Exploring the mediating role of social capital in the relationship between financial intermediation and financial inclusion in rural Uganda

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Abstract

Purpose – The purpose of this paper is to establish the mediating role of social capital in the relationship between financial intermediation and financial inclusion in rural Uganda.

Design/methodology/approach – The current study used cross-sectional research design and a semi-structured questionnaire was used to collect data for this study. The study applied structural equation modeling through bootstrap approach in AMOS to establish the mediating role of social capital in the relationship between financial intermediation and financial inclusion.

Findings – The results indicated that social capital significantly mediates the relationship between financial intermediation and financial inclusion in rural Uganda. Therefore, it can be deduced that social capital among the poor play an important role in promoting financial intermediation for improved financial inclusion in rural Uganda.

Research limitations/implications – Although the sample was large, it may not be generalized to other segments of the population. Data were collected from only poor households located in rural Uganda. Besides, the study was cross-sectional, thus, limiting efforts in investigating certain characteristics of the sample over time. Perhaps future studies could adopt the use of longitudinal research design.

Practical implications – Financial institutions such as banks should rely on social capital as a substitute for physical collateral in order to promote financial inclusion, especially among the poor in rural Uganda.

Originality/value – This study provides empirical evidence on phenomenon not studied in rural areas in Sub-Saharan Africa where the poor use social capital embedded in customs and norms for doing business. The results highlight the importance of social capital in mediating the relationship between financial intermediation and financial inclusion of the poor in rural Uganda.

Keywords Financial inclusion, Social capital, Structural equation modelling, Mediation effect, Financial intermediation, Rural Uganda

Paper type Research paper

Introduction

Development agencies such as the World Bank, G20, Bill & Melinda Gates foundation, and UNDP among others, suggest that in order to end poverty as stipulated under the new sustainable development goals agenda, there is a great need for full financial inclusion, especially in developing countries.

Existing evidence shows that appropriate financial services can help to improve households' welfare and spur small enterprise activity, especially among the poor in developing countries. According to Demirguc-Kunt and Klapper (2012) and Ardic *et al.* (2011), provision of

full range of basic financial services such as savings, payments and remittances, loans, and micro-insurance to the poor economically and socially empowers them to move out of poverty.

Thus, in a bid to scale-up inclusive economic growth, scholars and promoters of financial inclusion such as Beck *et al.* (2009), Sarma (2010), Kendall *et al.* (2010), Thorat (2007), the World Bank (2014), CGAP (2014), United Nations (2006) argue that efforts should be directed toward the supply and demand side strategies. The supply-side strategies advocate for provision of basic financial services through the different channels that can reach a large number of financially excluded poor, while the demand-side strategies pay more attention to the usage of financial services by the poor.

Drawing from the supply-side perspective, CGAP (2013) observes that deeper financial intermediation can lead to increased financial inclusion of the poor in underbanked economies. This is justified by the fact that the poor also save, borrow, and make payments as stipulated by ACCION (2011). Indeed, Mishkin (2007) contends that opening up of numerous bank branches and entering of other financial service providers in the financial market can pave way for provision of varieties of financial products that suit the economic status of the poor. Furthermore, Chandan and Mishra (2010), Ergungor (2010), Kempson *et al.* (2004) also postulate that the presence of financial institutions' structures such as offices, branches, and personnel can result into increased provision of financial services to the excluded poor.

However, contextually, FinScope (2013) and Financial Sector Deepening Uganda (2016) surveys reveal that most poor households living in rural Uganda do not have access to and use of financial services. The results indicate that most formal financial institutions are located in urban cities with only 14 percent presence in rural areas, thus, limiting access and use of financial services by the poor. This has affected efforts toward reducing poverty, which has remained stagnant at 67 percent in rural Uganda (Uganda Bureau of Statistics, 2016). Additionally, Woolcock (2001) and Woolcock and Narayan (2000) argue that financial intermediaries such as banks have limited presence in rural areas because the poor do not have physical collateral to act as security in lending.

Conversely, scholars like Yunus (2005), Armendariz de Aghion and Morduch (2005), Atemnkeng (2009), Karlan (2007), Cassar *et al.* (2007), Besley and Coate (1995) observe that financial inclusion initiatives such as the microfinance movements have predominantly relied on social capital to extend financial services to the poor. Fukuyama (2001) contends that social capital play a critical role in reducing transaction costs associated with coordination mechanism such as contracts through acquisition of information, which is costly in lending. Indeed, Morduch (1999), Woolcock (1999), Karlan (2003) suggest that social capital act as a screening device and monitoring tool used to select clients in the lending process. This reduces the problem of adverse selection and moral hazard arising from information asymmetry. In addition, social capital also provides a substitute in terms of social collateral and low-cost alternatives for lenders, thus, increasing the scope of financial inclusion.

Diverse studies such as Mishkin (2007), Chandan and Mishra (2010), Ergungor (2010), Kempson *et al.* (2004) have advocated for the importance of financial intermediation in promoting financial inclusion in developing countries. Contextually, Heikkilä *et al.* (2009) found that presence of formal, informal, and semi-formal financial institutions promote access to basic financial services such as credit in rural Uganda. However, a close scrutiny of these studies indicate that they ignore the mediating role of social capital in the relationship between financial intermediation and financial inclusion of the poor in rural Uganda. Yet microfinance scholars suggest that social capital of the poor act as social collateral that substitute physical collateral required by banks in lending.

Therefore, the main purpose of our paper is to establish the mediating role of social capital in the relationship between financial intermediation and financial inclusion of the poor in rural Uganda.

Literature review and hypotheses development

Financial intermediation and financial inclusion: mediating role of social capital

According to Mathews and Thompson (2008), financial intermediation is the process by which a financial intermediary collects deposit from the surplus units and lends them to the deficit units. The role of financial intermediaries is to channel funds from lenders to borrowers by intermediating between them. Thus, financial intermediaries are firms that borrow from consumer/savers and lend to individuals/companies that need resources for investment (Gorton and Winton, 2002).

The World Bank (2013) refers to financial inclusion as the universal access to a wide range of financial services by individuals and SMEs at a reasonable cost provided by responsible and sustainable financial institutions. Similarly, ACCION (2011) defines it as a state in which all people who can use financial services, including the poor, have access to a full suite of quality financial services, provided at affordable prices, in a convenient manner, and with dignity for the clients. Besides, Chakrabarty (2011) describes it 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 weaker sections and low income groups in particular at an affordable cost in a fair and transparent manner by mainstream institutional players."

