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Financial intermediation and financial inclusion of the poor

Testing the moderating role of institutional pillars in rural Uganda

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Abstract

Purpose – Drawing from the fact that institutions act as incentives and disincentives to human behaviour in financial markets, the purpose of this study is to examine the moderating role of institutional pillars in the relationship between financial intermediation and financial inclusion of the poor in rural Uganda.

Design/methodology/approach – The study used cross-sectional research design and data were collected from the poor residing in rural Uganda. Statistical package for social sciences was used to analyse the data. Descriptive statistics, correlations and regression analyses were generated. Besides, ModGraph excel programme was adopted to graphically explain the moderating role of institutional pillars in the relationship between financial intermediation and financial inclusion of the poor in rural Uganda.

Findings – The results revealed that institutional pillars of regulative (formal rules), normative (informal norms) and cultural cognitive (cognition) significantly moderate the relationship between financial intermediation and financial inclusion of the poor. Furthermore, the results also indicated that financial intermediation and institutional pillars have significant effects on financial inclusion of the poor in rural Uganda.

Research limitations/implications – The study focuses on only cross-sectional design, thus, leaving out longitudinal study. Future research using longitudinal data that explore behaviours of the poor over time could be useful. In addition, only quantitative data were used to measure variables under study and use of qualitative data were ignored. Thus, further studies using qualitative data are feasible.

Practical implications – Policymakers and advocates of financial inclusion in a developing country such as Uganda should adopt institutional pillars (regulative, normative and cultural-cognitive) in promoting financial intermediation in rural areas. The institutional pillars working in combination set the "rule of the game" or "humanly devise constraints" that guide economic exchange by promoting and limiting certain actions of actors in underdeveloped financial market as stipulated by North (1990) and Scott (1995).

Originality/value – To the best of the authors' knowledge, this is the first attempt to examine the moderating role of institutional pillars under the theory of institutions in the relationship between financial intermediation and financial inclusion of the poor in a developing country setting. Indeed, institutions guide contract enforceability and information sharing in human interaction to lower transaction cost in the financial markets. This is missing in literature and theory of financial intermediation in promoting financial inclusion, especially in rural Uganda.

Keywords Institutional pillars, Financial intermediaries, Poor households, Rural Uganda, Regulative pillar, Rule of the game

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1. Introduction

In a bid to scale-up the scope of financial inclusion in developing countries, scholars like Beck *et al.* (2009), Demirguc-Kunt and Klapper (2012), Sarma (2010) and Kendall *et al.* (2010), Thorat (2007) and development institutions such as the World Bank (2014) and United Nations (2006) have advocated for the existence of more financial intermediaries, especially in rural areas where the poor live.

Financial intermediation is the process by which financial intermediaries such as banks, finance house, microfinance bank and other similar licenced institutions harness fund from savers and give to borrowers on request for investments or other needs. North (1990) referred to institions as "the rules of the game" of a society or "the humanly devised rules or constraints" that structure political, economic and social interaction. They are made up of the formal constraints (rules, laws and constitutions) and informal constraints (norms of behaviours, conventions and self-imposed codes of conduct) and their enforcement characteristics (North, 1991). Similarly, Scott (2001) conceived institutions to "consist of regulative (legal), normative (social) and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to social life". While IMF (2008) defined financial inclusion as "access to formal financial services including savings, credit, insurance and payments through a formal financial intermediary at an affordable cost". Thus, a fully financially included person should have a savings bank account, an insurance policy, a pension plan and an investment account. Contextually, a poor person in Uganda is referred to as "an individual who faces the situation of poor health, low level of income and consumption, unemployment, illiteracy, low level of production, physical insecurity, disempowerment, and isolation socially and geographically".

Indeed, according to Mishkin (2007), financial intermediation through opening up of numerous bank branches and the entering of new financial service providers in the financial market can pave way for provision of varieties of financial products and services that suite the economic status of the poor. Similarly, Chandan and Mishra (2010) also argue that the presence of financial institution's structures such as offices, branches and personnel results into increased access to financial services by the poor. Indeed, financial intermediaries such as banks pool funds from the surplus units and lend it to the deficit units such as the poor.

