Lodiko	1,294
			Kalapata	4,152
			Kaabong West	2,353
Total				**1,275,443**
Target Sample				**400**

APPENDIX 5: ASSUMPTIONS OF DIAGONISTIC TESTS

Appendix 5a: Tests for Normality







Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Financial Inclusion	400	1.00	7.00	3.5805	1.64042	.073	.122	-1.508	.243
Financial Self-efficacy	400	1.00	7.00	4.3075	1.49450	-.337	.122	-.949	.243
Financial Literacy	400	1.00	7.00	2.9800	1.61900	.314	.122	-1.176	.243
Social Networks	400	2.00	5.00	3.1917	.67463	-.213	.122	-.730	.243
Subjective Norms	400	1.00	7.00	4.7075	1.35148	-.485	.122	-.334	.243
Financial Attitude	400	1.00	7.00	4.9550	1.10046	-.625	.122	.472	.243
Valid N (listwise)	400								

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Financial Inclusion	.247	400	.000	.853	400	.000
Financial Self-efficacy	.169	400	.000	.908	400	.000
Financial Attitude	.214	400	.000	.877	400	.000
Financial Literacy	.256	400	.000	.825	400	.000
Social Networks	.267	400	.000	.807	400	.000
Subjective Norms	.186	400	.000	.922	400	.000

a. Lilliefors Significance Correction

Appendix 5b: Tests for Homogeneity of Variance

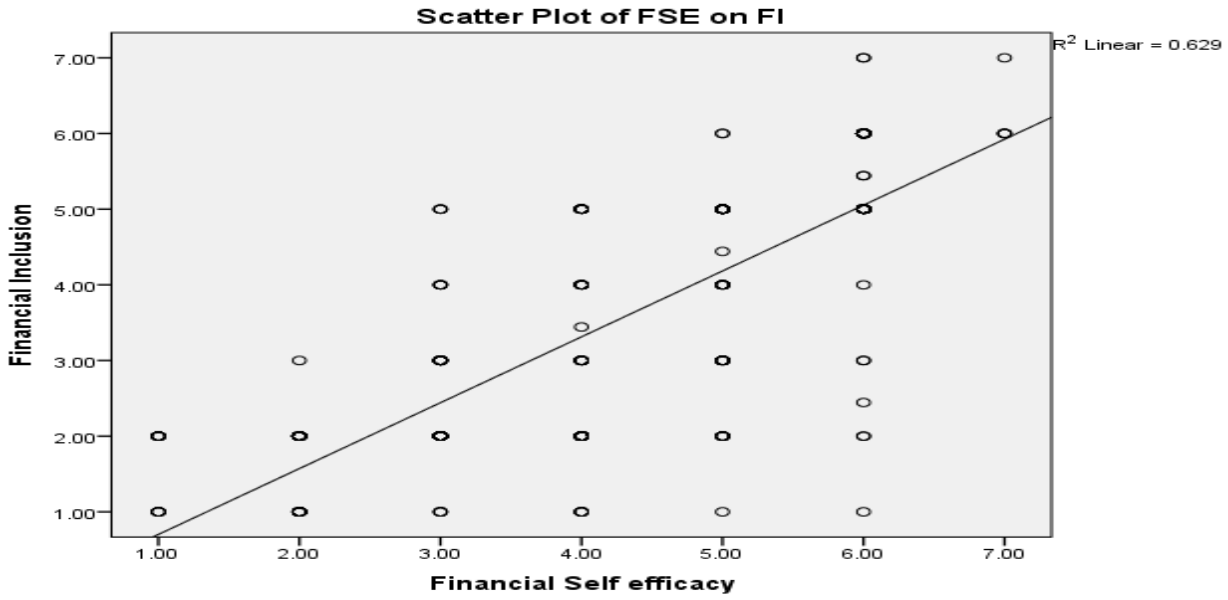
Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Financial Inclusion	Based on Mean	2.729	1	398	.099
	Based on Median	3.039	1	398	.082
	Based on Median and with adjusted df	3.039	1	391.756	.082
	Based on trimmed mean	5.036	1	398	.025
Financial Literacy	Based on Mean	31.777	1	398	.000
	Based on Median	20.362	1	398	.000
	Based on Median and with adjusted df	20.362	1	360.033	.000
	Based on trimmed mean	31.640	1	398	.000
Financial self-efficacy	Based on Mean	8.412	1	398	.004
	Based on Median	5.874	1	398	.016
	Based on Median and with adjusted df	5.874	1	391.188	.016
	Based on trimmed mean	8.822	1	398	.003
Financial attitude	Based on Mean	6.891	1	398	.009
	Based on Median	4.710	1	398	.031
	Based on Median and with adjusted df	4.710	1	389.434	.031
	Based on trimmed mean	8.713	1	398	.003
Social networks	Based on Mean	.004	1	398	.951

