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Résumé de l'article

Premised on Meta analysis of financial intermediation theory by Gurley and Shaw (1960), Leland and Pyle (1977), Diamond and Dybvig (1983), Allen and Santomero (1996), Scholtens and van Wensveen (2000), the main purpose of this study is to test for the predictive power of each of the dimensions of financial intermediation of market penetration and quality of financial services on financial inclusion of the poor by microfinance banks in rural sub-Saharan Africa grounded on the financial intermediation theory. This study adopted a cross-sectional research design and data were collected from 400 poor households located in rural Uganda. The data were analyzed using ordinary least square hierarchical regression (OLS) in SPSS (statistical packages for social sciences) to generate the explanatory power of each of the dimensions of financial intermediation on financial inclusion based on coefficient of determination (R^2). In addition, results from analysis of variances (ANOVA) were also generated to establish the differences in the perceptions of the poor towards being financially included through financial intermediation. The results revealed that market penetration and quality of financial services as dimensions of financial intermediation significantly explains 22 percent of the variation in financial inclusion of the poor in rural Uganda. Additionally, when individual effects were considered, both market penetration and quality of financial services had significant and positive effects on financial inclusion of the poor in rural Uganda. Accordingly, our study contributes and recommends specific policies toward the role of financial intermediaries in financial deepening, especially in rural sub-Saharan Africa where there are limited presence of traditional banking structures to serve the unbanked rural poor households.

Financial Intermediation by Microfinance Banks in Rural Sub-Saharan Africa: Financial Intermediation Theoretical Approach[1]

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Premised on Meta analysis of financial intermediation theory by Gurley and Shaw (1960), Leland and Pyle (1977), Diamond and Dybvig (1983), Allen and Santomero (1996), Scholtens and van Wensveen (2000), the main purpose of this study is to test for the predictive power of each of the dimensions of financial intermediation of market penetration and quality of financial services on financial inclusion of the poor by microfinance banks in rural sub-Saharan Africa grounded on the financial intermediation theory. This study adopted a cross-sectional research design and data were collected from 400 poor households located in rural Uganda. The data were analyzed using ordinary least square hierarchical regression (OLS) in SPSS (statistical packages for social sciences) to generate the explanatory power of each of the dimensions of financial intermediation on financial inclusion based on coefficient of determination (R^2). In addition, results from analysis of variances (ANOVA) were also generated to establish the differences in the perceptions of the poor towards being financially included through financial intermediation. The results revealed that market penetration and quality of financial services as dimensions of financial intermediation significantly explains 22 percent of the variation in financial inclusion of the poor in rural Uganda. Additionally, when individual effects are considered, both market penetration and quality of financial services have significant and positive effects on financial inclusion of the poor in rural Uganda. Accordingly, our study contributes and recommends specific policies toward the role of financial intermediaries in financial deepening, especially in rural sub-Saharan Africa where there are limited presence of traditional banking structures to serve the unbanked rural poor households.

Key words: Financial intermediation, microfinance deposit-taking institutions, Uganda, financial inclusion, sub-Saharan Africa, poor households, financial deepening

1. Introduction

The current 2030 agenda of the Sustainable Development Goals (SDGs) of the United Nations suggest that access to basic financial services through universal financial inclusion is a key enabler towards eradicating global poverty, especially in developing countries. Indeed, Klapper, El-Zoghbi, and Hess (2016) argue that availability of financial services such as savings, payments, credits, and insurance through microfinance banks in rural areas can economically and socially empower the poor to come out of poverty.

According to Chakrabarty (2011), financial inclusion is referred to as ''the process of ensuring access to appropriate financial products and services needed by all sections of the society in general and vulnerable groups such as the weaker section and low-income groups in particular at an affordable cost in a fair and transparent manner by mainstream institutional players''. Whereas Otero (1999) defined microfinance as "the provision of savings and credit services appropriate to and accessible by the poor and low-income people who are generally denied access to the formal financial system".

Scholars like Armendariz de Aghion and Morduch (2005); Yunus (2005); and the United Nations (2006) observe that microfinance banks play greater roles in providing financial services, especially in rural areas where the traditional banks have limited or no presence. Okello Candiya Bongomin et al., (2020); Biosca, Lenton, and Mosley (2014); Balkenhol and Hudon (2011) contend that microfinance banks aim at providing financial services to low-income households and microenterprises who have been largely excluded by the traditional banks.

Consequently, Chandan and Mishra (2010); Kendall, Mylenko, and Ponce (2010); Demirguc-Kunt and Klapper (2012); and Mishkin (2007) argue that market penetration through the opening of new branches by microfinance banks can lead to provision of quality financial services that suit the needs and economic situation of the poor.

Indeed, the presence of financial institutions' structures such as offices, branches, and personnel can lead to increased provision of financial services to the poor who resides in rural areas in developing countries (Ergungor, 2010). Demirguç-Kunt et al., (2018) concur that provision of quality and wide range of suitable financial products by microfinance banks to the poor can help them to leapfrog out of poverty (see also Okello Candiya Bongomin et al., 2017; CGAP, 2013).

Findings by Prina (2013) indicated that women in rural Nepal who were offered simple bank accounts by microfinance banks increased their total assets by 16 percent. In addition, Burgess and Pande (2005) also found that a government effort to open banks in rural areas in India reduced rural poverty by 17 percent among the population.

While studies such as Okello Candiya Bongomin et al., (2017); Demirguç-Kunt et al., (2018); Demirguc-Kunt and Klapper (2012); Chandan and Mishra (2010); Kendall et al., (2010); Mathew and Thompson (2008); Mishkin (2007); Rau (2004); and Nissanke and Stein (2003)

among others, indicate that financial intermediation promotes financial inclusion in developing countries, limited studies exist to test for the predictive power of each of the dimensions of financial intermediation on financial inclusion of the poor by microfinance banks in rural sub-Saharan Africa grounded on the financial intermediation theory.

Besides, findings by the Financial Sector Deepening Uganda (FSDU, 2016) revealed that access to and use of financial services among the rural poor in Uganda stand at only 14 percent. Furthermore, the latest FinScope Topline Survey (2018) also indicated that only 25 percent of adults save formally in Uganda.

Accordingly, this study is motivated by the limited studies on the predictive power of each of the dimensions of financial intermediation on financial inclusion of the poor and lack of access to and use of financial services in rural areas in Uganda.

Thus, the main purpose of this study is to test for the predictive power of each of the dimensions of financial intermediation on financial inclusion of the poor by microfinance banks in rural sub-Saharan Africa grounded on the financial intermediation theory with data obtained from rural Uganda.

2. Literature review and theoretical underpinning

2.1. Financial intermediation theory

The theory of financial intermediation originated from the work of Gurley and Shaw (1960) in the 20th century, which divided the economy into the spending units and financial intermediaries. They asserted that financial intermediation is based on the informational asymmetry theory and agency theory. This meant that both the surplus and deficit units could not trade directly because of lack of vital information in the market between the two parties. Thus, it was an indication that the market was not perfect contrary to the "Arrow -Debreu world". Therefore, they argued that financial intermediaries like banks exist to reduce information asymmetry and, hence transaction costs to enable efficient exchange between the surplus (savers) and deficit (borrowers) units. The financial intermediaries incur monitoring cost ex-ante and ex-post in the financial market to solve the problem of adverse selection, which concomitantly generates moral hazard. Consequently, they establish efficiency within the financial market by linking the savers to investors who need funds for investments.

Similarly, Leland and Pyle (1977) observe that financial intermediaries are a coalition, which deals with the distribution of information. The information for certain classes of assets, typically those related to individuals such as mortgages or insurance, which is not publicly available, can be obtained by spending resources. Yet this information can benefit potential lenders if they are available with some economies of scale. Therefore, this can only be achieved if organizations that gather and sell the information about particular classes of assets existed in an economy. For this reason, the presence of financial intermediaries act as a natural response to

asymmetric information. This means that information asymmetry is the primary reason for the existence of financial intermediaries in the financial market.