Empirically, although several efforts have been adopted by the Government of Uganda to promote financial deepening through licensing a number of banks with widespread branch networks and microfinance institutions, financial inclusion remains low, especially in rural areas. According to the 2016 Financial inclusion insight survey findings, only 11 out of every 100 adults have access to a bank account, and only 7 out of every 100 adults are active users of these accounts (Financial Sector Deepening Uganda, 2016). More so, the number of the population holding accounts in formal banks is only 4 million (33 per cent) of the 12 million who are bankable. Furthermore, the formal institutions are less prominent in rural areas and they serve only 14 per cent of the rural population. Besides, the findings revealed that 51 out of every 100 adults indicated that they were within less than a kilometre from the nearest mobile money agent compared to 9 out of every 100 adults for bank branches. In addition, the savings-to-GDP ratio is still low at only 16 per cent and the level of financial intermediation is poor as indicated by the stock of private sector credit of 11.8 per cent of GDP (Bank of Uganda, 2015). Correspondingly, CARE International in Uganda (2014) also argues that access to formal financial services provided by formal financial intermediaries is low because existing laws do not provide incentives or regulations to support inclusive economic growth. Additionally, a financial access survey by International Monetary Fund (2015) also revealed that one out of every two bank branches in Uganda is located in the three largest cities. Thus, this means that many formal financial institutions

do not actively seek to reach previously unreached groups such as the poor by developing new products or adapting to their minimum deposit and/or collateral requirements. Similarly, the current regulatory framework for "Tier 4" institutions, which include non-deposit financial institutions, mobile money/internet-based technologies and self-help groups such as Voluntary Savings & Loans Associations is still new and not sufficient enough to promote financial intermediation.

Overall, the World Bank (2014) indicates that over 3 billion people in the world still lack access to and use of basic financial services with majority residing in developing countries, such as Uganda. This is due to high cost associated with fees and minimum balances, lack of physical access, long loan processing time, strict documentation and collateral requirements, lack of product suitability, service irregularity and frequency of availability, and long waiting time. Yet, scholars like Demirguc-Kunt and Klapper (2012) suggest that inclusive financial system (allowing broad access to financial services) without price or non-price barriers to their use are beneficial to the poor. Thus, availability of wide range of financial services is vital for economic well-being of the poor (World Bank, 2008). Indeed, financial inclusion helps 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 (Johnson and Nino-Zarazua, 2009).

Therefore, regulations can improve the safety and soundness of the financial system, quality of financial service provision including consumer protection, and socioeconomic development and access to financial services by the financially excluded poor households.

Agarwal and Hauswald (2010) contend that financial intermediaries face the problem of information asymmetry in the intermediation process. Thus, information that is required to enable transaction to take place between the surplus and deficit units is unavailable. Thus, the World Bank (2002) suggests that a mechanism that promotes and limits certain behaviours among actors in the market must exist to reduce the problem of information asymmetry and information search cost. North (1991) posits that market activities should be supported by a complex blend of informal and formal institutions, which define and specify the rules for competition and cooperation in markets.

Indeed, institutional pillars comprising of formal rules (regulative), informal norms (normative) and cultural-cognitive (cognition) that work in combination and through distinct mechanisms, determine efficient coordination and cooperative behaviour in markets so as to reduce transaction cost (North, 1990; Scott, 2001). Institutions enable information sharing that would not be available otherwise, and guide contract enforceability through the "rules of the game" or *humanly devise constrains"* that influence the way people think and act, thereby, lowering transaction cost in economic, social, and political exchange (Dequech, 2004).