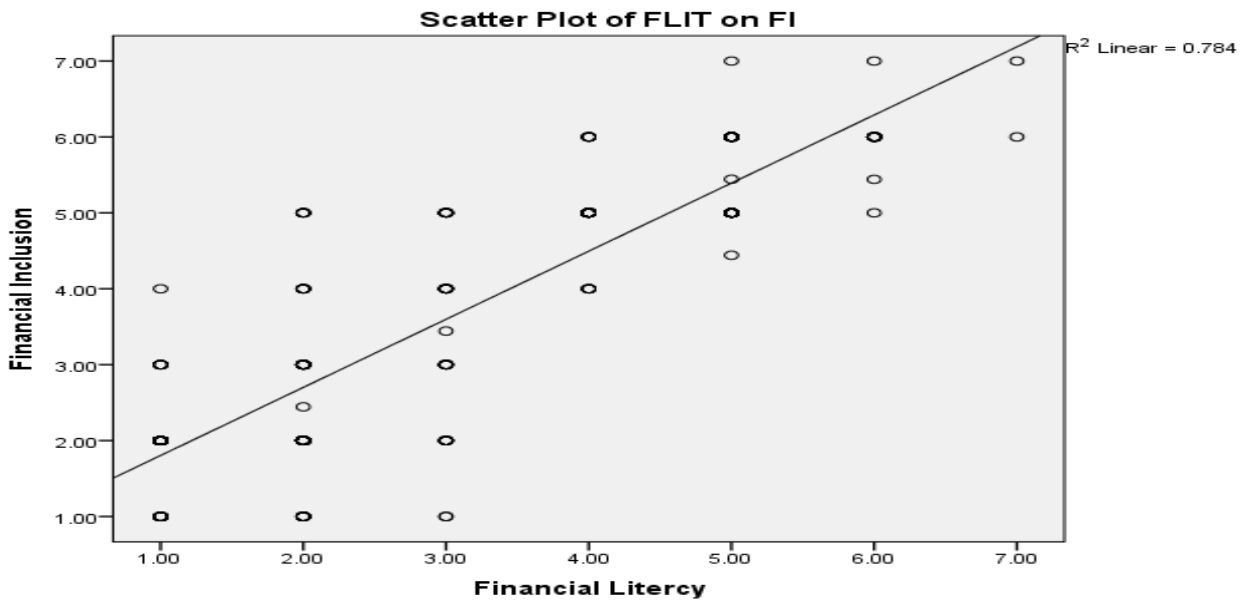
Subjective norms	Based on Median	.398	1	398	.528
	Based on Median and with adjusted df	.398	1	397.974	.528
	Based on trimmed mean	.049	1	398	.825
	Based on Mean	16.232	1	398	.000
	Based on Median	14.357	1	398	.000
	Based on Median and with adjusted df	14.357	1	391.912	.000
	Based on trimmed mean	16.979	1	398	.000

Appendix 5c: Test for Linearity Using Scatter plots ad ANOVA

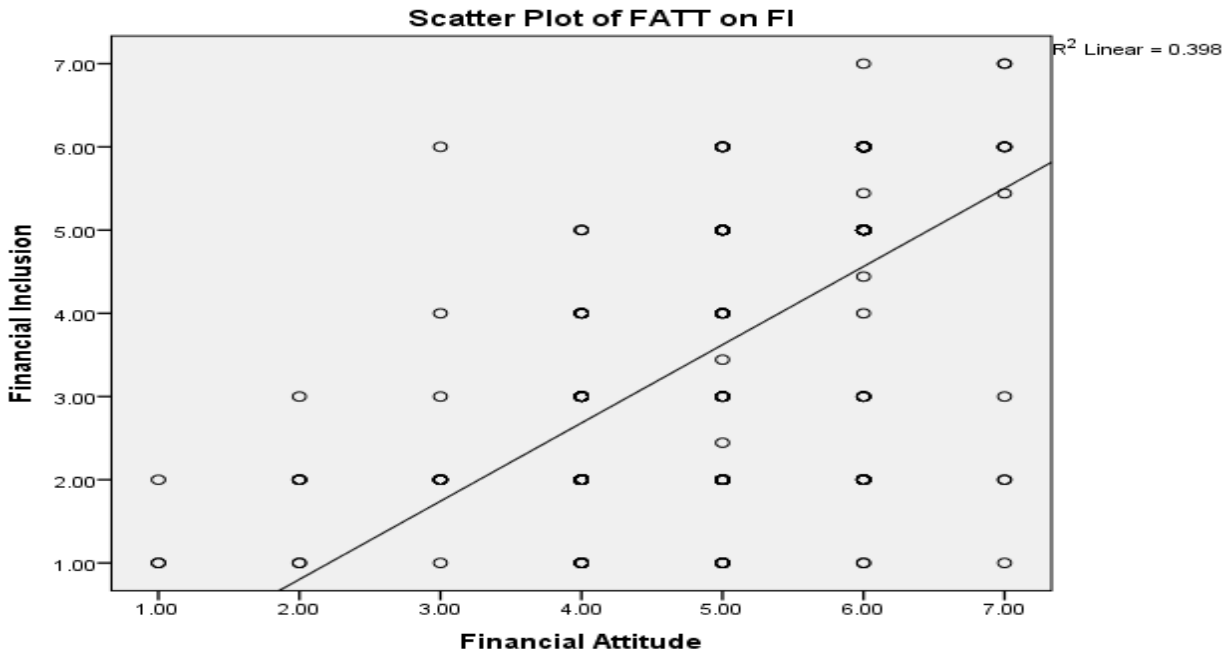
Scatter plots for financial self-efficacy and financial inclusion