Additionally, the seminal work by Diamond (1984) in his famous model of banks as delegated monitors, postulates that the existence of banks help to avoid the duplication of audit costs on the part of all creditors. The reduction of monitoring costs, though related to the transaction costs, unveils the information provision function performed by banks. This results into provision of quality financial services to investors. According to Diamond *ibid*, financial intermediaries act as authorized agents of those who save up to achieve economies of scale. An intermediary like a bank is delegated the task of costly monitoring of loan contracts written with firms who borrow from it. It has a gross cost advantage in collecting this information because the alternative is either duplication of effort if each lender monitors directly, or a free-rider problem, in which case no lender monitors. The information production task delegated to the intermediary gives rise to incentive problems (delegation costs) for the intermediary. Thus, diversification by intermediaries make it possible to derive net advantage of intermediation. This is because there is a strong similarity between the incentive problem of an individual borrower and lender and between an intermediary and its depositors. Therefore, the possibility of diversification within the intermediary can make the incentive problems sufficiently different to make it feasible to hire an agent (the intermediary) to monitor an agent (the borrower). The financial intermediary raises funds from many lenders (depositors), promises them a given pattern of returns, lends to entrepreneurs, and spends resources monitoring and enforcing loan contracts with entrepreneurs, which are less costly than those available without monitoring. Thus, financial intermediaries exist to monitor the entrepreneurs' information and receive payments from the entrepreneurs, which are not observed by depositors.

Furthermore, Allen (1991) also suggests that financial intermediaries are agents that intermediate between an initial seller of information and its ultimate buyers. This is not based on transaction costs because the operations of such markets depend critically on the information buyers have about the risk aversion of the sellers and the securities that are available. Accordingly, those who save up entrust their available funds with financial intermediaries to be invested in whichever projects they consider viable, although depositors may withdraw their funds at any time under the pre-established conditions. Accordingly, financial intermediaries exist to buy and sell assets and financial contracts (Benston & Smith, 1976) by mediating between the providers and users of financial capital (Bolton & Freixas, 2000).

In the same vein, Greenwood and Jovanovic (1990) also argue that financial intermediaries pool funds together from savers and acquire information that enable them to allocate it to high value use. Specifically, Greenwood and Jovanovic *ibid,* observe that financial intermediaries invest in safe, low risk, and high yielding investments to gain more returns from the funds. Indeed, financial intermediaries create assets for creditors and liabilities for debtors that are more attractive than if the two parties transacted directly. Consequently, they bring together the two parties with complementary needs by eliminating informational asymmetry in the transaction. They achieve this because they are in a better position to access the necessary information than the participants since they have abilities to interpret market signals and reuse previously obtained information.

Conclusively, financial intermediaries ensure efficiency in the transaction between the lenders and borrowers by matching their needs within the financial market using information advantage. As a result, financial intermediaries like microfinance banks use the acquired information to screen and define new clients including the poor to whom it extends financial services (Mathew & Thompson, 2008; Nissanke & Stein, 2003). Indeed, the cost incurred in the process of intermediation by the microfinance bank determines its level of market penetration and the quality of financial services offered to the poor.

2.2. Microfinance banks and financial intermediation

Contemporary researchers such as Okello Candiya Bongomin et al., (2017); King and Levine (1993); Benhabib and Spiegel (2000); Arestis et al., (2001); and Wachtel (2001) among others, show that microfinance banks can promote economic growth, especially in rural areas by increasing availability of resources through improving allocation of savings.

Drawing from the modern financial intermediation theory, microfinance banks play important roles in providing loans to deficit units, especially in rural areas. They achieve this by preventing the savers and investors from trading directly due to the problem of information asymmetry, which results in adverse selection and moral hazard in financial transactions (Akerlof, 1970).

Indeed, Greenwood and Jovanovic (1990) argue that microfinance banks can reduce the cost of acquiring and processing information between the surplus and deficit units and enable financial transactions. This in turn improves resource allocation because they take the responsibility of delegated monitoring (Diamond, 1984). They are able to achieve this because of informational advantage they have over the savers and borrowers in the process of intermediation. DeGennaro (2005) contends that the microfinance banks acquire information that is not readily available in the financial market from the different parties and use it to provide credit to clients like the poor who have no access to formal commercial banks.

2.3. Financial intermediation and financial inclusion

Karlan and Morduch (2009) suggest that expanding access to financial services hold the promise to help to reduce poverty and spur economic development, especially in rural areas in developing countries. Thus, Prahalad (2005) observes that microfinance banks can offer better channels through which financial services can be delivered to the "*bottom of the pyramid''* population in rural areas of developing countries.

More so, the United Nations (2006) also asserts that provision of suitable financial services by semi-formal financial institutions like microfinance banks, which uses social approach, can ease access to and use of financial services by the poor. This helps them to generate income, build assets, smooth consumption, and manage households' risk (Okello Candiya Bongomin, 2016).

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Correspondingly, La Torre and Vento (2006) argue that modern microfinance banks can spur financial inclusion by providing a wide range of financial services and products such as credits, savings, payments, and insurance that suit the economic status of the poor.

Subsequently, the microfinance banks use new and past information about the borrowers to lend and monitor loan contracts. This reduces transaction costs associated with adverse selection and moral hazard. Rau (2004) asserts that the microfinance banks use the available information to screen and define its new clients like the poor to whom it provides financial services (see also World Bank, 2008; Stiglitz & Greenwald, 2003; Menkhoff, 2000).

Findings by Johnson and Nino-Zarazua (2009) revealed that microfinance banks played a greater role in promoting access to financial services in different regions in rural Kenya and Uganda. Therefore, here we hypothesize that:

H1:   *Financial intermediation significantly and positively affect financial inclusion of the poor in rural sub-Saharan Africa.*

2.4. Market penetration and financial inclusion

The World Bank Global FINDEX survey 2017 indicates that physical distance is ranked among the top reasons for lack of bank account ownership among the adult population, especially in sub-Saharan Africa (Demirguç-Kunt et al., 2018). Claessens (2006) also observes that most individuals in rural areas may have no access to financial services because there are no financial institutions within their reach.

Accordingly, Cihák et al., (2016) suggest that stable financial system, which promotes the opening and operation of bank branches in rural areas, can result into increased access to and use of varieties of financial services by the poor. Indeed, Beck, Demirguc-Kunt, and Peria (2005) show that the presence of bank structures such as points of sale together with Automated Teller Machines (ATM) at rural bank branches significantly lead to increased access to and use of financial services among the unbanked poor population.

Collins et al., (2009) also state that low transaction costs due to proximity to local bank branches can lead to more consumption of savings product. Additionally, Peachey and Roe (2006) contend that countries with higher bank branches and ATM penetration can experience higher access to and use of financial services.

Most recently, Okello Candiya Bongomin et al., (2021) and Barajas et al., (2020) have also revealed that adoption and use of financial technology and innovation like mobile banking can lead to increased access to and use of financial services by the unbanked poor population in hard-to-reach regions of the developing world. Digital financial services like mobile money can help the poor to cheaply and conveniently receive, store, and send money due to its ubiquitous nature (Suri & Jack, 2016).

Besides, Beck, Demirgüç-Kunt, and Maksimovic (2005) indicate that the concentration of bank branches with foreign origin, especially in countries with high levels of GDP per capita, well-developed institutions, and an efficient credit registry can result into increased access to financial services by the poor (see also Clarke, Cull, & Martinez Peria, 2001).