Scholars like Chandan and Mishra (2010), Ergungor (2010), Kempson *et al.* (2004), DeGennaro (2005), Mathews and Thompson (2008), Rau (2004), Nissanke and Stein (2003), Stiglitz and Greenwald (2003), Menkhoff (2000) and Mishkin (1998) examined the role of financial intermediation on financial inclusion in developing countries. However, theoretically, the theory of financial intermediation ignores the moderating role of institutional pillars of regulative, normative and cultural-cognitive under the theory of institutions, which guides contract enforceability and information sharing that lowers transaction cost in the intermediation process.

Therefore, the purpose of this study is to examine the moderating role of institutional pillars working in combination in the relationship between financial intermediation and financial inclusion in rural Uganda. This is justified by the fact that lack of trust and assurance by banks to the poor for safety of their savings in case of collapse of any financial service

providers is a major challenge to financial inclusion in rural Uganda (Okello *et al.*, 2016). This is supported by Mpuga (2008) who contends that the poor in Uganda generally fall outside the formal legal framework and they are not protected by the existing laws. Furthermore, the current regulatory framework for "Tier 4" institutions is still new and not sufficient enough to promote financial intermediation. The paper undoubtedly contributes to the existing body of literature by incorporating the moderating role of institutional pillars working in combination in boosting financial intermediation for financial inclusion, which is lacking in literature and theory, especially in rural Uganda.

2. Research objective and significance

This study intends to examine the moderating role of institutional pillars working in combination in the relationship between financial intermediation and financial inclusion in rural Uganda. Thus, the main objective of the study is to achieve wide scope of financial inclusion by integrating the moderating role of institutional pillars of regulative, normative and cultural-cognitive working in combination to promote financial intermediation in rural Uganda.

Therefore, institutional pillars will set the rules of the games or humanly devise constraints between the surplus, deficit units, and the financial intermediaries by prescribing cooperative behaviours in the financial market that promotes information sharing and contract enforceability that lowers transaction cost in the process of intermediation. Thus, this study will help in promoting financial inclusion by integrating the role of institutional pillars in guiding the functioning of financial intermediaries in the financial market. Indeed, adopting the use of institutional pillars to reduce transaction cost resulting from information asymmetry in the process of financial intermediation by banks will ultimately lead to improved scope of financial inclusion.

3. Literature review and hypotheses development

3.1 Financial intermediation and financial inclusion

CGAP (2013) observes that developing economies with deeper financial intermediation tend to grow faster because of availability of varieties of financial services offered by financial intermediaries such as banks. According to DeGennaro (2005), Ramakrishnan and Thakor (1984), and Boyd and Prescott (1986), banks acquire information in the process of intermediation between the surplus and deficit units who would have transacted directly and use it to offer financial services.

Scholars like Mathews and Thompson (2008), Nissanke and Stein (2003), Stiglitz and Greenwald (2003), and Menkhoff (2000) argue that banks as financial intermediaries pool funds from surplus units and lend to deficit units including the poor. Accordingly, the World Bank (2007) and ACCION (2011) observe that the poor also use financial services such as savings, payments, and loans that are provided by financial intermediaries. Thus, Marquis (2001) stipulates that a bank's effort to pool savings and lend money to deficit units like the poor is largely dependent on its ability, professional capacity, and coverage in the financial market.

In addition, Mishkin (2007) also states that opening up of numerous bank branches and the entering of other financial services' providers in the financial market can pave way for provision of varieties of financial products and services that suite the economic status of the poor. In the same vein, Chandan and Mishra (2010), Ergungor (2010), and Kempson *et al.* (2004) also reveal that the presence of bank structures such as offices, branches, and personnel may result into increased provision and access to financial services in developing economies, especially by the poor.

Conclusively, Rau (2004) notes that banks use available information in the market to screen and define its clients including the poor to whom it extends financial services, thus, widening the scope of financial inclusion. Therefore, here we hypothesize that:

H1. Financial intermediation is significantly related with financial inclusion in rural Uganda.