Thus, in the process of intermediation, financial intermediaries such as banks acquire information that is not readily available in the financial market from the surplus and deficit units who would have transacted directly, and use it to borrow from the surplus units and lend to the deficit units (DeGennaro, 2005; Ramakrishnan and Thakor, 1984; Boyd and Prescott, 1986). Indeed, banks as financial intermediaries pool funds from surplus units and lend to deficit units such as the poor in the process of scaling up financial inclusion (Nissanke and Stein, 2003; Stiglitz and Greenwald, 2003; Menkhoff, 2000).

However, in the process of intermediation between the surplus and deficit units, banks face the problem of information asymmetry, which leads to adverse selection and moral hazard in lending. Therefore, in order to reduce the problem of information asymmetry in lending, social capital in the form of interpersonal trust and informal networks helps banks to separate good borrowers from the risky borrowers. Bourdieu (1986) defines social capital as "those actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition, or in other words, to membership in a group." Thus, the presence of interpersonal trust and informal networks among the poor premised on existing norms, act as social collateral and screening tools in selecting potential clients, thereby, promoting access to financial services (Heikkilä *et al.*, 2009). This is supported by Coleman (1993) who contends that social capital resulting from a person's action is shaped by norms, which promotes interpersonal trust based on obligations and expectations (reciprocity).

Accordingly, the World Bank (2002) observes that most poor households who live in rural areas rely more on their social capital guided by organized norms/informal rules for economic exchange as opposed to the urban poor who have weak social capital embedded in informal networks and trust. Atemnkeng (2009) states that the poor use their social capital inform of interpersonal and generalized trust and social sanction in informal networks to substitute and guarantee the loans and its future repayment. Additionally, de Aghion and Gollier (2000) also argue that banks use local networks of information among the poor to identify good borrowers and their ability in repaying the loans (see also Ghatak, 2000; Sadoulet, 1998). Indeed, banks use the available information in screening and selecting the

rural poor to whom it extends financial services, thus, widening the scope of financial inclusion. Therefore, from the foregoing, the following hypotheses are derived:

H1. There is a significant relationship between financial intermediation and financial inclusion.

H2. There is a mediation effect of social capital in the relationship between financial intermediation and financial inclusion.

Financial intermediation and social capital

Scholars such as Von Pischke (1991) and Karlan (2007) suggest that access to financial services, especially credit/loans by the poor, is primarily social and it depends entirely on believing and trust between the financial intermediary and the poor. Besides, Edgcomb and Barton (1998) argue that in the process of provision of financial services like loans, financial intermediaries are faced with the problem of adverse selection and moral hazards resulting from the availability of incomplete information in the financial market. Thus, financial intermediaries resort to demanding collateral that guarantee the services it provides such as loans that are sought by the poor in order to ensure future recovery. However, Atemnkeng (2009) observes that since the poor lack physical collateral, they can use social collateral inform of social capital to access loans from financial intermediaries.

Proponents of social capital such as Putnam (1993), Coleman (1988), Bourdieu (1983/ 1986), and Portes (1998) argue that it is a resource (tangible and intangible) that promotes economic development among social actors embedded in social structures through reciprocity, trust, and cooperation. Therefore, Grootaert and Bastelaer (2002) assert that social capital through structural and cognitive mechanisms, which facilitates information sharing, collective action, and decision making, can act as a substitute for lack of physical collateral by the poor. Indeed, Rhyne and Otero (1994) contend that the poor rely on their social capital through which they can develop a substitute for the lack of physical collateral in order to access loans from financial intermediaries.

Contextually, Munene *et al.* (2005) observe that poor individuals in Uganda use their social capital, which facilitates collective action for mutual benefits for all. A study by Heikkilä *et al.* (2009) revealed that poor households in Uganda relied on their social capital guided by cultural norms of punishment and sanctions to achieve economic benefits such as access to credit from formal, semi-formal, and informal financial intermediaries. Hence, here we hypothesize that:

H3. There is a significant relationship between financial intermediation and social capital.

Social capital and financial inclusion

The importance of social capital (vertical and horizontal social networks) in influencing financial development has been evidenced in studies by different scholars. For example, Guiso *et al.* (2004) found that social capital is vital in facilitating economic transaction and financial development, particularly in low-income communities that are relatively homogeneous and close-knit. Coleman (1990), Fukuyama (2001) and Spagnolo (1999) observe that the level of social capital of a community enhances interpersonal trust among the interacting members that reduces transaction cost and opportunism associated with coordination mechanism.

Thus, Karlan (2001) and van Bastelaer (2000a, b) suggest that social capital embedded in trust is considered stronger and favorable for obtaining credit. Hence, for the poor who do not own physical collateral, they use interpersonal and generalized trust and cooperation to

substitute for lack of collateral in order to guarantee the loans and its future repayment. Indeed, social capital becomes a valuable asset of the people who have no collateral to get loans from banks since it enhances the contribution of members in sharing and being responsible for the group loans as suggested by Chloupkova and Bjørnskov (2002).

A study by Khanh (2011) in rural Vietnam found that social capital and networks of relationships were core issues in access to financial credit for poverty reduction in rural areas. Furthermore, Besley and Coate (1995) also contend that sanction in group lending reduces moral hazard of repayment and plays an important role in peer monitoring among the poor.

Therefore, it can be concluded that social capital inform of trust and networks help the poor to select fellow members with whom they can jointly access loans from banks (Ghatak, 1999). This is because members in the networks will exploit information known to each other but not to banks to be used to screen out bad colleagues. Based on this argument, we hypothesize that:

H4. There is a significant relationship between social capital and financial inclusion.

Drawing from our literature review above, a simple model was developed to guide this study as shown in Figure 1.