Furthermore, Burlando, Goldberg, and Etcheverry (2020) also conceive that linkages between formal, semi-formal, and informal financial sources can increase financial deepening and access to financial services by the poor in rural villages. The linkages between banks and local financial structures like village savings and loans associations (VSLAs) can reduce the costs of opening-up bank branches in rural areas, and hence, spur access to financial services. Particularly, lending through bank linkages can result into good loan portfolio because of the existing social capital and joint-liabilities among VSLA members. Therefore, this leads to increased access to and use of credit by the poor (Khandkar, 2000).

Findings by Sophastienphong and Kulathunga (2008) showed that demographic bank and ATM penetration were critical factors in promoting access to and use of basic financial services in rural south Asia. Indeed, the existence of an inclusive financial system with presence of physical banking facility, limited eligibility requirements, and low-priced financial services can result into increased scope of financial inclusion of the poor. Thus, here we hypothesize that:

H2: Market penetration significantly and positively affect financial inclusion of the poor in rural sub-Saharan Africa.

2.5. Quality of financial services and financial inclusion

Demirguç-Kunt et al., (2018) show that access to finance has remained low globally because of the quality of financial services and products provided by financial institutions. Lack of product suitability, service irregularity, low frequency of availability, and long waiting time has resulted into persistent involuntary exclusion of rural-based households in developing countries.

According to the Americans for Community Cooperation in Other Nations (ACCION, 2011), full financial inclusion entails four dimensions that are vital for expanding access to and use of basic financial services among the poor. ACCION observes that access to financial services can be determined by what is provided, how it is provided, who receives, and the provider. Consequently, delivery of quality financial services remain paramount in provision of financial services to the poor who live in rural areas in developing countries.

Kendall et al., (2010); Alliance for Financial Inclusion (2010) also argue that providers of financial services should offer full range of basic financial services with convenience and limited eligibility requirements in order to promote financial inclusion of the poor.

More so, Philip and Hazlett (1997) also assert that quality defined by physical presence of banking facilities, customer care, and product type can attract the poor who are presumed illiterate to access and use financial services (see also Parasuraman, Zeithaml, and Berry, 1985;

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1988). Indeed, financial services provided with reliability, safety, assurance, and dignity can attract more poor individuals to access and use the services.

In the same line of argument, Beck, Levine, and Levkov (2010); Ardic, Heimann, and Mylenko (2011); and Sarma (2010) further affirm that banks should provide well suited financial services and products delivered responsibly and in a timely manner in order to ensure full access and use by low-income population. Consistent with the Consultative Group to Assist the Poor (CGAP, 2010), financial services should be provided with convenience, affordability, eligibility, flexibility, reliability, continuity, safety, and dignity of treatment with client protection for the poor to realize the impact. The World Bank (2014) contends that provision of loans with substantial interest rebates and the promise for larger future loans by microfinance banks can lead to increased access to and use of credit by the poor.

Additionally, Hawkins (2006) point to the fact that the presence of a well functioning banking sector with high quality financial services and products provided at lower costs can result into increased access to and use of financial services by poor micro-entrepreneurs. This helps them to generate income and escape from poverty.

Conclusively, a study by Ebrahimi and Moghadam (2012) found that product assurance and service reliability were labeled as the most significant and important factors in provision of financial services by Iranian banks. Specifically, quality dimension of tangibility strongly affect the demand for financial services. Hence, here we hypothesize that:

H3:   *Quality of financial services significantly and positively affect financial inclusion of the poor in rural sub-Saharan Africa.*

Table 1. Studies on financial intermediation and access to financial services 1960 - 2012

Authors and year	Main research question	Methodology	Findings
Allen et al., (2011)	do bank presence lead to financial inclusion?	OLS regression	presence of bank branch increased financial inclusion by 31 percent.
Allen and Gale (2004)	what are the roles of banks?	OLS regression	banks provides deposits and credit.
Ardic et al., (2011)	what is the level of access to finance around the world?	correlations analysis	56 percent of in adults are unbanked globally.

Beck et al., (2007)	do government and public infrastructure promote banking outreach?	regression analysis	better communication and transport infrastructure, and governance are associated with greater outreach.
Beck et al., (2004)	do financial development lead to increased access to financial services?	probit OLS regression	financial intermediary development increases access to financial services.
Burgess and Pande (2005)	what is the role of bank expansion in poverty reduction?	OLS regression	branch expansion reduces poverty due to availability of credit and savings products.
CGAP and World Bank (2010)	what is the level of access to banking service around the world?	meta analysis	access to deposits and savings remain worse despite presence of bank structures.
Chandan and Mishra (2010)	what is the level of access to financial services between urban and rural areas?	mini-max method	variation in access across urban and rural areas.
Demirguc-Kunt and Klapper (2012)	What is the level of financial around the world?	regression analysis	35 percent of adults remain unbanked due to physical distance, lack of documentation and costs.
Ergungor (2010)	do credit history have impact on access to credit?	GMM modeling	credit histories limit access to credit.

Heikkilä et al., (2009)	what is the role of social capital in promoting access to credit?	OLS regression	individual social capital increases access to credit.
Kendall et al., (2010)	do financial development and physical infrastructures promote access to financial services?	regression analysis	development and physical infrastructure are positively associated with deposit account, loan, and ranch penetration.
Peachy and Roe (2004)	what is the role of bank proximity in improving banking access?	regression analysis	bank proximity improves access to financial services.
Rojas-Suárez and Gonzales (2010)	what is the role of government in promoting access to loans?	regression analysis	adequate incentives by government increased provision and demand for loans.
Sarma (2010)	what is the level of financial index (IFI) around the world?	regression analysis	presence of banking outlets leads to access to credit and deposit services.

3. Methodology

3.1. Study design

This study used cross-sectional research design to collect data from the poor who live in rural Uganda. This design was used because of its strength and advantages over the longitudinal research design. First, it aids collection of large amount of data over a shorter period of time. Second, it minimizes recurrent mistakes rampant with repeated use of the same instruments common with longitudinal studies. Third, it observes all the population identified for the study in a specific point in time. Thus, cross-sectional research design was used to collect data for this study from a total sample of 400 poor households located in rural Uganda.

3.2. Population and sampling frame

The population for this study was identified based on the statistical abstract on poverty level projection in Uganda by Uganda Bureau of Statistics (UBOS, 2012). The poor households selected for this study were drawn from four regions in Uganda. The sample was selected from central, northern, eastern, and western regions. Therefore, a total population of 1.2 million poor households living in rural Uganda was identified for this study.

The sampling unit consisted of poor households residing in rural Uganda. Prior to selection of the sample to be used in this study, multi-stage sampling technique using regions, districts, and villages was used to select the sample to be included in this study. Thereafter, simple random sampling was used to identify two districts from each region to be included in this study. This sampling method was used to give all the poor households located in the different regions equal opportunity to participate in this study.

Additionally, three poverty indicators of housing condition, household welfare, and household utility were used in identifying poor households to be included in this study. Thus, a total sample of 400 poor households was selected from a population of 1.2 million poor households located in the four regions in Uganda. The sample size was arrived at using the method for sample size determination recommended by Yamane (1973).

3.3. Data collection instrument and validation

The quantitative data for this study were collected using a semi-structured questionnaire to generate statistical results to answer the hypotheses derived under this study.

The semi-structured questionnaire was developed based on guideline recommended by Churchill and Iacobucci (2004). The guideline hints on nine steps, which involves: specifying what information will be sought, determining the type of questionnaire and methods of administering, determining the content of individual items, determining the form of responses, determining the wording of each question, determining the sequence of questions, determining the physical lay-out and characteristics of the questionnaire, re-examining steps 1-7, and carrying out the pre-test of the questionnaire.