3.2 Institutional pillars and financial inclusion

North (1990) conceived institutions as the "rules of the game" of a society or the "humanly devised rules or constraints" that structure political, economic, and social interaction and their enforcement characteristics. North argued that institutions consist of both formal constraints such as codified rules and laws and informal constraints such as norms, customs, culture, and shared beliefs, which help people to form expectations of what others will do in the presence of uncertainty and imperfect information for efficient transactional agreements to be achieved.

Similarly, Scott (2001) referred to institutions to "consist of regulative (legal), normative (social) and cultural-cognitive elements that together with associated activities and resources, provide stability and meaning to social life". Indeed, actors' socialization guided by values and norms provide consciously the understanding of legal, social or moral rules and guidelines for behaviours to conceive every day real world. Thus, institutions define and specify the rules for competition and cooperation in markets (North, 1991).

Drawing from North (1990) and Scott (2001) conceptualization of institutions, institutional pillars of regulative, normative and cultural-cognitive devise and influence the way in which economic actors get things done in context involving human interaction. Institutions structure incentives in human exchange (economic) by defining and limiting sets of choices and actions for individuals in the financial market. Thus, the poor's behaviour and actions to be financially included largely depend on institutional pillars that either promote or limit their financial decisions and choices in the financial market.

According to the World Bank (2001), a complex blend of institutional pillars (regulative, normative and cultural-cognitve) promotes and limits market activities by setting mechanism, which guide behaviours and actions of players. Existing evidence on the study of financial inclusion in Uganda indicates that access to and use of basic financial services by rural poor households are determined by their behaviours and actions, which either promote or limit their financial decisions and choices.

CGAP (2013) observes that financial inclusion happens within a regulatory framework, which affects the poor's inclusion into formal financial streams. Hence, existing regulation must create the right "rules of the game" that reinforce responsible practices and product design by financial intermediaries so that the poor can trust them enough to choose and use their products and services over informal financial service providers. The laws and rules about credit rights, bank fees, and confidence by the poor promote or limit their behaviours and actions to deal with the financial intermediaries. Lack of trust and assurance by the poor for safety of their savings in case of collapse of any financial service provider is a major challenge to financial inclusion in rural Uganda (Okello *et al.*, 2016). This is supported by Mpuga (2008) who contended that the poor in Uganda generally fall outside the formal legal frameworks.

Scholars such as Acemoglu *et al.* (2000) suggest that as the poor are not detached from social settings where norms are the order of the day, their financial behaviour and actions towards financial inclusion are derived from normative institutions. The World Bank (2001) argues that normative institutions play a primary role in determining financial choices of

the poor. Contextually, behaviours and actions of the poor when dealing with financial intermediaries such as banks are guided by norms and values, which enable them to honour and exhibit loyalty guided by sanction and punishment. This promotes financial inclusiveness among the poor.

Furthermore, Scott (2001) also states that cultural-cognitive aspect of institutions help individuals such as the poor to make meaning based on shared conceptions guided by culture. This is supported by the argument that internal interpretive processes and meaning among individuals are shaped by external cultural frames. Conversely, Kostova (1999) arguments that cognitive programs such as schemas, frames, inferential sets, and representation helps the poor to notice, categorize, and interpret financial information provided by banks. Thus, their minds register incoming financial information and subject them to varieties of transformations before ordering responses (Markus and Zajonc, 1985). Therefore, the poor in Uganda depend in part on their ability to invoke several dimensions of their memories and cognitive skills to make better financial decisions and choices, which determines their financial inclusiveness (Horn and McArdle, 2007; McArdle and Woodcock, 1998). Therefore, here we hypothesize that:

H2. Institutional pillars are significantly related with financial inclusion in rural Uganda.

3.3 Institutional pillars: moderator between financial intermediation and financial inclusion

Mishkin (2007) argues that financial intermediation through opening up of numerous bank branches and allowing new financial institutions to provide financial services can increase the scope of financial inclusion, especially in developing countries. Indeed, banks and other regulated financial intermediaries pool funds from surplus units and lend to deficit units, including the poor.