Research method
Study design, population, and sample
The study adopted a quantitative cross-sectional survey design. The population consisted of poor households in rural Uganda with Mukono district as the main area for the study. Our choice of poor households is justified by ACCION (2011) assertion that the poor also do save, borrow, and make payments throughout their lives. According to Ardic *et al.* (2011), providing poor households with access to full financial services such as payments and remittances, savings, loans (credits), and micro-insurance economically and socially empowers and helps them to come out of poverty. Therefore, the main focus of this study was on poor households in rural Uganda. The study was carried out based on samples selected from poor households located in Mukono district. The sample size for the study was determined by a formula derived from Yamane (1973) and used by scholars such as Mafabi *et al.* (2012) in previous studies in a similar environment as the current study. From the formula by Yamane, we computed our sample for the study as shown in the following:

$$n = (N/1 + N(e)^2)$$

where n is the sample size; N the total population; and e the tolerable error (0.05 or 95 percent).
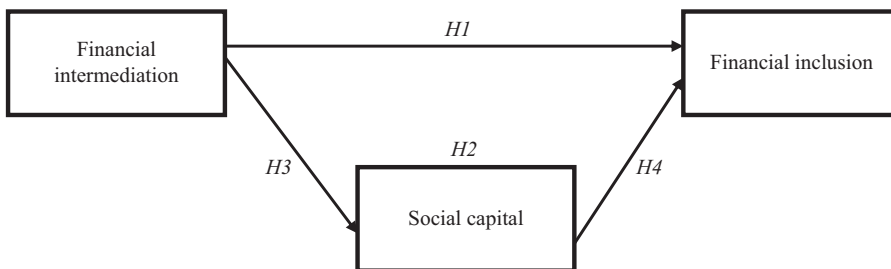

Figure 1.
Showing the mediation effect of social capital in the relationship between financial intermediation and financial inclusion

Source: Developed by authors

Therefore:

$$n = \left(N/1 + N(e)^2\right)$$

$$n = \left(400/1 + 400(0.05)^2\right)$$

$$n = 200$$

Therefore, we randomly selected a total sample of 200 poor households from a population of 400 poor households for the study. The heads of the poor households were chosen as our main unit of inquiry. This was because they were in a better position to provide vital information about the household status, characteristics, and behaviors. The choice of households' heads as the main unit of inquiry was based on the recommendation by Uganda Bureau of Statistics (2012).

To get to the actual respondents (household heads), we got two research assistants to liaise with local community leaders such as civic workers and local council members (LCs) who acted as the contact point. Questionnaires were administered by the research assistant through the guidance of the community leaders. The research assistants selected from each of the four regions were used in data collection to solve the problem of language barrier. Only one response was expected from each of the 200 households selected for the study. Therefore, a total of 200 responses were received back from our targeted households, thus, accounting for 100 percent response rate. This is justified by the fact that the questionnaires were directly administered and scored by research assistants with the help of the local community leaders. This confirmed that all our instruments distributed were usable.

Measures of variables
Financial intermediation. Dutta and Dutta (2011) used penetration level to measure financial intermediation by banks in improving access to financial services in India. Besides, Yaron *et al.* (1997) used quality of services provided by financial institutions such as banks to measure financial intermediation. In this study, we adopted the dimensions of penetration level and quality of services to measure financial intermediation. A five-point Likert scale of strongly agree (5), agree (4), not sure (3), disagree (2), and strongly disagree (1) was adopted and used in the questionnaire. Both reliability and validity were tested and the results were above the cut-off points recommended by Nunnally and Bernstein (1994) and Amin (2005). The reliability had α coefficient $(\alpha) = 0.883$ and construct validity explained by total variance of 61.2 percent.

Social capital. Different views (Bourdieu, 1986; Putnam, 1993; Coleman, 1988; Portes, 1998) have been advanced to conceptualize social capital. According to Bourdieu (1986), social capital is "those actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition, or in other words, to membership in a group." Putnam (1993) refers to it as "features of social organization such as networks of individuals or households, norms, and social trust that facilitate coordination and cooperation (vertical structures)." While Coleman (1988, p. 598) conceptualizes it as "a variety of different entities (which) all consist of some aspect of social structure, and (which) facilitate certain actions of actors–whether personal or corporate actors–within the structure." Coleman's conceptualization includes both the horizontal and vertical structures that result in social capital. Therefore, the measure of social capital was theoretically grounded on relational, structural, and cognitive social capital as stipulated by Putnam (1993), Coleman (1988), Bourdieu (1986), Portes (1998), Munene *et al.* (2005), Heikkilä *et al.* (2009), Grootaert (2001). Thus, the dimensions of trust, bonding and bridging, and collective action were adopted to measure social capital.

The results from reliability test had α coefficient $(\alpha) = 0.774$ and construct validity explained by total variance of 61.4 percent.

Financial inclusion. In the process of developing our scale for measuring financial inclusion, we made further reference to Ardic *et al.* (2011), Kendall *et al.* (2010), Beck *et al.* (2008) who recommends financial inclusion pillars and dimensions. In our study, we therefore adopted and developed our scales on the dimensions of access, quality, usage, and welfare. Respondents were asked based on a five-point Likert scale of strongly agree (5), agree (4), not sure (3), disagree (2), and strongly disagree (1). The scales were tested for reliability $(\alpha) = 0.844$ and validity (total variance explained by four convergent factors accounting for a variance of 60.2 percent), which were above the cut-off point of 0.70 as stipulated by Nunnally and Bernstein (1994), Sekaran (2000), and Amin (2005).

Data collection. Based on our sampling design, with the help of the research assistants we identified civic workers and LCs to act as our contact point in the community to ensure that all questionnaires were answered. In addition, this was also to allow the researcher to collect data from all the selected households. Due to the nature and magnitude of the research scope, the researcher employed four research assistants in data collection. Data were collected using semi-structured questionnaires that were administered directly to the respondents. We collected our data within a period of three months. All the 200 households selected for the study responded, therefore, giving us 100 percent response rate in the study.

Data management and processing. This involved checking for errors, finding errors in the data file, and correcting the existing errors in the data file (Field, 2005; Pallant, 2005; Hair *et al.*, 2010).

Data screening was carried out to check for errors arising from incorrect data entry, out of range values (outliers), missing values, and normality. To determine the items with the above anomalies, descriptive statistics using Statistical Package for Social Sciences (SPSS 19) were generated for all the items. Each item was presented in the form of frequency distribution table. By determining output from frequencies generated, out of range numbers and missing values within the data were displayed under each item.

Missing data analysis was also carried out to determine the information not available for particular cases for which other information were available (Hair *et al.*, 2010). These cases might have occurred because some responses were not answered in our study. According to Tabachnick and Fidell (2001), missing data analysis involve evaluating the amount of missing data and the pattern of the missing data. Thus, missing values analysis that involved evaluating the amount of missing values and the patterns of the missing data were performed on our data.

The pattern of missing values in our data was generated. Test for the degree of randomness to check whether the missing data were distributed randomly across the cases and the variables was performed. The degree of missing data at random or non-random based on the p-value was determined using MCAR test and by checking the expectation-maximization (EM) estimation. EM estimation group cases with missing values and without missing values using the likelihood estimates in parametric models. According to the rule of thumb, the Little's MCAR test significant at 1-5 percent was considered manageable. However, 3 percent cut-off point was considered more favorable (Field, 2005). Our data were found to be missing at completely random (MCAR) and less than 5 percent, which was acceptable for replacement. Therefore, we adopted linear interpolation to replace our missing values as recommended by Field (2005).