The quantitative data were collected due to its ability to generalize findings and make predictions (see for e.g. Bryman, 2004; Creswell, 2003). The data used in this study were collected using a semi-structured questionnaire that was designed to elicit responses from the selected poor households.

A pilot study was carried out on a total sample of 200 poor households located in Mukono District before the main study. This was done to validate the questions that were included in the final study questionnaire. The difficult and double barrel questions were eliminated to make the questionnaire simple and easily understandable. The main study was conducted over a period of three months by two research assistants.

3.4. Test for common method bias

According to Podsakoff, MacKenzie, Paine, and Bachrach (2000), common method bias, which involve random and systematic measurement errors can cause a problem in the relationships between variables under study. This arises because the errors can inflate or deflate the standard deviation and mean.

Podsakoff, MacKenzie, Lee, and Podsakoff (2003) propose the use of statistical remedy through conducting Harman's one-factor test to check for the presence of common method variance. This is done by entering the variables into a factor analysis model. Indeed, if common method bias is a problem among the manifest of the different latent variables, then a one-factor model would be a perfect fit to the data. However, if common method bias is absent, the model will present a non-fit to the observed data.

Accordingly, the test for common method bias indicated that it was not a problem in this study. The exploratory factor analysis (EFA) combining 14 items were extracted and 2 constructs of market penetration and quality of financial services emerged with both explaining 26 percent and 36 percent of the variation in the parent variable, respectively. This confirmed that none of the factors emerged dominant in explaining the parent variable of financial intermediation.

3.5. Measurement of study variables

The main purpose of this study is to test for the predictive power of each of the dimensions of financial intermediation on financial inclusion of the poor by microfinance banks in rural sub-Saharan Africa grounded on the financial intermediation theory with data obtained from rural Uganda. Thus, two main variables of financial intermediation and financial inclusion were used in this study.

Financial intermediation was measured using 14 items that were developed based on the dimensions of market penetration and quality of financial services as recommended by Dutta and Dutta (2011); Allen et al., (2011); and Yaron, Benjamin, and Piprek (1997).

Financial inclusion was measured using 10 items that were developed based on the dimensions of access, usage, quality/relevance, and welfare as recommended by Okello Candiya Bongomin et al., (2020); ACCION (2011); Alliance for Financial Inclusion (2010); Cihák, et al., (2012); Claessens (2006); and Beck et al., (2008).

All the items developed to measure the main variables under this study were put onto a 5-point likert scale of strongly agree (5), agree (4), not sure (3), disagree (2), and strongly disagree (1). The 5-point likert scale was adopted in this study because of its versatility, simplicity, and clarity (see for e.g. Likert, 1932; John, 2010; DeVellis, 2003).

3.6. Techniques of data analysis

The data collected for this study were analyzed using ordinary least square hierarchical regression in SPSS based on the coefficient of determination (R^2). The predictive effects were determined by calculating the significant change in coefficient of determination between the dimensions of financial intermediation in explaining financial inclusion.

In addition, analysis of variances (ANOVA) was also used to test for variation in perceptions of the poor about being financially included through financial intermediation.

Three models were constructed to examine the individual effect of each of the dimensions of market penetration and quality of financial services on financial inclusion. The control variables comprising of gender, age, level of education, and sources of income were entered into the first model, while market penetration was entered into the second model. Finally, quality of financial services was entered into the third model to determine the overall effect of the dimensions of financial intermediation on financial inclusion.

3.7. Exploratory factor analysis (EFA)

According to Barclay, Higgins, and Thompson (1995), exploratory factor analysis is performed to summarize variables from the constructs with multiple questions to a more meaningful and interpretable factors. Furthermore, it is also performed to explore theoretical structure. Thus, exploratory factor analysis is test of the number of factors that can be seen as an analysis of the construct validity of a scale. It determines the number of aspects of a construct that can be measured by a set of items and checks if there are items that don't measure the construct.

Therefore, exploratory factor analysis was performed on the different variables under this study to determine factors that statistically converge to explain variation in them based on Eigen values greater than 1 with absolute value above 0.5 (Field, 2005).

The principal component analysis (PCA) using Varimax with Kaiser Normalization was performed to test for the components of financial intermediation, which yielded five factors with Eigen values greater than 1. The results indicated that three items of market penetration loaded on factor 1 with significant loadings of 0.719 to 0.780, which explained 26 percent of the variance while three other items of quality responsiveness loaded on factor 2 with significant loadings of 0.572 to 0.746, which explained 13 percent of the variance and three more items of quality-reliability loaded on factor 3 with significant loadings of 0.515 to 0.696, which explained 10 percent of the variance. Besides, three items of quality-assurance loaded on factor 4 with significant loadings of 0.522 to 0.720, which explained 7 percent of the variance. Finally, two items of quality-tangibility significantly loaded on factor 5. The loadings ranged between 0.693 and 0.781, which explained 6 percent of the variance. However, 28 items with Eigen values of less than 1 and absolute value below 0.50 were dropped and not included in the final factor analysis as they could not load well with the other factors. Thus, the results revealed that market

penetration (26 percent) explained more of financial intermediation, followed by quality-responsiveness (13 percent), quality-reliability (10 percent), quality-assurance (7 percent) and quality tangibility (6 percent), respectively. Overall, the five factors of financial intermediation accounted for 62 percent of the total variance.

Similarly, principal component analysis (PCA) using Varimax with Kaiser Normalization was performed to reduce the number of factors under financial inclusion. The results indicated that 10 items loaded well on the constructs of financial inclusion with a total component of four and KMO of 0.732. Further, only items with absolute values above 0.50 were taken to determine the loadings on each of the factors of financial inclusion. The results of principal component analysis using Varimax with Kaiser Normalization yielded four factors with Eigen values greater than 1. The analysis of the results indicated that three items of welfare loaded on factor 1 with significant loadings between 0.754 and 0.756, which explained 22 percent of the variance. Furthermore, three items of quality also loaded on factor 2 with significant loadings between 0.692 and 0.801, which explained 15 percent of the variance while two other items of usage loaded on factor 3 with significant loadings of 0.674 to 0.788, which explained 12 percent of the variance. Finally, two more items of access significantly loaded on factor 4. The loadings ranged between 0.747 and 0.785, which explained 11 percent of the variance. Overall, the four factors of financial inclusion accounted for 60 percent of the total variance with welfare (22 percent) explaining a larger percentage of the variation, followed by quality (15 percent), usage (12 percent), and access (11 percent), respectively.

4. Findings

4.1. Sample characteristics

The findings from this study revealed that 64 percent of the respondents were male while 36 percent were female households' heads. This implies that majority of the poor households' heads who participated in this study were male. This scenario can be attributed to the existing norms and culture in most African traditional societies including Uganda where families are headed by men.

Similarly, the findings from this study indicated that most (37 percent) of the poor household heads who participated in this study were in the 26-33 years age bracket, and only 5 percent were in the 50+ years age bracket. This means that most poor households are headed by a youthful population in Uganda. This is justified by the fact that a greater section of the Ugandan population comprises of a younger population who have been assigned family responsibilities by the elders (see for e.g. Uganda Bureau of Statistics, 2014).

Furthermore, the findings from this study also showed that 60 percent of the poor household heads who participated in this study were able to read and write while 40 percent could not do so. This means that majority of the poor household heads in rural Uganda can read and write. This can be explained by the Uganda Government effort towards free education offered under the Universal Primary Education (UPE) and Universal Secondary Education

(USE). These educational programmes have promoted access to education by poor households in rural Uganda.

Additionally, the findings from this study indicated that majority (30 percent) of the poor households in rural Uganda are engaged in petty trade of buying and selling of goods. This coincides with the World Banks' argument that most poor households in rural areas in developing countries are engaged in micro small and medium enterprises through which they derive livelihood.