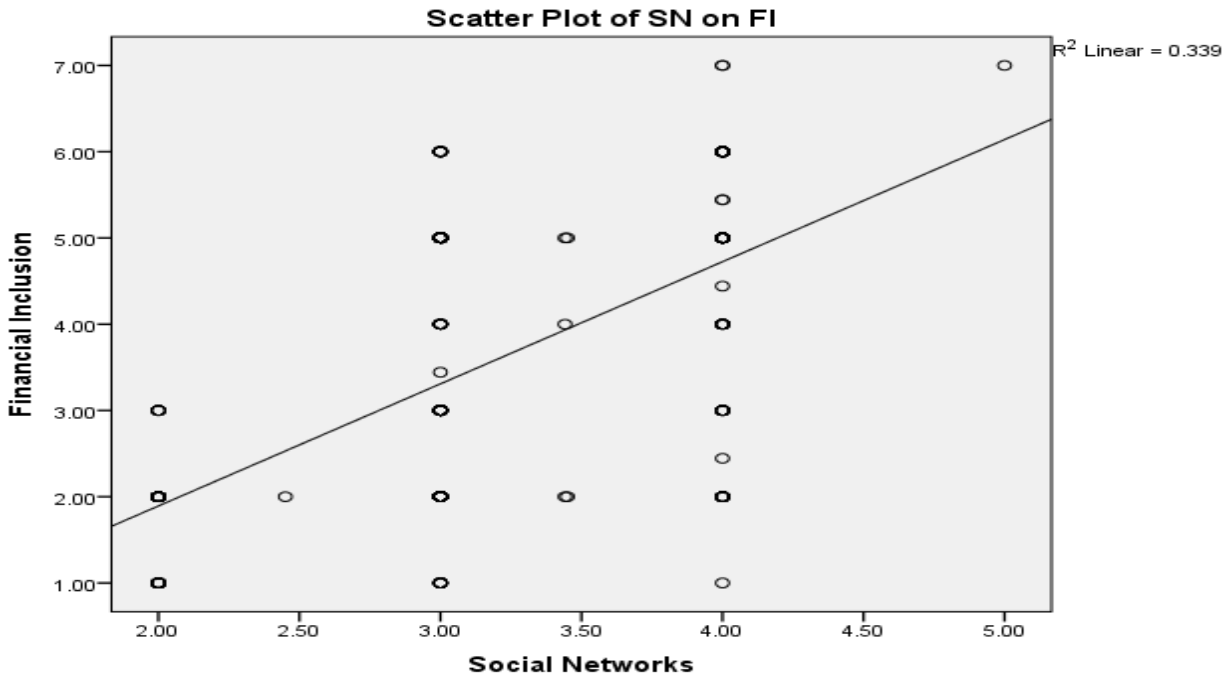
Scatter plots for financial literacy and financial inclusion



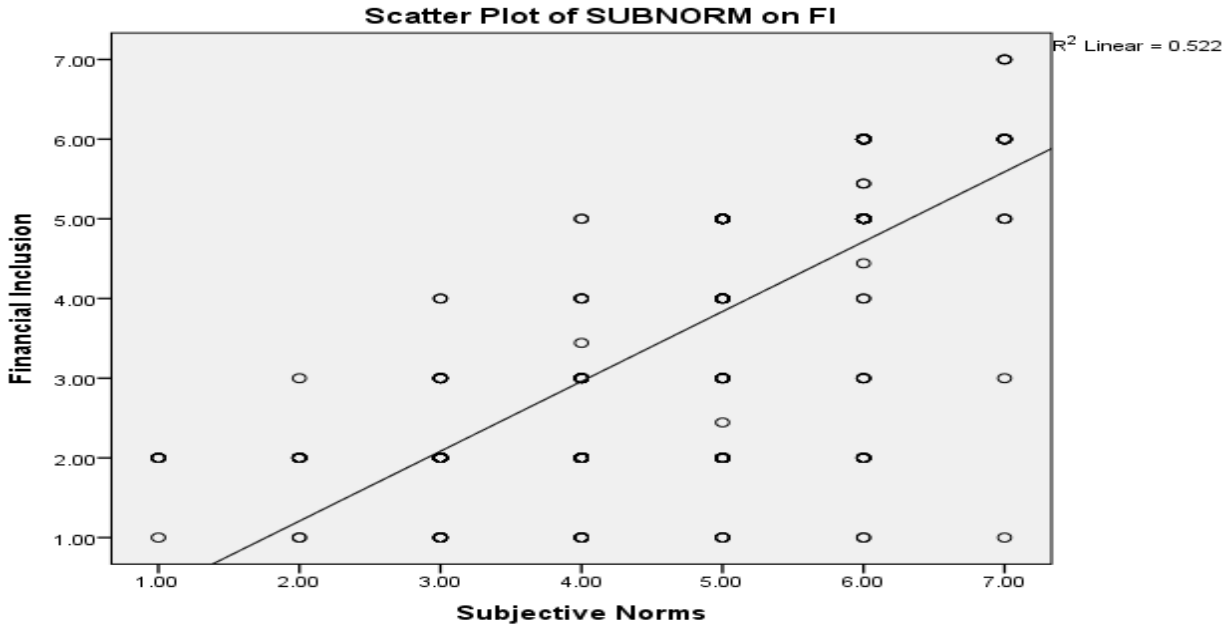
Scatter plots for financial attitude and financial inclusion