Furthermore, in order to eliminate type I and type II errors in our study, we also tested for common methods bias using Harman's single-factor test. Podsakoff *et al.* (2003) proposed the use of Harman's one-factor test to check for the presence of common methods variance by entering the variables into a factor analysis model. By performing factor analysis on our

mediating variable (social capital) as a single factor, the variable yielded a total of 12 items with eigenvalues greater than 1, accounting for 61 percent of the total variances. None of its constructs emerged dominant implying that common methods variance was not a problem in the study.

Test for mediating effect using SEM bootstrap approach. Structural equation modeling through bootstrap was used to establish the mediating role of social capital in the relationship between financial intermediation and financial inclusion in rural Uganda. According to Hair *et al.* (2010), SEM is a multivariate technique combining aspects of factor analysis and multiple regressions that enables the researcher to simultaneously examine a series of interrelated dependence relationships among the measured variables and latent constructs (variates) as well as between several latent constructs.

Indeed, structural equation modeling can examine a series of dependence relationships simultaneously. It is particularly useful in testing theories that contain multiple equations involving dependence relationships. SEM is unique because it accommodates more than one (multiple) dependent variable in a relationship, which is not possible through other multivariate techniques such as correlations and regressions.

SEM through bootstrap approach was adopted because of its several strengths over other multivariate analysis techniques such as correlation and regression analyses. First, SEM bootstrapping is more robust to violation of assumptions of normality. Second, SEM program can be used to do confirmatory factor analysis that includes latent variables with multiple indicators. Therefore, under SEM mediation, two effects are tested. These include the direct effect of independent variable on the outcome variable, and the mediated effect of an independent variable through a mediator on the outcome variable.

Thus, in using SEM to establish the mediation effect, Cohen and Cohen (1983) recommend two steps that must be satisfied: the researcher should establish that the necessary individual relationships are statistically significant by generating a measurement model; and the researcher should estimate an initial model with only the direct effect between the predictor variable and outcome variable, and then estimate a second model adding in the mediating variable and the two additional path estimates from the predictor and mediator to the outcome variable by generating the SEM model.

Hair *et al.* (2010) argue that a condition of full mediation is achieved when the direct effect becomes non-significant in the presence of the indirect effect, whereas partial mediation occurs when the direct effect is reduced, but still remains significant. Hair *et al.* (2010) recommend existence of excellent model-fit-indices between the competing models (direct and indirect models). Therefore, they suggest that the researcher should report at least one incremental index and one absolute index in addition to the χ^2 value and the associated degrees of freedom because using a single GOF index even with a relatively high cut-off value is no better than simply using the χ^2 GOF test alone. Thus, reporting the χ^2 value and degrees of freedom, the comparative fit index (CFI) or Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA) will usually provide sufficient unique information to evaluate a model.

Besides, Preacher and Hayes (2010) argue that full mediation exist if the *p*-value is significant at $p < 0.05$ in the SEM mediated model.

Thus, use of AMOS through bootstrapping was adopted and a three-variable path diagram including error terms for the endogenous mediator, dependent variables, and bootstrap estimates of indirect, direct, and total effects through the AMOS output sub-menu were run. The SEM bootstrap results for the mediating role of social capital in the relationship between financial intermediation and financial inclusion in rural Uganda are indicated in the results and discussion section.

Results and discussion

For the purpose of understanding the characteristics of the different households' heads who participated in the study, they were categorized based on age, gender, members in households, and ability to read and write as shown in Tables I and II.

The results in Tables I and II indicated that majority (56 percent) of the households' heads who participated in our study were male, while 44 percent were female. In reference to the age of the households' heads, the results revealed that most (35.5 percent) were in the 26-33 years age bracket, whereas 31 percent were in the 34-41 years age bracket, followed by 14 percent in 42-49 years age bracket, 13.5 percent in 18-25 years age bracket, and 6.0 percent in 50+ years age bracket.

Further analysis of the results showed that 42.5 percent of the households had five and fewer members and 42 percent had six to ten members while 15.5 percent had more than ten members. This means that most households included in the study had between six to ten members. This number is typical of poor households in rural areas. Additionally, the results also showed that majority (79.5 percent) of the households' heads who responded in our study were able to read and write and only 20.5 percent could not read and write. This implies that most poor households were headed by literate individuals.

More so, analysis to indicate whether there was association or relationship between the variables under study (Hair *et al.*, 2010; Field, 2005) as hypothesized in literature review was established using zero-order correlations as shown in Table III.

Financial intermediation and financial inclusion

The study tested hypothesis (*H1*) to establish whether a relationship exist between financial intermediation and financial inclusion. The results revealed that there is a significant and

Gender	f	%	Age	f	%
Male	112	56.0	18-25 years	27	13.5
Female	88	44.0	26-33 years	71	35.5
			34-41 years	62	31.0
			42-49 years	28	14.0
			50+ years	12	6.0

Table I.
Showing sample characteristics of gender and age

Members in households	f	%	Ability to read and write	f	%
5 or less	85	42.5	Yes	159	20.5
6-10	84	42.0	No	41	79.5
More than 10	31	15.5			

Table II.
Showing sample characteristics of household location and ability to read and write

	Mean	SD	1	2	3
Financial intermediation (1)	3.62	0.690	–		
Social capital (2)	3.59	0.651	0.375**	–	
Financial inclusion (3)	3.70	0.576	0.439**	0.524**	–
Note: **p-value < 0.01 (two tailed)					

Table III.
Zero-order correlation between financial intermediation, social capital, and financial inclusion

positive ($r = 0.439$, p-value < 0.01) relationship between financial intermediation and financial inclusion based on guidelines stipulated by Cohen (1988) and Pallant (2005). This confirms the hypothesis that there is a significant relationship between financial intermediation and financial inclusion. This means that financial intermediation is related to financial inclusion of poor households. The results indicated that financial intermediaries such as banks acquire information that is not readily available from the surplus and deficit units and use it to borrow from the surplus units and lend to the deficit units (DeGennaro, 2005). Banks as an intermediary pools fund from surplus units and lend to deficit units such as the poor (Nissanke and Stein, 2003). Thus, provision of basic financial services such as savings, credit, payments, and insurance will help the poor to move out of poverty through economic and social empowerment by enabling them to generate income, build assets, smoothen consumption, and manage risk. Indeed, this will result into improvement in the economic status of the poor in rural areas in Uganda who have been largely excluded from access to and use of formal financial services.