4.2. Correlation analysis

The main purpose of this study is to test for the predictive power of each of the dimensions of financial intermediation on financial inclusion of the poor by microfinance banks in rural sub-Saharan Africa grounded on the financial intermediation theory with data obtained from rural Uganda.

Correlation analysis was performed to test whether the main variables and the constructs were associated. The results of the correlation analysis are shown in Table 2.

The results from the correlation analysis showed that there is a significant and positive relationship between market penetration and financial inclusion ($r = 0.261$, $p \leq 0.01$). This implies that market penetration through financial deepening and outreach promote financial inclusion of the poor by microfinance banks in rural areas in Uganda. Indeed, market penetration through the opening-up of efficient branches by microfinance banks can lead to provision of financial services and products that suit the needs and economic conditions of the poor (Demirguc-Kunt & Klapper, 2012).

Besides, the results from the correlation analysis indicated that quality of financial services is significantly and positively related to financial inclusion ($r = 0.395$, $p \leq 0.01$). This means that provision of quality financial services and products promote financial inclusion of the poor by microfinance banks in rural areas in Uganda. ACCION (2011) suggests that provision of full range of quality basic financial services can results into financial inclusion of the poor, especially in the unbanked communities in developing countries.

Overall, the results from the correlation analysis revealed that there is a significant and positive relationship between financial intermediation and financial inclusion ($r = 0.424$, $p \leq 0.01$). This means that financial intermediation by microfinance banks promote financial inclusion of the poor in rural areas in Uganda. The United Nations (2006) argue that provision of financial services and products by microfinance institutions that use the social dimension strategy has been vital in easing access to and use of financial services by the poor.

Table 2. Correlation analysis between financial intermediation constructs and financial inclusion

Constructs	1	2	3	4
Market penetration (1)	1.000			
Quality of financial services (2)	0.327**	1.000		
Fin. Intermediation (3)	0.649**	0.926**	1.000	
Fin. Inclusion (4)	0.261**	0.395**	0.424**	1

** Correlation is significant at the 0.01 level (2-tailed)
Notes: *n = 400*

4.3. Ordinary least square (OLS) regression analysis

The main purpose of this study is to test for the predictive power of each of the dimensions of financial intermediation on financial inclusion of the poor by microfinance banks in rural sub-Saharan Africa grounded on the financial intermediation theory with data obtained from rural Uganda.

Ordinary least square regression through hierarchical regression analysis was used to test for the individual effect of the dimensions of financial intermediation of market penetration and quality of financial services on financial inclusion (Field, 2005). The results of the ordinary least square hierarchical regression analysis are indicated in Table 3.

The findings from the OLS hierarchical regression analysis indicated that market penetration significantly and positively affect financial inclusion ($\beta = 0.263$, $p<0.01$). This corresponds to hypothesis (*H2*) generated under this study, which states that market penetration significantly and positively affect financial inclusion. Indeed, scholars like Peachey and Roe (2006) suggest that higher branch and ATM penetration by microfinance banks result into increased access to and use of financial services by the poor who live in rural communities in developing countries.

More so, the findings from the OLS hierarchical regression analysis also revealed that quality of financial services significantly and positively affect financial inclusion ($\beta = 0.311$, $p<0.01$). This lends support to hypothesis *(H3)* of this study, which states that quality of financial services significantly and positively affect financial inclusion. Thus, it can be deduced that provision of loans with substantial interest rebates and the promise for larger future loans by microfinance banks can lead to increased access to and use of credit by the poor in rural areas in developing countries (World Bank, 2014).

Finally, the findings from the OLS hierarchical regression analysis showed that both market penetration and quality of financial services as dimensions of financial intermediation combined with control variables of gender, age, ability to read and write, and sources of income explain 22 percent of the variation in financial inclusion of the poor by microfinance banks in rural sub-Saharan Africa with data collected from rural Uganda. This is in line with hypothesis *(H1)* of this study.

Table 3: Ordinary least square hierarchical regresion analysis

Variables	Dependent variable: financial inclusion			
	Model 1	Model 2	Model 3	VIF
Constant	01.881	1.623	1.171	n/a
Control variables:				
Gender	-.048	-.082	-.082	n/a
Age	.060	.017	.010	n/a
Ability to read and write	-.141	-.107	-.090	n/a
Sources of income	.010	.011	.009	n/a
Financial intermediation:				
Market penetration		.263**	.163*	1.064
Quality of financial services			.311**	1.154
R²	.071	.136	.220	
Adjusted R²	.052	.113	.195	
ΔR²	-	.065	.084	
ΔF	3.720*	14.559**	20.776**	
Durbin Watson			1.557	

Significance: **$p<0.01$; * = $p<0.05$
Notes: *n = 400*

4.4. Analysis of variance (ANOVA)

The analysis of variance (ANOVA) was run to determine group differentiation that can be used as evidence for validity of the constructs. The analysis was performed between age of the poor and the constructs of financial intermediation. The rule of thumb is that the *p-values* should not be significant and above 0.05 (*$p>0.05$*) as recommended by Field (2005).

The results from the analysis showed that the poor did not significantly differ in their perceptions that financial intermediation significantly and positively affect financial inclusion based on age. The *p-values* for all the constructs of financial intermediation were not significant and above 0.05 (*$p>0.05$*) as indicated in Table 4.

Table 4: ANOVA for financial intermediation constructs

Constructs		Sum of squares	df	Mean Square	F	Sig.
Market penetration	Between Groups	.646	4	.162	1.571	.184
	Within Groups	20.051	195	.103		
	Total	20.697	199			
Quality of financial services	Between Groups	17.617	4	4.404	1.221	.303
	Within Groups	703.265	195	3.606		
	Total	720.882	199			

5. Discussion

The main purpose of this study is to test for the predictive power of each of the dimensions of financial intermediation on financial inclusion of the poor by microfinance banks in rural sub-Saharan Africa grounded on the financial intermediation theory with data obtained from rural Uganda.

5.1. Financial intermediation and financial Inclusion

The findings from this study revealed that market penetration and quality of financial services combined together as the main dimensions of financial intermediation explain 22 percent of the variation in financial inclusion of the poor in rural sub-Saharan Africa with data collected from rural Uganda. This confirms our hypothesis (*H1*) of this study.

Chandan and Mishra (2010); Kendall et al., (2010); Demirguc-Kunt and Klapper (2012); and Mishkin (2007) observe that market penetration by microfinance banks through efficient branches can lead to provision of quality financial services and products that suit the needs and economic conditions of the poor. The presence of microfinance structures such as offices, branches, personnel, and point of service in rural areas can result into increased access to and use of financial services by the poor (see for e.g. Ergungor, 2010; Kempson et al., 2004).

Armendariz de Aghion and Morduch (2005); La Torre and Vento (2006) further argue that modern microfinance banks can spur financial inclusion because they can provide a wide range of financial services and products such as credits, savings, payment, and insurance to the poor in rural areas.

This finding corresponds to a study by Hermes, Lensink, and Meesters (2011) using data of 435 microfinance institutions from 1997 to 2007, which revealed that microfinance banks provided credit to a large section of the poor who had no access to commercial banks in developing countries.

5.2. Market penetration and financial inclusion

The findings from this study also indicated that market penetration significantly and positively affect financial inclusion of the poor in rural sub-Saharan Africa with data collected from rural Uganda. This is in line with our hypothesis (*H2*) of this study.

Accordingly, scholars like Beck, Demirguc-Kunt, and Peria (2005) show that the opening-up of microfinance bank branches and availability of Automated Teller Machines (ATM) in rural areas can lead to increased access to and use of basic financial services and products by the poor who have largely been excluded by the traditional banking sector.