Scatter plots for social networks and financial inclusion



Scatter plots for subjective norms and financial inclusion



ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	123.063	5	24.613	10.197	.000[b]
	Residual	948.619	393	2.414		
	Total	1071.683	398			
2	Regression	699.108	6	116.518	122.593	.000[c]
	Residual	372.575	392	.950		
	Total	1071.683	398			
3	Regression	741.394	7	105.913	125.382	.000[d]
	Residual	330.289	391	.845		
	Total	1071.683	398			
4	Regression	879.341	8	109.918	222.874	.000[e]
	Residual	192.342	390	.493		
	Total	1071.683	398			
5	Regression	886.010	9	98.446	206.252	.000[f]
	Residual	185.672	389	.477		
	Total	1071.683	398			
6	Regression	886.518	10	88.652	185.764	.000[g]
	Residual	185.164	388	.477		
	Total	1071.683	398			
7	Regression	889.165	11	80.833	171.394	.000[h]
	Residual	182.518	387	.472		
	Total	1071.683	398			

Dependent variable: Financial Inclusion

Appendix 5d: Test for Multicollinearity

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.697	.229		-3.038	.003		
	Financial Self-efficacy	.208	.041	.190	5.033	.000	.322	3.106
	Financial Attitude	.109	.043	.073	2.517	.012	.539	1.854
	Financial Literacy	.612	.040	.604	15.317	.000	.294	3.403
	Social Networks	.244	.064	.100	3.778	.000	.650	1.538
	Subjective Norms	.051	.043	.042	1.182	.238	.366	2.731

a. Dependent Variable: Financial Inclusion

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions					
				(Constant)	Financial Self-efficacy	Financial Attitude	Financial Literacy	Social Networks	Subjective Norms
1	1	5.764	1.000	.00	.00	.00	.00	.00	.00
	2	.143	6.348	.04	.01	.01	.27	.01	.00
	3	.030	13.863	.01	.55	.28	.20	.09	.00
	4	.028	14.361	.01	.18	.08	.30	.43	.19
	5	.022	16.160	.04	.26	.14	.01	.05	.81
	6	.013	21.041	.89	.00	.49	.22	.43	.01

a. Dependent Variable: Financial Inclusion

Appendix 5e: Test for Autocorrelation (Independence of error terms)

Model Summary[b]

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.906[a]	.820	.818	.70051	1.774

a. Predictors: (Constant), Subjective Norms, Social Networks, Financial Attitude, Financial Self-efficacy, Financial Literacy