Financial intermediation and social capital
Besides, the results indicated that there is a significant and positive ($r = 0.375$, p-value < 0.01) relationship between financial intermediation and social capital. The finding supports the hypothesis (*H3*) that there is a significant relationship between financial intermediation and social capital. This finding is in line with Von Pischke (1991), Karlan (2007) who emphasized that access to financial services, especially credit/loans by the poor, is primarily social and it depends entirely on believe and trust between the financial intermediary and the poor. Thus, Rhyne and Otero (1994) argued that since the poor lack physical collateral, they form self-help groups such as the solidarity groups through which members can develop a substitute for the lack of collateral in order to access financial services such as loans from the financial intermediaries. de Aghion and Gollier (2000) argue that banks use local networks of information among the poor to identify good borrowers and their ability in repaying the loans (see also Ghatak, 2000; Sadoulet, 1998).

Social capital and financial inclusion
The findings from the study further indicated that there is a significant and positive ($r = 0.524$, p-value < 0.01) relationship between social capital and financial inclusion. This supports the hypothesis (*H4*) of the study, which states that there is a significant relationship between social capital and financial inclusion. Indeed, when providing financial services such as loans, banks always require assurance for future repayment by asking for collateral from the poor. The poor, especially in developing countries like Uganda, lack physical collateral to secure the loans. Thus, they use their social capital inform of interpersonal and generalized trust and social sanction to substitute and guarantee the loans and its future repayment including access and use of other financial services from the bank (Atemnkeng, 2009).

Test for mediating effect using SEM bootstrap approach
The purpose of this paper is to establish the mediating role of social capital in the relationship between financial intermediation and financial inclusion in rural Uganda. The SEM results were generated by use of AMOS through bootstrapping and a three-variable path diagram including error terms for the endogenous mediator, dependent variables, and bootstrap estimates of indirect, direct, and total effects through the AMOS output sub-menu were run.

However, before generating the final SEM model, CFA measurement models were generated for each of the variables under study. The CFA results for financial intermediation revealed that the standardized parameter estimates of the initial measurement model were all

significant ($p < 0.001$) and the model provided a fairly perfect model fit statistics for the construct measures between the model and the observed data. Indeed, this was justified by a $\chi^2 = 80.588$ (degrees of freedom $= 67$, probability level $= 0.123$). The incremental fit index (IFI) was 0.971 above the recommended 0.95, while the TLI was 0.959 above the recommended 0.95. The CFI was 0.970 above the recommended 0.90. The RMSEA was 0.032 below the recommended cut-off point of 0.08. Besides, composite reliability to justify convergent validity was 0.855 above the recommended 0.70 as stipulated by Nunnally (1978).

In addition, the CFA results for social capital showed that the standardized parameter estimates of the initial measurement model were all significant ($p < 0.001$) and the model provided a good model fit statistics for the construct measures. The $\chi^2 = 54.901$ with degrees of freedom $= 48$, and probability level $= 0.229$. The IFI $= 0.974$, TLI $= 0.962$, CFI $= 0.972$, and the RMSEA $= 0.027$. The composite reliability to confirm convergent validity was 0.734 above 0.70 as recommended by Nunnally (1978).

Finally, the CFA standardized parameter estimates of the initial measurement model for financial inclusion were all significant ($p < 0.001$) and the model provided an excellent model fit statistics for the construct measures. The $\chi^2 = 27.741$ with degrees of freedom $= 29$ and probability level $= 0.532$. The IFI $= 1.006$ further above the recommended 0.95, while the TLI $= 1.011$ further above the threshold cut-off points of 0.95, and the CFI $= 1.000$ further over the recommended 0.90. Finally, the RMSEA $= 0.000$, and the composite reliability to confirm convergent validity was 0.701 above 0.70 as recommended by Nunnally (1978).

Thereafter, the final SEM model was generated by drawing a three-variable path diagram, including error terms for the endogenous mediator, dependent variables, and bootstrap estimates of indirect, direct, and total effects through the AMOS output sub-menu. The SEM bootstrap results revealed that social capital is a significant mediator in the relationship between financial intermediation and financial inclusion in rural Uganda. In addition, the mediated SEM model with both direct and indirect effect indicated perfect model with fit indices of $\chi^2 = 50.231$ with degrees of freedom $= 47$, and probability level $= 0.387$. The IFI $= 0.994$, TLI $= 0.991$, CFI $= 0.993$, and the RMSEA $= 0.014$. This means that the mediated model (direct and indirect effects) can be adopted for decision making compared to the non-mediated model since it indicates a better representation of model fit based on good-fit-indices.

The final mediated SEM model results revealed that the combination of social capital and financial intermediation explains 34 percent of the variation in financial inclusion of poor households in rural Uganda as shown in Figure A1.

This implies that when social capital is included in the SEM model, the effect of financial intermediation on financial inclusion of poor households in rural Uganda is enhanced. This finding lends support to hypothesis (*H2*) of the study, which stipulates that there is a mediation effect of social capital in the relationship between financial intermediation and financial inclusion (Tables IV and V).

Conclusion
The current study was carried out to establish the mediating effect of social capital in the relationship between financial intermediation and financial inclusion in rural Uganda.

The results revealed that there is a significant and positive relationship between financial intermediation and financial inclusion. This lends support to the hypothesis (*H1*) that there is a significant relationship between financial intermediation and financial inclusion.

Besides, the results indicated that there is a significant and positive relationship between financial intermediation and social capital. This confirms the hypothesis (*H3*) of the study, which states that there is a significant relationship between financial intermediation and social capital.

Furthermore, the findings from the study indicated that social capital and financial inclusion are significantly and positively related, thus, confirming hypothesis (*H4*) of the study.