This finding is consistent with Prina (2013) who found that access to simple and fully liquid bank accounts offered through local bank branches with no opening, maintenance, and withdrawal fees, resulted into financial inclusion of poor households in Nepal. In addition, Sophastienphong and Kulathunga (2008) also discovered that demographic bank and ATM penetration were critical factors in promoting access to and use of basic financial services by the poor in south Asia.

5.3. Quality of financial services and financial inclusion

The findings from this study further showed that quality of financial services significantly and positively affect financial inclusion of the poor in rural sub-Saharan Africa with data collected from rural Uganda. This supports our hypothesis (*H3*) of this study.

Kendall, Mylenko, and Ponce (2010); Demirguc-Kunt and Klapper (2012) observe that financial services and products provided by microfinance banks with convenience, affordability, eligibility, flexibility, reliability, continuity, safety, and dignity of treatment with client protection can result into increased access to and use of financial services by the poor in developing countries.

The World Bank (2014) also postulates that provision of loans with substantial interest rebates and the promise for larger future loans by microfinance banks can lead to increased access to and use of credit by the poor in rural areas in developing countries.

Furthermore, service quality viewed as a major strategic variable in the battle for market share and excellence within the banking sector can also result into increased access to and use of financial services provided by microfinance banks. The microfinance banks can gain more market share and scale-up outreach to rural areas through concentration on customer satisfaction by courting and delighting them based on quality service. This can result into increased access to and use of financial services by the rural-based poor households (Parasuraman et al., 1988; Parasuraman et al., 1985).

This finding corroborates with Ebrahimi and Moghadam (2012) who revealed that assurance and reliability were labeled as the most significant and important factors in the provision of financial services by Iranian banks.

6. Conclusion

The main purpose of this study is to test for the predictive power of each of the dimensions of financial intermediation on financial inclusion of the poor by microfinance banks in rural sub-Saharan Africa grounded on the financial intermediation theory with data obtained from rural Uganda.

The findings from this study showed that market penetration significantly and positively affect financial inclusion. Microfinance banks have been well recognized as a better channel through which the financial sector can reach those at the "*bottom of the pyramid''*. Modern microfinance banks can spur financial inclusion because it provides a wide range of financial services and products such as credits, savings, payment, and insurance to the poor who live in rural areas. Indeed, the microfinance banks collect information about new and past borrowers and monitors loan contracts, which helps to reduce transaction costs associated with adverse selection and moral hazard while lending to the poor. The low transaction costs due to proximity to a local bank branch and availability of ATM service points in rural areas can result into more consumption of financial service like credit by the poor.

In addition, the findings from this study also indicated that quality of financial services significantly and positively affect financial inclusion. Microfinance banks offer quality financial services and products that suit the economic conditions of the poor. The financial products are designed to meet the quality of reliability, assurance, tangibility, empathy, and responsiveness to satisfy the needs of the poor. Particularly, the adoption and use of financial technology and innovation like mobile banking by microfinance banks can lead to increased access to and use of financial services by the unbanked poor population in rural areas. Indeed, use of financial technology increases financial depth and reduces cost of access and use of financial services by the poor who resides in remote and hard-to-reach regions of the world because of its convenience and speed.

Overall, the findings from this study revealed that market penetration and quality of financial services as the main dimensions of financial intermediation explain 22 percent of the variation in financial inclusion of the poor by microfinance banks in rural sub-Saharan Africa with data collected from rural Uganda. Indeed, well functioning microfinance banks with greater outreach that offer high quality financial products and services at affordable costs can increase access to and use of financial services by the poor who are engaged in micro-enterprises. This helps them to generate income, build assets, smooth consumption, and manage household risk so has to leapfrog out of poverty.

7. Policy Implications

The findings from this study may be used as a benchmark in promoting financial inclusion in rural areas, especially through the mainstream financial intermediaries such as commercial banks that have limited presence in rural areas. Governments in sub-Saharan Africa should revise the existing statutory requirements for bank branch opening and operation to attract the mainstream commercial banks to open up new branches to extend financial services to the unbanked communities in rural areas. This could be achieved by revising the requirements downward to support and encourage the commercial banks to go and operate in the most remote areas amidst the high operational cost. Besides, financial intermediaries in the other Tiers could replicate the market penetration strategies and product design adopted by microfinance banks to meet the needs of the unbanked poor population in rural sub-Saharan Africa.

In addition, the results from this study may also help managers of microfinance banks to design appropriate financial products that suit the needs of the poor. The financial products and services should be designed to meet the economic conditions and needs of the poor who lack physical collateral. Specifically, financial products and services that are delivered through social collateral linked to the social capital paradigm could scale-up financial inclusion of the poor who live in rural areas with limited formal bank presence.

Furthermore, the findings from this study can also be used by managers of commercial banks to integrate financial technology and innovation like mobile money into their operation to scale-up outreach, especially in rural areas where they have limited or no branches. The use of mobile money can help them to reduce the costs of setting up bank branches in remote areas. Consequently, this can result into increased provision of financial services to the unbanked *"bottom of the pyramid"* population in rural areas at reduced costs through mobile banking.

More so, the microfinance banks should also further loosen the terms and conditions while extending financial services to the poor. They should limit the documentation and collateral requirements, especially when lending to the poor. This may help to scale-up the level of financial inclusion by microfinance banks in rural areas in sub-Saharan Africa.

Similarly, this study may help policy makers to prescribe favorable regulatory requirements to increase outreach and market penetration by microfinance banks in order to extend financial services to the poor in rural areas. The Central Banks in sub-Saharan Africa should revise their rates downward to allow microfinance banks to charged low interest rates on loans extended to the poor. This can result into increased access to and use of financial credit by the poor who live in rural areas in sub-Saharan Africa.

Finally, the managers of microfinance banks in sub-Saharan Africa should use feasible channels such as bank linkages to scale-up outreach in rural areas where there are limited reach by formal commercial banks. The microfinance banks can form linkages with existing informal financial structures like the VSLAs through which they can extend financial services to the poor.

This can help to financially include the unbanked rural poor households who have no access to formal banks.

8. Limitations and Further Studies

The samples for this study were selected from only poor households located in rural Uganda. Specifically, the data were collected from the poor who are clients of PRIDE (Promotion of Rural Initiatives Development Enterprises) microfinance bank. Therefore, similar future studies may use data collected from other financial intermediaries such as commercial banks and SACCOs.

Besides, this study used only quantitative data to explain the effect of market penetration and quality of financial services on financial inclusion. Thus, future studies may collect qualitative data to obtain in depth analysis of the effect of market penetration and quality of financial services on financial inclusion.

Additionally, this study collected data through a cross-sectional research design. It ignored the use of longitudinal design to collect data over a longer period of time. Accordingly, future studies using data collected through a longitudinal research design could be appropriate.

References

Akerlof, G (1970). 'The market for 'lemons': quality uncertainty and the market mechanism', *Quarterly Journal of Economics*, *84(3),* 488-500.

Allen, F., Arletti, E., Cull, R., Jun Qian, J. "Qj"., Senbet, L., & Valenzuela, P (2011). *Improving Access to Banking:* Evidence from Kenya. This Version: July 22, 2011.

Allen, F. & Santomero, A.M (1996). "The Theory of Financial Intermediaries," Financial Institutions Centre.

Allen, F (1991). "The market for information and the origin of financial intermediation", *Journal of Financial Intermediation, 1(1),* 3-30.

Alliance for Financial Inclusion (2010), "G20 principles for innovative financial inclusion", available at: www.gpfi.org/sites/default/files/documents/G20%20Principles%20for% 20Innovative% 20Financial%20Inclusion%20-%20AFI%20brochure.pdf (accessed 15 July 2017).