b. Dependent Variable: Financial Inclusion

APPENDIX 6: EXPLORATORY FACTOR ANALYSIS: COMMUNALITIES TABLES FOR STUDY VARIABLES

Appendix 6a: Communalities for financial Inclusion

	Initial	Extraction
There is an usable access road leading to the nearest formal financial institution	1.000	.935
The nearest bank is less than 5km from in my home	1.000	.950
I live within less than 1km of an ATM that I can easily visit to access my account	1.000	.952
There are a number of banking agent services that I can easily visit near my home	1.000	.944
There are insurance operators near my home that I can easily visit	1.000	.881
I live within 5km of a place where I can pay my bills	1.000	.932
There is a place near my home where I can easily send and receive money	1.000	.917
I have the money required to run a savings account	1.000	.837
I have enough money to purchase insurance services	1.000	.803
The cost of borrowing money from formal institutions affordable	1.000	.851
I am aware of the formal products and services (savings, loans, insurance and payments/remittances)	1.000	.852
I have used my savings account to save for future expenses	1.000	.838
I have used my savings account to save for any emergencies	1.000	.748
I have received a loan from a bank to finance personal needs	1.000	.671
I have received a loan from a bank for my business	1.000	.631
I have used insurance services for health cover	1.000	.714
I have used insurance services for other in forms of coverage	1.000	.737
I have used my bank account to receive my salary	1.000	.659
I have used the bank account to receive remittances(money)	1.000	.642
I have used my bank to transfer money	1.000	.609
I have used mobile money services to pay bills	1.000	.875
I have used mobile money services to send money	1.000	.726
I have used mobile money services to receive money	1.000	.642
I know which documents are required to open a bank account	1.000	.736
I have the necessary documents required to open an account	1.000	.748
I am assured of getting customer support on the use of the financial services	1.000	.835
When I experience a problem with my transactions, I get quick help	1.000	.802
I find the staff in the formal financial institutions friendly and helpful	1.000	.846
When I have an unpleasant experience with the services, the bank staff solve the issue immediately	1.000	.815
Imposing service charges is fair to bank customers (withdrawal fees, payments fees)	1.000	.737
I am certain of the safety of my transactions when using formal services	1.000	.821
I am sure of the confidentiality of my account transactions	1.000	.810
I am able to utilise a variety of financial services offered	1.000	.746
I feel that it is more reputable to associate with formal financial institutions	1.000	.806
There is available banking infrastructure e.g. ATMs in my area	1.000	.791
The modern equipment and décor make formal financial services more attractive	1.000	.816
I receive prompt information regarding my transactions	1.000	.851

I am able to carry out my transactions because the banking hours are convenient	1.000	.840
The formal financial institutions have modern equipment that make transactions easy	1.000	.798

Appendix 6b: Communalities for financial self-efficacy

	Initial	Extraction
I am confident that I can manage my finances	1.000	.561
I am confident that I can comfortably deal with a financial problem	1.000	.640
I can draw a budget for my spending and savings each month	1.000	.709
I can easily spend less that my income each month	1.000	.702
I can easily save part of my income each month	1.000	.806
It is easy for me to stick to my savings plan against my income	1.000	.682
I can confidently deposit money in the bank to plan for the future	1.000	.750
I can use insurance facilities for unexpected events	1.000	.572
I have the ability to borrow money from the bank	1.000	.826
I have what it takes to use financial services to manage my financial goals	1.000	.784
I can easily send and receive money through the formal institutions and services	1.000	.619
I ensure that I pay back money that I have borrowed in time	1.000	.661

Appendix 6c: Communalities for financial attitude

	Initial	Extraction
I think changing from informal sources of credit to formal is a wise idea	1.000	.576
I believe using insurance services is important to protect me against loss of assets	1.000	.588
In my view service charges of formal services are cheaper than informal services	1.000	.633
In my opinion, I can earn interest on my savings with formal institutions	1.000	.629
I find it convenient to use the remittance services to send and receive money	1.000	.618
I think that using formal financial services is safe for financial transactions	1.000	.742
It is wise to borrow money from formal financial services	1.000	.670
I believe that it is faster to get a consumption loan from a bank	1.000	.506

Appendix 6d: Communalities for financial literacy

	Initial	Extraction
Savings	1.000	.774
Loans	1.000	.840
Insurance	1.000	.896
Remittances (money transfer services)	1.000	.876
Interest rates	1.000	.884
Credit terms	1.000	.914
Inflation	1.000	.860

Appendix 6e: Communalities for social networks

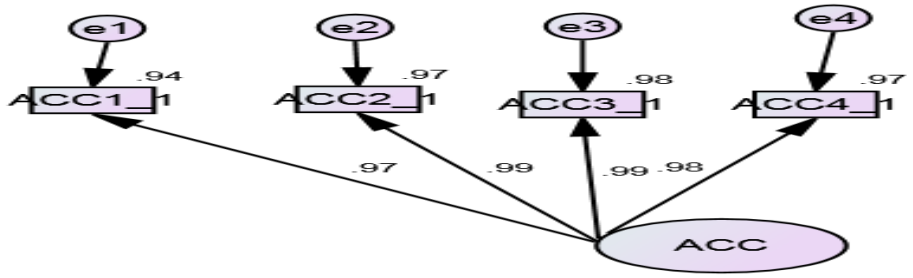
	Initial	Extraction
Social networks are the most important source of financial information	1.000	.740
Social networks have enabled me find out where financial institutions are located	1.000	.721
People in my networks have urged me to set my financial goals	1.000	.741
I use the opportunities within my networks to attain my financial goals	1.000	.810
I rely of others in my networks to make financial decisions	1.000	.668
Social networks are important in obtaining a loan from a financial institution (referee/guarantor)	1.000	.710
Social networks are an important source of credit	1.000	.663
I am recognised by a financial institution because of the social network I belong to	1.000	.644
I use opportunities within quickly in order to attain my financial goals	1.000	.751
I get involved in activities within my networks that improve my financial wellbeing	1.000	.730