	Direct effect	Direct and indirect effects
Social capital ← financial intermediation	Not estimated	0.375***
Fin. inclusion ← financial intermediation	0.326***	0.439***
Fin. inclusion ← social capital	0.418***	0.524***
CMIN	70.771	50.231
Degrees of freedom (df)	68	47
Probability (P)	0.347	0.387
Incremental fit index (IFI)	0.988	0.994
Tucker Lewis index (TLI)	0.982	0.991
Comparative fit index (CFI)	0.987	0.993
Root mean square error of approximation (RMSEA)	0.019	0.014
Squared multiple correlations		
Fin. inclusion	0.205	0.351
Social capital	–	0.460
Notes: $n = 200$. ***$p < 0.0001$		

Table IV.
Testing for mediation using social capital in the relationship between financial intermediation and financial inclusion

Standardized total effects	Fin. intermed.	Social capital		
Social capital	0.375***	0.000		
Financial inclusion	0.439***	0.524***		
Standardized direct effects	Fin. intermed.	Social capital		
Social capital	0.375***	0.000		
Financial inclusion	0.282***	0.524***		
Standardized indirect effects	Fin. intermed.	Social capital		
Social capital	0.000	0.000		
Financial inclusion	0.157***	0.000		
Bootstrap mediation results	Point estimates	SE	Lower bounds	Upper bounds	p
Financial intermed ← Fin. incl.	0.713	0.115	0.055	0.215	0.020
Social capital ← Fin. incl.	0.266	0.308	0.119	0.511	0.055
Notes: $n = 200$. ***$p < 0.0001$					

Table V.
Total, direct and indirect effects

Finally, the results revealed that social capital is a significant mediator in the relationship between financial intermediation and financial inclusion in rural Uganda. This is in contention with hypothesis (*H2*) of the study. The combination of social capital and financial intermediation explains 34 percent of the variation in financial inclusion of poor households in rural Uganda

Conclusively, financial intermediation has both direct and indirect effect on financial inclusion. The main contribution of our study is that combining financial intermediation with social capital as a mediator offers a better model to explain the scope of financial inclusion of the poor in a developing country perspective with a major focus on rural Uganda. The study provides evidence valid enough to conclude that social capital among the poor enhances financial inclusion in rural Uganda. This implies that full financial inclusion can be achieved, especially in communities where strong social capital exist like in rural Uganda.

Policy implications
Thus, from the study findings, a number of policy and research issues can be taken into consideration in order to address the findings of the study.

Policy makers including government and other development partners should support financial intermediation and social capital innovations such as the creation of community networks and associations among the poor that may enhance financial inclusion. Specifically, the government should provide incentives to the poor to form social networks within their

diverse social structures and partner with financial institutions for better interaction in order to promote financial inclusion. The government can do this through loosening registration requirements and procedures for creation of community networks and local groups. This is justified by the fact that the poor use their social capital to replace the lack of physical collateral while dealing with financial institutions, which enhances financial intermediation in rural areas.

Besides, managers of financial intermediaries such as banks and microfinance institutions should ensure designing social financial products that promote social capital among the poor. This is because social capital is used by the poor as a tool for screening and enforcement mechanism in the lending process. The banks should develop financial products, for example, loans that can be borrowed using social collateral. Therefore, the government through the central bank (Bank of Uganda) should support financial institutions by provisioning for a framework that support development of new social financial products taking into consideration consumer protection issues.

Furthermore, the government should set up professional bodies to ensure that MFIs operates more professionally by providing quality financial services and training to the poor to change their mind set.

More so, the government should promote growth and establishment of other sources of financial intermediaries such as SHG and VSLAs to include more poorer households. These financial intermediaries should operate informally alongside the formal institutions in order to include more poor. This could be possible through proper implementation of the new Tier 4 Microfinance Institution and Money Lenders Act (2016) amended by the Government of Uganda.

Finally, the government should create enabling environment that encourages the strengthening of social capital in rural Uganda. This can be achieved through fostering greater interaction between civil society and government, enhanced civil liberties, enhanced mechanism for government transparency, and stronger contracts and economic institutions.

Limitation of the study

The sample used in this study although large enough, may not be generalized to other segments of the population. Data were collected from only poor households located in rural Uganda. Future studies may be conducted using samples selected from other vulnerable groups such as the disabled persons, women, youth, and refugees. Besides, the study was cross-sectional, thus, limiting efforts in investigating certain characteristics of the sample over time. Perhaps, future studies could adopt the use of longitudinal research design.

References

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.

Amin, M. (2005), *Social Sciences Research: Conception, Methodology and Analysis*, Makerere University Printery, Kampala.

Ardic, O.P., Heimann, M. and Mylenko, N. (2011), "Access to financial services and the financial inclusion agenda around the world. A cross-country analysis with a new data set", WPS5537, The World Bank Financial and Private Sector Development Consultative Group to Assist the Poor, Washington, DC, January.

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

Atemnkeng, J.T. (2009), "Does social capital determine poverty? Evidence from Cameroon Household Survey", *Presentation at the Global Network for Economics of Learning, Innovation, and Competence Building Systems (GLOBELICS) Conference: UNU-MERIT and CRES, UCAD, Maastricht and Dakar, October 6-8*.

Beck, T., Demirguc-Kunt, A. and Martinez Peria, M.S. (2008), "Banking services for everyone? Barriers to bank access and use around the world", *World Bank Economic Review*, Vol. 22 No. 3, pp. 397-430.

Beck, T., Demirguc-Kunt, A. and Honahan, P. (2009), *Access to Financial Services: Measurement, Impact, and Policies. The World Bank Research Observer Advance Access*, Oxford University Press.

Besley, T. and Coate, S. (1995), "Group lending, repayment incentives and social collateral", *Journal of Development Economics*, Vol. 46 No. 1, pp. 1-18, available at: https://doi.org/10.1016/0304-3878 (94)00045-E.

Bourdieu, P. (1983/1986), "The forms of capital", in Richardson, J.G. and Westport, C.T. (Eds), *Handbook of Theory and Research for the Sociology of Education*, Greenwood Press, pp. 241-258.

Bourdieu, P. (1986), "The forms of capital", in Richardson, J.G. (Ed.), *Handbook of Theory and Research for the Sociology of Education*, Greenwood Press, Westport, CT, pp. 241-258.

Boyd, J. and Prescott, E. (1986), "Financial intermediary coalitions", *Journal of Economic Theory*, Vol. 38, pp. 211-232, available at: https://doi.org/10.1016/0022-0531(86)90115-8

Cassar, A., Crowley, L. and Wydick, B. (2007), "The effect of social capital on group loan repayment: evidence from field experiments", *Economic Journal*, Vol. 117 No. 517, pp. F85-F106.

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.

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

Chandan, K. and 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.

Chloupkova, J. and Bjørnskov, C. (2002), "Counting in social capital when easing agricultural credit constraints", *Journal of Microfinance*, Vol. 4 No. 1, pp. 17-36.