Americans for Community Co-operation in Other Nations-ACCION (2011). "Centre for Financial inclusion, financial inclusion: what's the vision? What would it take for Mexico to achieve full inclusion by the year 2020?", ACCION International, Washington, DC.

Ardic, O.P., Heimann, M. & Mylenko, N (2011). "Access to financial services and the financial inclusion agenda around the world. A cross-country analysis with a new data set", WPS 5537, *The World Bank Financial and Private Sector Development Consultative Group to Assist the Poor*, Washington, DC, January.

Arestis, P., Demetriades, P. O. & Luintel, K. (2001). Financial development and economic growth: the role of stock markets. *Journal of Money, Credit, and Banking, 33(1),* 16–41. https://doi.org/10.2307/2673870.

Armendariz de Aghion, B. & Morduch, J (2005). *The Economics of Microfinance*, MIT Press, Cambridge, MA.

Balkenhol, B. & Hudon, M (2011). "Efficiency", in: Armendariz, B. and Labie, M. (eds.), The Handbook of Microfinance, *World Scientific Publishers, 383-396.*

Barajas, A., Beck, T., Belhaj, M., & Naceur, S. B (2020). Financial inclusion: What have we learned so far? What do we have to learn? *IMF Working Paper 20/157.*

Barclay, D. W., Higgins, C., & Thompson, R. (1995). The partial least squares approach to causal modeling: Personal computer adoption and use as illustration. *Technology Studies*, 2(2), 285–309.

Beck, T., Levine, R., & Levkov, A (2010). Big Bad Banks? The Winners and Losers from Bank Deregulation in the United States. *The Journal of Finance*, (65), 1637–1667.

Beck, T., Demirguc-Kunt, A. & Martinez Peria, M.S (2008). "Banking services for everyone? Barriers to bank access and use around the world", *The World Bank Economic Review*, *22(3),* 397-430.

Beck, T., Demirgüç-Kunt, A., & Maksimovic, V (2005). "Financial and Legal Constraints to Firm Growth: Does Size Matter?", *Journal of Finance, 60(1),* 137–177.

Benhabib, J., & Spiegel, M.M (2000). The Role of Financial Development in Growth and Investment. *Journal of Economic Growth, 5(4),* 341-360.

Benston, G.J., & Smith Jr., C.W (1976). A transactions cost approach to the theory of financial intermediation, *Journal of Finance 31(2),* 215-231.

Biosca, O., Lenton, P., & Mosley, P (2014). "Microfinance Non-Financial Services as a Competitive Advantage": The Mexican Case. *Strategic Change, 23(7-8),* 507-511. https://doi. org/10.1002/jsc.1992.

Bolton, P., & Freixas X (2000). "Equity, Bonds and Bank Debt: Capital Structure and Financial Market Equilibrium Under Asymmetric Information". *The Journal of Political Economy, 108(2),* 324-351.

Bryman, A. (2004) Social Research Methods (2nd edition). Oxford: Oxford University Press.

Burlando, A., Canidio, A., & Selby, R (2021). "The Economics of Savings Groups", *International Economic Review,* 62 *(4),* 1569-1598,

Burgess, R. & Pande, R (2005). Do Rural Banks Matter? Evidence from the Indian Social Banking Experiment. *The American Economic Review*, *95(3),* 780-795.

Chakrabarty, K.C (2011). *"Keynote address on financial inclusion",* Mumbai, September, 2011.

Chandan, K. & Mishra, S (2010). "Banking outreach and household level access: analyzing financial inclusion in India", *Unpublished MPhil Thesis*, Indira Gandhi Institute of Development Research (IGIDR), Mumbai.

Churchill, G.A., & Iacobucci, D. (2004). Marketing research: *Methodological foundations*, 9th ed, Thomson South-Western, Ohio.

Cihak, M., Mare, D. S., & Melecky, M (2016). *The nexus of financial inclusion and financial stability: A study of trade-offs and synergies*. Policy research working paper; No. WPS 7722. Washington, D.C. World Bank Group. https://doi.org/10.1596/1813-9450-7722.

Čihák, M., Demirgüç-Kunt, A., Erik, F. & Levine, R (2012). "Benchmarking financial systems around the world", *The World Bank Policy Research Working Paper* No. 6175, The World Bank, Washington, DC.

Claessens, S (2006). "Access to financial services: a review of the issues and public policy objectives", *Oxford Journals*, *21(2),* 207-240.

Clarke, G., R. Cull, R., & Martinez Peria, S (2001). Does Foreign Bank Penetration Reduce Access to Credit in Developing Countries? Evidence from Asking Borrowers. *The World Bank publication, Washington DC.*

Collins, D., Morduch, J., Rutherford, S., & Ruthven, O (2009). Portfolios of the Poor: How the World's Poor Live on Two Dollars a Day. *Princeton University Press.*

Consultative Group to Assist the P00r-CGAP (2013). *"Annual report: advancing financial inclusion to improve the lives of the poor",* The World Bank and Consultative Group to Assist the Poor Publication, Washington, DC.

Creswell, J.W (2003). *Research design*: Qualitative, Quantitative and Mixed Methods Approaches (2nd ed.). University of Nebraska, Lincoln.

Diamond, D.W (1984). "Financial Intermediation and Delegated Monitoring", *The Review of Economic Studies*, 51(3), 393–414, https://doi.org/10.2307/2297430.

Diamond, D.W & Dybvig, P.H (1983). "Bank Runs, Deposit Insurance and Liquidity." *Journal of Political Economy 91(3)* (June).

DeGennaro, R.P (2005). "Market imperfections", *Journal of Financial Transformation*, Vol. 14, August, pp. 107-117.

Demirguç-Kunt, A., Klapper, L., Singer, D., Ansar, S. and Hess, J (2018). The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution, The World Bank, Washington, DC.

Demirguc-Kunt, A. & Klapper, L (2012). "Measuring financial inclusion: the Global Findex database", *Working Paper* No. 6025, The World Bank Development Research Group Policy Research, Washington, DC.

De Vellis, R.F (2003). Scale Development: Theory and Applications (2nd ed.), Sage, Thousand Oaks (2003).

Dutta, S. & Dutta, P (2011). "The effect of literacy and bank penetration on financial inclusion in India: *a statistical analysis*".

Ebrahimi, M.R. & Moghadam, A.H (2012). "A survey to recognize the most important dimensions of the service quality of Iran's commercial banks", *Journal of Management Research*, *4(4),* 131-142.

Ergungor, E.O (2010). "Bank branch presence and access to credit in low to moderate income neighbourhood", *Journal of Money, Credit and Banking*: Blackwell Publishing, *42(7),* 1321-1349.

Field, A (2005). Discovering Statistics Using SPSS, Sage, London.

FinScope Topline Survey (2018). "Topline Findings Report on Financial Access and Use strands". UKaid and FSD Baseline survey, Kampala, Uganda, June 2018.

Financial Sector Deepening Uganda (2016), "Financial inclusion brief", *FSDU and DFID Quarterly Brief*, Kampala, Uganda.

Greenwood, J. & Jovanovic, B (1990). Financial development, growth, and the distribution of income. *Journal of political Economy, 98(5), 1076-1107.* DOI: 10.1086/261720.

Gurley, J. & Shaw, E (1960). *Money in a Theory of Finance* (Washington, D.C.: Brookings Institution, 1960).

Hawkins, P (2006). "Financial access and financial stability", in Bank for International Settlements, Central banks and the challenge of development, pp 65–79, www.bis.org /events/cbcd06.pdf.

Hermes, N., Lensink, R., & Meesters, A (2011). "Outreach and Efficiency of Microfinance Institutions", *World Development, Elsevier, 39(6),* 938-948.