Appendix 6f: Communalities for Subjective norms

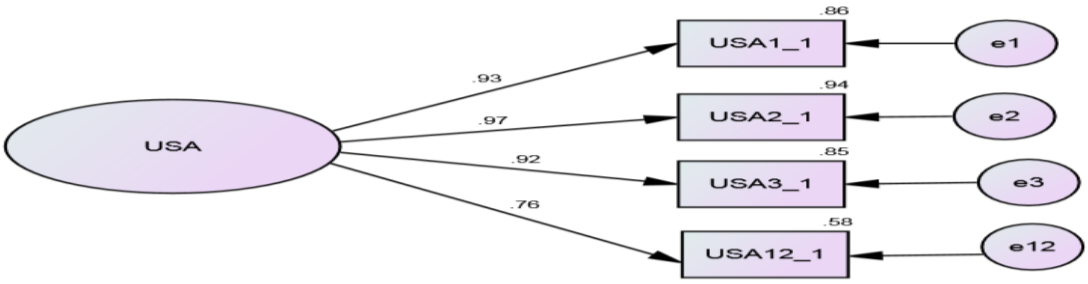
	Initial	Extraction
The people who influence my decisions expect me to save my money in the bank	1.000	.621
Most people who are important to me believe that saving in a bank is safe	1.000	.627
The people important to me would support sending and receiving money through bank remittance services	1.000	.635
The people in my life whose opinions I value would approve of my decisions to reach out to formal financial institutions for my financial needs	1.000	.679
The people who are important to me would expect me to use bank credit to finance my income generating activities	1.000	.680
People whose opinions I value would approve of the usefulness of insurance services	1.000	.637
The people important to me believe I can afford formal financial services	1.000	.740
The people important to me think that formal financial services are cheaper to use	1.000	.751

APPENDIX 7: MEASUREMENT MODEL FOR FINANCIAL INCLUSION CONSTRUCTS

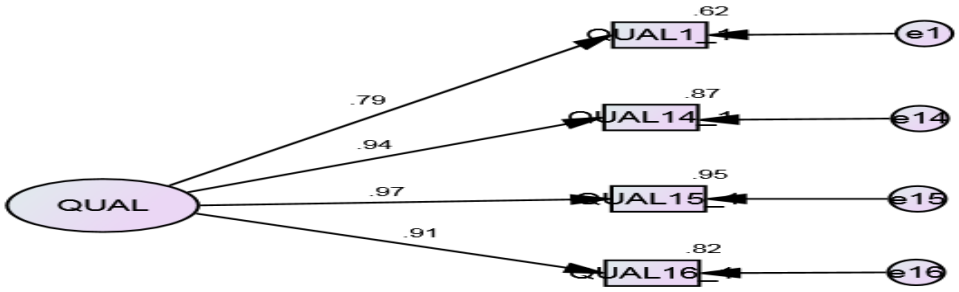
Access



Usage Measurement model



Quality measurement model



APPENDIX 8: BOOTSTRAP MEDIATION SIGNIFICANCE TESTS

Appendix 8a: Bootstrap significance tests of Partial Mediation
Two Tailed Significance (Bootstrap Confidence interval)

Standardized Total Effects						
	SUBNRM	**SOCNET**	**FINLIT**	**FINATT**	**FSE**	**FINCLU**
FSE	.032	.006	.001	.005	...	...
FINCLU	.046	.001	.001	.090	.002	...
Standardized Direct Effects						
FSE	.032	.006	.001	.005	...	...
FINCLU	.353	.003	.001	.626	.002	...
Standardized Indirect Effects						
FSE	...	...	...	...	...	...
FINCLU	.028	.006	.001	.004	...	...

Bootstrap significance tests for Partial Mediation interaction Model
Two Tailed Significance (Bootstrap Confidence interval)

Standardized Total Effects				
	SC	**PCSC**	**PC**	**FSEFF**
FSEFF	.001	.261	.002	...
FIN	.001	.001	.002	.001
Standardized Direct Effects				
FSEFF	.001	.261	.002	...
FIN	.001	.001	.001	.001
Standardized Indirect Effects				
FSEFF	...	...	...	...
FIN	.000	.239	.001	...