Cohen, J. (1988), *Statistical Power Analysis for the Behavioral Sciences*, 2nd ed., Lawrence Earlbaum Associates, Hillsdale, NJ.

Cohen, J. and Cohen, P. (1983), *Applied Multiple Regress/Correlation for the Behavioral Sciences*, 2nd ed., Lawrence Erlbaum Associates, Inc., Hillsdale, NJ.

Coleman, J. (1993), "The rational reconstruction of society", *American Sociological Review*, Vol. 58, February, pp. 1-15.

Coleman, J.S. (1988), "Social capital in the creation of human capital", *American Journal of Sociology*, Vol. 94, pp. S94-S120.

Coleman, J.S. (1990), *The Foundations of Social Theory*, The Belknap Press of Harvard University, Cambridge, MA.

de Aghion, B. and Gollier, C. (2000), "Peer group formation in an adverse selection model", *The Economic Journal*, Vol. 110, pp. 632-643, available at: https://doi.org/10.1111/ecoj. 2000.110.issue-465

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

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

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

Edgcomb, E. and Barton, L. (1998), "Social intermediation and microfinance programs: a literature review", Microenterprise Best Practices, USAID, Washington, DC.

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*, Vol. 42 No. 7, pp. 1321-1349.

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

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

FinScope (2013), "Unlocking barriers to financial inclusion, Uganda FinScope Survey III key findings", Synovate, Kampala.

Fukuyama, F. (2001), "Social capital, civil society and development", *Third World Quarterly*, Vol. 22 No. 1, pp. 7-20, available at: http://dx.doi.org/10.1080/713701144

Ghatak, M. (1999), "Group lending, local information and peer selection", *Journal of Development Economics*, Vol. 60 No. 1, pp. 27-50.

Ghatak, M. (2000), "Screening by the company you keep: joint liability lending and the peer selection effect", *Economic Journal*, Vol. 110 No. 465, pp. 601-631.

Gorton, G. and Winton, A. (2002), "Financial intermediation", in Constantinides, G., Harris, M. and Stulz, R. (Eds), *The Handbook of Economics and Finance*, North Holland, Amsterdam.

Grootaert, C. (2001), "Does social capital help the poor? A synthesis of findings from the local level institutions studies in Bolivia, Burkina Faso and Indonesia", Working Paper No. 10, World Bank Local Level Institutions, World Bank, Washington, DC.

Grootaert, C. and Bastelaer, V.T. (2002), *Understanding and Measuring Social Capital: A Multidisciplinary Tool for Practitioners*, World Bank Publications, Washington, DC.

Guiso, L., Sapienza, P. and Zingales, L. (2004), "The role of social capital in financial development", *The American Economic Review*, Vol. 94 No. 3, pp. 526-556.

Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C. (2010), *Multivariate Data Analysis*, 7th ed., Prentice Hall, Englewood Cliffs, NJ.

Heikkilä, A., Kalmi, P. and Ruuskanen, O.P. (2009), "Social capital and access to credit: evidence from Uganda", Department of Economics, Helsinki School of Economics and HECER, Helsinki.

Karlan, D.S. (2001), "Social capital and group banking: processed", Department of Economics, MIT, MA.

Karlan, D. (2003), "Social capital and group banking", Princeton University Research Program in Development Studies Paper, pp. 1-44.

Karlan, D.S. (2007), "Social connections and group banking", *Economic Journal*, Vol. 117 No. 517, pp. F52-F84.

Kempson, E., Atkinson., A. and Pilley., O. (2004), "Policy level response to financial exclusion in developed economies: lessons for developing economies", The Personal Finance Research Centre prepared for the Department for International Development (DFID), September.

Khan, H.L.P. (2011), "The role of social capital to access to rural credit in Vietnam", Master's Thesis No. 56, Hue University of Agriculture and Forestry.

Kendall, J., Mylenko, N. and 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, March, The World Bank, Washington, DC.

Mafabi, S., Munene, J.C. and Ntayi, J.M. (2012), "Knowledge Management and organizational resilience: organizational innovation as a mediator in Uganda parastatals", *Journal of Strategy and Management*, Vol. 5 No. 1, pp. 57-80.

Mathews, K. and 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*, Vol. 36 No. 5, pp. 135-168, available at: https://doi.org/10.1080/0022038000 8422649

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.

Morduch, J. (1999), "The microfinance promise", *Journal of Economic Literature*, Vol. 37 No. 4, pp. 1569-1614.

Munene, J.C., Schwartz, S.H. and Kibanja, G.M. (2005), *Escaping from Behavioural Poverty in Uganda: The Role of Culture and Social Capital*, Fountain Publishers, Kampala.

Nissanke, M. and Stein, H. (2003), "Financial globalization and economic development: toward an institutional foundation", *Eastern Economic Review*, Vol. 29 No. 2, pp. 287-308.

Nunnally, J.C. (1978), *Psychometric Theory*, McGraw-Hill Book Company, New York, NY.

Nunnally, J.C. and Bernstein, I.H. (1994), *Psychometric Theory*, 3rd ed., McGraw-Hill, New York, NY.

Pallant, J. (2005), *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using SPSS for Windows (Version 12)*, 2nd ed., Crows Nest, N.S.W, Allen & Unwin, Sydney.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y. and Podsakoff, N.P. (2003), "Common method biases in behavioural research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88, pp. 879-903, available at: https://doi.org/10.1037/0021-9010.88.5.879

Portes, A. (1998), "Social capital: its origins and applications in modern sociology", *Annual Review of Sociology*, Vol. 24 No. 1, pp. 1-24.

Preacher, K.J. and Hayes, A.F. (2010), "Quantifying and testing indirect effects in simple mediation models when the constituent paths are nonlinear", *Multivariate Behavioral Research*, Vol. 45, pp. 627-660, doi: 10.1080/00273171.2010.498290.

Putnam, R.D. (1993), "'The prosperous community: social capital and public life.", *The American Prospect*, Vol. 4 No. 13, pp. 35-42.

Ramakrishnan, R.T.S. and Thakor, A. (1984), "Information reliability and a theory of financial intermediation", *The Review of Economic Studies*, Vol. 51, pp. 415-432, available at: https://doi.org/10.2307/2297431

Rhyne, E. and Otero, M. (1994), "Financial services for microenterprises: principles and institutions", in Otero, M. and Rhyne, E. (Eds), *The New World of Micro-Enterprise Finance*, Kumarian Press, Inc., West Hartford, CT, pp. 76-93.