Johns, R (2010). Likert items and scales. Retrieved from Survey Question Bank website: http://www.surveynet.ac.uk/sqb/datacollection/likertfactsheet.pdf.

Johnson, S. & Nino-Zarazua, M (2009). 'Financial access and exclusion in Kenya and Uganda', Bath Papers in International Development, *Working Paper No.1*, February 2009, Centre for Development Studies, University of Bath.

Karlan, D, & Morduch, J (2009). "Access to Finance". In Dani Rodrik and Mark Rosenzweig, eds., *Handbook of Development Economics, 5* Amsterdam: Elsevier, 4704 - 4784.

Kendall, J., Mylenko, N. & Ponce, A (2010). "Measuring financial access around the world", *Policy Research Working Paper* No. 5253, The World Bank Financial and Private Sector Development Financial Access Team, The World Bank, Washington, DC.

Khandker, S.R (2000). Savings, informal borrowing and microfinance. *The Bangladesh Development Studies 26 (2/3),* 49–78.

King, R.G. & Levine, R (1993): "Finance, entrepreneurship, and growth - theory and evidence", *Journal of Monetary Economics, 32(3),* 513-542.

Klapper, L., El-Zoghbi, M. & Hess, J (2016). "Achieving the Sustainable Development Goals – The Role of Financial Inclusion', CGAP Working Paper. https://www.unsgsa.org/files/3114/6489/8605/sdgs_paper_final_003.pdf (accessed 25 June 2020).

La Torre, M. & Vento, G.A (2006). *Microfinance*, Basingstoke: Palgrave Macmillan.

Leland*, H.E. & David H. Pyle, *D.H* (1977). Papers and Proceedings of the Thirty-Fifth Annual Meeting of the American Finance Association, Atlantic City, New Jersey, September 16-18, 1976. *The Journal of Finance*, *32(2),* 371-387.

Likert, R (1932). A technique for the measurement of attitudes, *Archives of Psychology*, *140(1),* 44-53.

Mathews, K. & Thompson, J (2008). *The Economics of Banking*, Wiley, Chichester.

Menkhoff, L (2000). "Bad banking in Thailand? An empirical analysis of macro indicators", *Journal of Development Studies*, *36(5),* 135-168, available at: https://doi.org/10.1080/00220380008422649.

Mishkin, F (2007). "Housing and monetary transmission mechanism: *Federal reserve board finance and economics discussion series*", No. 40, Federal Reserve Bank of Kansas City, Jackson, KS, available at: https://doi.org/10.3386/w13518.

Nissanke, M. & Stein, H (2003). "Financial globalization and economic development: toward an institutional foundation", *Eastern Economic Review*, *29(2),* 287-308.

Okello Candiya Bongomin, G., Francis, Y. & Ntayi, J.M (2021). "Reimaging the mobile money ecosystem and financial inclusion of MSMEs in Uganda: Hedonic motivation as mediator", *International Journal of Social Economics*, 48(11), 1608-1628. https://doi.org/10.1108/IJSE-09-2019-0555.

Okello Candiya Bongomin, G., Woldie, A., & Wakibi, A (2020). "Microfinance accessibility, social cohesion and survival of women MSMEs in post-war communities in sub-Saharan Africa: Lessons from Northern Uganda", *Journal of Small Business and Enterprise Development, 27(5),* 749-774.

Okello Candiya Bongomin, G., Ntayi, J.M., Munene, J.C., & Malinga, C.A (2017). "Financial intermediation and financial inclusion of poor households: Mediating role of social networks in rural Uganda. *Cogent Economics & Finance (2017), (5): 1362184.*

Okello Candiya Bongomin, G (2016). "Financial inclusion of the poor in Uganda". *Unpublished PhD Thesis*. Makerere University Kampala. December, 2016.

Otero, M (1999). Bringing Development Back into Microfinance. *Journal of Microfinance*, *1(1),* 8-19.

Parasuraman, A., Zeithaml, V.A. & Berry, L.L (1988). "SERVQUAL: a multiple-item scale for measuring consumer perceptions of service quality", *Journal of Retailing*, *64(1),* 12-40.

Parasuraman, A., Zeithaml, V.A. & Berry, L.L (1985). "A conceptual model of services quality and its implication for future research", *Journal of Marketing*, *49(4),* 41-50.

Peachey, S., & Roe, A (2006). "Access to Finance, Measuring the Contribution of Savings Banks" World Bank Savings Institute. http://www.dartmouth.edu/~alusardi/Lusardi_Mitchell_march06.pdf.

Philip, G. & Hazlett, S.A (1997). "The measurement of service quality: a new P-C-P attributes model", *International Journal of Quality & Reliability Management*, *14(3),* 260-286.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y. & Podsakoff, N.P (2003). "Common method biases in behavioural research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, *88(5),* 879-903.

Podsakoff, P. M., MacKenzie, S. B., Paine, J. B. & Bachrach, D. G (2000). Organizational citizenship behavior: A critical review of the theoretical and empirical literature and suggestions for future research. *Journal of Management*, *26(3),* 513–563.

Prahalad, C.K. (2005). Fortune at the Bottom of the Pyramid: Eradicating Poverty through Profits. Wharton School Publishing, Philadelphia, US.

Prina, S (2013). "Banking the Poor via Savings Accounts: Evidence from a Field Experiment". Case Western Reserve University, Weatherhead School of Management, 11119 Bellflower Road, room 273, Cleveland, OH 44106, United States.

Rau, N (2004). "Financial intermediation and access to finance in African countries South of the Sahara", *forum paper, paper presented at the African Development and Poverty Reduction:* The Macro-Micro Linkages, Lord Charles Hotel, Somerset West, October 13-15.

Sarma, M (2010). "Index of financial inclusion", *Discussion Papers No. 10-05 in Economics*, Centre for International Trade and Development, School of International Studies, Jawaharlal Nehru University, Nehru, November.

Scholtens, B & van Wensveen, D (2000). "A critique on the theory of financial intermediation", *Journal of Banking & Finance 24 (8),* 1243-1251.

Sophastienphong, K. & Kulathunga, A (2008). Getting finance in South Asia 2009: indicators and analysis of the commercial banking sector. The World Bank, Washington DC.

Stiglitz J.E. & Greenwald, B (2003). Towards a New Paradigm in Monetary Economics, Cambridge University Press.

Suri, T. & Jack, W. (2016), "The long-run poverty and gender impacts of mobile money", *Science, 354(6317),* 1288-1292.

Uganda Bureau of Statistics (2012). National Household Survey, *Uganda Bureau of Statistics, National Household Statistical Forecast Brief*, The Government of Uganda, Kampala.

United Nations (2006). *Building Inclusive Financial Sectors for Development, Department of Economic and Social Affairs, (also known as Blue Book),* Geneva.

Wachtel, P (2001). ''Growth and Finance: What do we know and how do we know it?'' *International Finance,* Autumn.

World Bank (2014). "A survey on access to and use of financial services in 152 countries around the world", *The World Bank Global Financial Development Report on Financial Inclusion.* The 2014 Global Financial (Global Findex) Database, The World Bank, Washington, DC.

World Bank (2008). *Banking the Poor: Measuring Banking Access in 54 Economies*. The World Bank, Washington, DC.

World Bank (2008). Finance for All? *Policies and Pitfalls in Expanding Access*. The World Bank, Washington DC.

Yamane, T (1973). Statistics: *An Introductory Analysis*, Harper & Row, New York, NY.

Yaron, J., Benjamin, M.P. & Piprek, G.L (1997). "Rural finance: issue, design, and best practices", *Environmentally and Socially Sustainable Development Studies and Monograph Series 14*, The World Bank, Washington, DC.

Yunus, M (2005). *Banker to the Poor: Micro-lending and the Battle Against World Poverty*, Public Affairs, New York, NY.