Appendix 8b: Appendix: Lower bound and Upper bound Effects for Partial and Full Mediation

Lower bound and Upper Bound (BC) Effects for Partial mediation

Standardized Total Effects - Lower bound						
	SUBNRM	**SOCNET**	**FINLIT**	**FINATT**	**FSE**	**FINCLU**
FSE	.030	.060	.268	-.330	.000	.000
FINCLU	.002	.105	.589	-.156	.144	.000
Standardized Total Effects - Upper Bounds						
FSE	.462	.343	.502	-.070	.000	.000
FINCLU	.226	.272	.771	.012	.365	.000

Lower and Upper Bound Effects (BC) for full Mediation

Standardized Total Effects - Lower bound						
	SUBNRM	SOCNET	FINLIT	FINATT	FSE	FINCLU
FSE	.039	.121	.460	-.206	.000	.000
FINCLU	.038	.119	.445	-.202	.951	.000
Standardized Total Effects - Upper Bounds						
FSE	.327	.307	.647	-.041	.000	.000
FINCLU	.317	.301	.635	-.040	.994	.000

Appendix 8c: Lower and Upper Bound effects of Partial and Full Mediation of interaction Model

Lower and Upper Bound effects of Partial Mediation of interaction Model

Standardized Total Effects - Lower Bounds				
	SC	PCSC	PC	FSEFF
FSEFF	.284	-.026	.360	.000
FIN	.204	.072	.542	.161
Standardized Total Effects - Upper Bounds				
FSEFF	.502	.096	.567	.000
FIN	.374	.184	.699	.333

APPENDIX 9: HARMAN'S SINGLE FACTOR TEST

Total Variance Explained

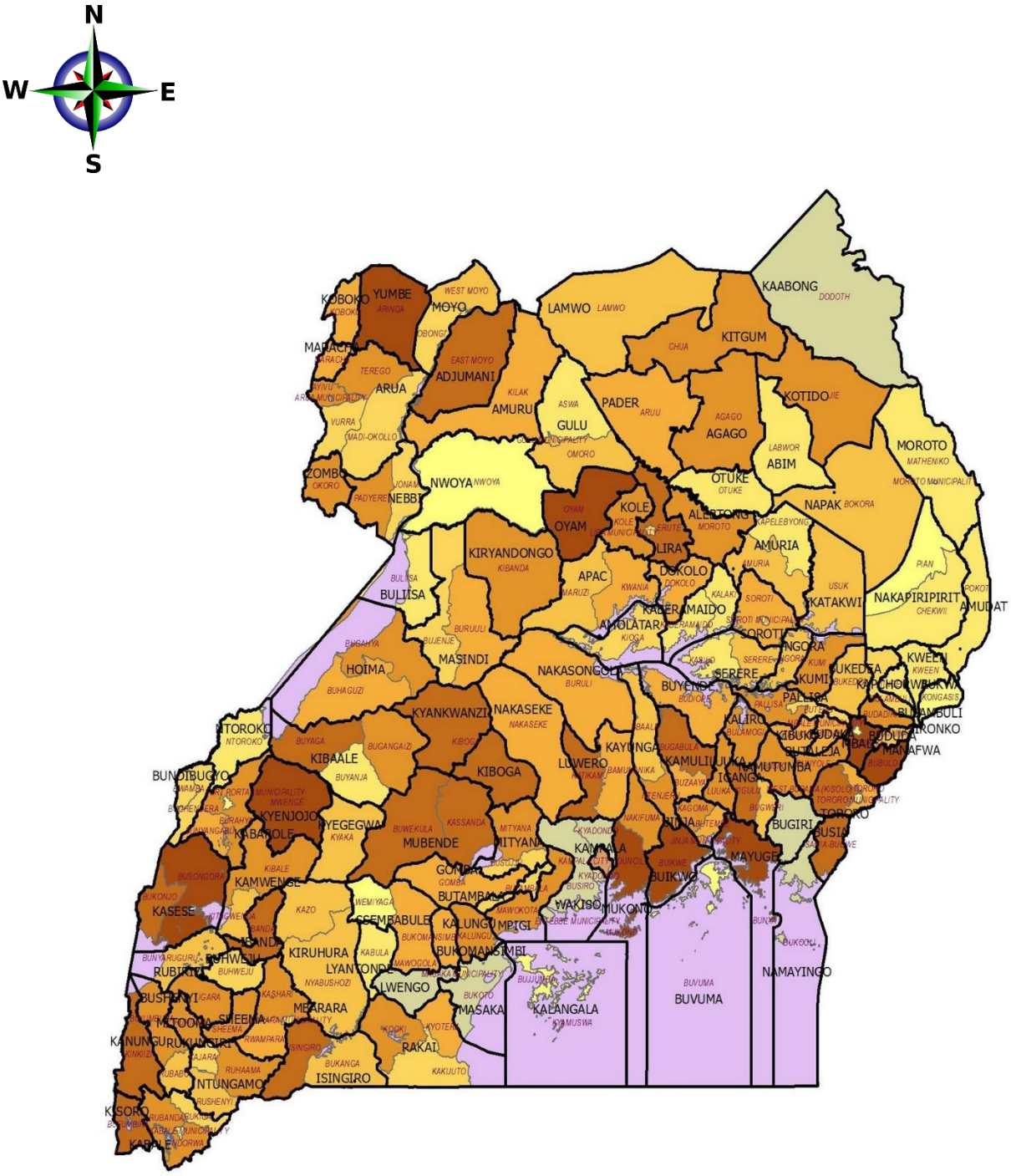
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	54.071	48.713	48.713	54.071	48.713	48.713	34.052	30.677	30.677
2	4.621	4.164	52.876	4.621	4.164	52.876	9.620	8.667	39.344
3	3.520	3.171	56.048	3.520	3.171	56.048	7.395	6.662	46.006
4	2.922	2.632	58.680	2.922	2.632	58.680	4.944	4.454	50.461
5	2.658	2.394	61.074	2.658	2.394	61.074	4.917	4.429	54.890
6	2.348	2.115	63.189	2.348	2.115	63.189	4.281	3.857	58.747
7	2.046	1.843	65.032	2.046	1.843	65.032	3.185	2.869	61.616
8	1.857	1.673	66.705	1.857	1.673	66.705	2.188	1.971	63.587
9	1.606	1.447	68.152	1.606	1.447	68.152	1.895	1.707	65.295
10	1.549	1.396	69.548	1.549	1.396	69.548	1.780	1.604	66.898
11	1.348	1.215	70.762	1.348	1.215	70.762	1.719	1.549	68.447
12	1.214	1.094	71.856	1.214	1.094	71.856	1.670	1.505	69.952
13	1.165	1.050	72.905	1.165	1.050	72.905	1.652	1.488	71.440
14	1.105	.996	73.901	1.105	.996	73.901	1.646	1.483	72.923
15	1.061	.956	74.857	1.061	.956	74.857	1.527	1.375	74.298
16	1.016	.915	75.772	1.016	.915	75.772	1.516	1.365	75.663
17	1.002	.902	76.675	1.002	.902	76.675	1.122	1.011	76.675
18	.943	.850	77.524						
19	.889	.801	78.326						
20	.842	.758	79.084						
21	.807	.727	79.811						
22	.787	.709	80.520						
23	.751	.676	81.196						
24	.740	.667	81.863						
25	.702	.633	82.496						
26	.687	.619	83.115						
27	.662	.596	83.711						
28	.629	.567	84.278						
29	.624	.562	84.840						
30	.618	.556	85.396						
31	.584	.526	85.923						
32	.558	.503	86.426						
33	.531	.478	86.904						
34	.528	.476	87.380						
35	.504	.454	87.833						
36	.489	.441	88.274						
37	.485	.437	88.711						
38	.473	.426	89.137						