Sadoulet, L. (1998), *Non-Monotone Matching in Group Lending: A Missing Insurance Market Story*, ECARE and Princeton University.

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.

Sekaran, U. (2000), *Research Methods for Business: A Skill Building Approach*, John Wiley & Sins, Inc, New York, NY.

Spagnolo, G. (1999), "Social relations and cooperation in organizations", *Journal of Economic Behavior & Organization*, Vol. 38 No. 1, pp. 1-25.

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

Tabachnick, B.G. and Fidell, L.S. (2001), *Using Multivariate Statistics*, 4th ed., Allyn & Bacon, Needham Heights, MA.

Thorat, U. (2007), "Taking banking services to the common man – financial inclusion, deputy governor", *Reserve Bank of India at the HMT-DFID Financial Inclusion Conference, Whitehall Place, London, June 19*.

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.

Uganda Bureau of Statistics (2016), "Poverty statistical abstracts", Uganda Bureau of Statistics, Kampala.

van Bastelaer, T. (2000a), "Does social capital facilitate the poor's access to credit? A review on the microeconomic literature", Working Paper No. 8, Social Capital Initiative, February, The World Bank, Washington, DC.

van Bastelaer, T. (2000b), "Imperfect information, social capital and the poor's. Access to credit", Working Paper No. 234, World Bank, The World Bank, Washington, DC.

Von Pischke, J.D. (1991), *Finance at the Frontier: Debt Capacity and the Role of Credit in the Private Economy*, The World Bank, Washington, DC.

Woolcock, M. (1999), "Learning from failures in microfinance: what unsuccessful cases tell us about how group-based programs work", *American Journal of Economics and Sociology*, Vol. 58 No. 1, pp. 17-42.

Woolcock, M. (2001), "Microenterprise and social capital: a framework for theory, research, and policy", *Journal of Socio-Economics*, Vol. 30 No. 2, pp. 193-198.

Woolcock, M. and Narayan, D. (2000), "Social capital: implications for development theory, research, and policy", *The World Bank Research Observer*, Vol. 15 No. 2, pp. 225-249, available at: http://dx.doi.org/10.1093/wbro/15.2.225

World Bank (2002), "Building institutions for markets", World Development Report, 2001/2002, World Bank, Washington, DC.

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

Yamane, T. (1973), *Statistics: An Introductory Analysis*, 3rd ed., Harper and Row, New York, NY.

Yaron, J., Benjamin, M.P. and 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.

Further reading

Ajam, O. and Tijani, G. (2009), "The role of social capital in access to micro credit in Ekiti State, Nigeria", *Pakistan Journal of Social Sciences*, Vol. 6 No. 3, pp. 125-132.

Baron, R.M. and Kenny, D.A. (1986), "The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations", *Journal of Personality and Social Psychology*, Vol. 51 No. 6, pp. 1173-1182.

Bennett, L. (1996a), "Microfinance and the creation of social capital", Sustainable Banking with the Poor project, ASTHR, The World Bank Publication, The World Bank, Washington, DC, October 9.

Bennett, L. (1996b), "Social intermediation: building systems and skills for sustainable financial intermediation with the poor", rural Finance Seminar, The World Bank, The World Bank Sustainable Banking with the Poor project, Washington, DC, May 1.

Bennett, L. (1996c), "The necessity and dangers of combining social and financial intermediation to reach the poor", in von Pischke, J.D. (Ed.), Chapter 6, Strategic Issues in Microfinance, Aldershot.

Creswell, J.W. (2009), *Research Design: Qualitative and Quantitative Approaches*, Sage, London.

Jose, P.E. (2008), "MedGraph-I: a programme to graphically depict mediation among three variables: the internet version, Version 2.0", available at: www.victoria.ac.nz/staff/pauljose-files/medgraph/medgraph.php (accessed November 11, 2013).

Kamukama, N. (2010), "Intellectual capital and financial performance: a study of Uganda microfinance institutions", PhD thesis, Makerere University, Kampala.

Kamukama, N. and Natamba, B. (2013), "Social capital: mediator of social intermediation and financial services access", *International Journal of Commerce and Management*, Vol. 23 No. 3, pp. 204-215.

Kempson, E. (2006), "Policy level response to financial exclusion in developed economies: lessons for developing countries", paper presented at the Conference, Access to Finance: Building Inclusive Financial Systems, World Bank, Washington, DC.

Lawal, J.O., Omonona, B.T., Ajani, O.I.Y. and Oni, A.O. (2009b), "Effects of social capital on credit access among cocoa farming households in Osun State, Nigeria", *Agricultural Journal*, Vol. 4 No. 4, pp. 184-191.

Olomola, A.S. (2000), *Social Capital, Microfinance Group Performance and Poverty Implications in Nigeria*, Nigerian Institute of Social and Economic Research (NISER), Ibadan.

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.

Sarantonkos, S. (1997), *Social Research*, Palgrave, New York, NY.

van Bastelaer, T. and Leathers, H. (2006), "Trust in lending: social capital and joint liability seed loans in Southern Zambia", *World Development*, Vol. 34 No. 10, pp. 1788-1807.

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

Yokoyama, S. and Ali, A.K. (2006), "Social capital and farmer welfare in Malaysia", *International Association of Agricultural Economists Conference, Gold Coast, August 12-18*.
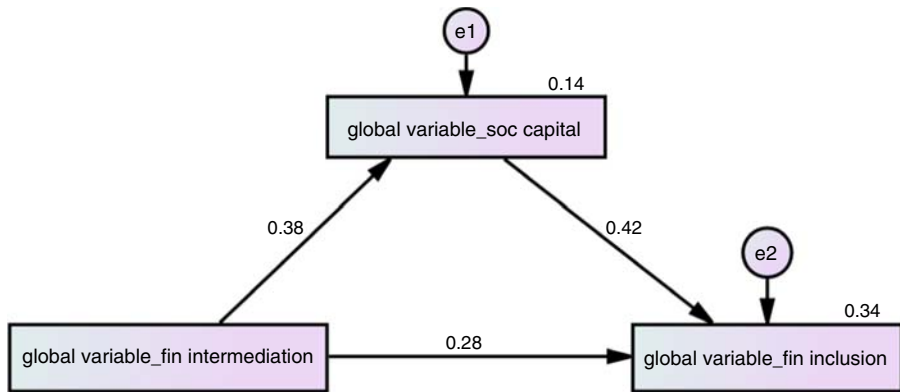
Appendix

Figure A1.
SEM mediated model for social capital between financial intermediation and financial inclusion

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