39	.438	.394	89.531						
40	.423	.381	89.912						
41	.416	.375	90.287						
42	.404	.364	90.650						
43	.378	.341	90.991						
44	.377	.340	91.331						
45	.368	.331	91.663						
46	.362	.326	91.989						
47	.348	.314	92.302						
48	.323	.291	92.593						
49	.310	.279	92.872						
50	.304	.274	93.146						
51	.288	.260	93.406						
52	.286	.257	93.663						
53	.278	.251	93.914						
54	.258	.233	94.146						
55	.251	.226	94.373						
56	.248	.224	94.596						
57	.240	.217	94.813						
58	.231	.208	95.021						
59	.229	.206	95.227						
60	.220	.199	95.425						
61	.219	.197	95.622						
62	.212	.191	95.813						
63	.203	.183	95.996						
64	.201	.181	96.177						
65	.197	.177	96.354						
66	.185	.167	96.521						
67	.182	.164	96.686						
68	.168	.152	96.837						
69	.163	.147	96.984						
70	.159	.143	97.127						
71	.153	.138	97.265						
72	.148	.133	97.398						
73	.143	.129	97.527						
74	.141	.127	97.654						
75	.137	.124	97.778						
76	.129	.116	97.894						
77	.126	.114	98.008						
78	.122	.110	98.118						
79	.117	.106	98.223						
80	.113	.102	98.325						
81	.107	.097	98.422						
82	.107	.096	98.518						

83	.102	.092	98.610						
84	.096	.086	98.696						
85	.093	.084	98.780						
86	.087	.078	98.858						
87	.084	.076	98.934						
88	.082	.074	99.008						
89	.080	.072	99.080						
90	.079	.071	99.151						
91	.076	.069	99.220						
92	.074	.066	99.286						
93	.070	.063	99.350						
94	.065	.059	99.409						
95	.062	.056	99.465						
96	.058	.052	99.517						
97	.056	.051	99.567						
98	.052	.047	99.614						
99	.051	.046	99.660						
100	.046	.042	99.702						
101	.044	.040	99.742						
102	.042	.037	99.779						
103	.040	.036	99.815						
104	.037	.033	99.848						
105	.034	.031	99.879						
106	.031	.028	99.907						
107	.028	.025	99.932						
108	.025	.022	99.954						
109	.021	.019	99.973						
110	.017	.015	99.988						
111	.013	.012	100.000						

Extraction Method: Principal Component Analysis.

APPENDIX 10: MAP OF UGANDA SHOWING DISTRICTS AND COUNTIES



-THE END-