However, Agarwal and Hauswald (2010) observe that there is information asymmetry problem as financial intermediaries do not know much about their clients/borrower. Similarly, the clients/borrowers may also lack information about the prospects of the bank. Therefore, to complete the market, there is need for mechanism that promote information availability and sharing to lower transaction cost in the intermediation process. The financial intermediation theory (Gurley and Shaw, 1960) is premised on minimizing transaction cost that arise from lack of information in a direct trade with the assumption that no other factors apart from transacting parties may influence information availability and sharing in the financial market. Gurley and Shaw (1960) argued that financial intermediaries such as banks acquire information that is not readily available in the financial market from surplus and deficit units and use it in the intermediation process. Unfortunately, the theory fails to integrate the institutional pillars of regulative, normative and cultural-cognitive in enabling information sharing and guiding contract enforceability in the process of financial intermediation between the surplus and deficit units by banks.

Drawing from the institutional theory, North (1990) argued that institutions promote or limit certain behaviours and actions of actors in economic exchange guided by the "rules of the game" (formal rules) or "humanly devised constraints" (informal norms). In contention, Scott (2001) also stipulates that institutions comprising of regulative, normative and cultural-cognitive pillars, working in combination and through distinct mechanism, determine efficient coordination and cooperative behaviour in markets to reduce transaction cost.

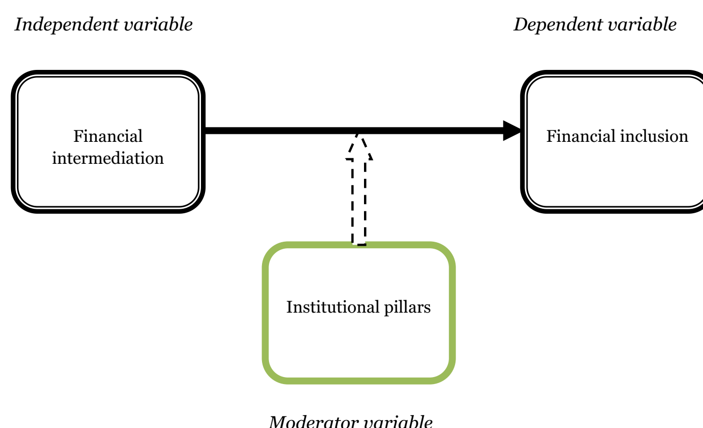
Indeed, institutions promote information sharing that would not be available otherwise, and guide contract enforceability through rules of the game that have influence on people's

way of thinking, thereby, lowering transaction cost in the financial market (Dequech, 2004; North, 1991). In addition, Lin and Nugent (1995) also state that law and order ensures that trade and production take place without the agents having to engage in costly protection activities by limiting and defining the choice set of individuals in the financial market.

Contextually, the presence of regulative and normative institutional pillars have promoted or limited financial inclusion of the poor in rural Uganda. The existing Financial Institution Act (2016, amended) defines the activities and roles of financial intermediaries such as banks that offer varieties of financial services to the poor. Besides, sanctioning and punishment among the poor who rely on social collateral have resulted into increase in access to and use of financial services in rural Uganda (Okello *et al.*, 2016). Thus, institutions determine and structure human interactions by providing incentives and disincentives for people to behave in certain ways, especially in the financial market (North, 2003). Thus, here we hypothesize that (Figure 1):

H3. Institutional pillars significantly moderate the relationship between financial intermediation and financial inclusion in rural Uganda.

Theoretically, North (1990) and Scott (2001) prescribed institutions as "the rules of the game" of a society or "the humanly devised rules or constraints" that structure political, economic, and social interaction. North (1991) observed that institutions are made up of the formal constraints (rules, laws, and constitutions) and informal constraints (norms of behaviours, conventions, and self-imposed codes of conduct) and their enforcement characteristics. Similarly, Scott (2001) conceived institutions to "consist of regulative (legal), normative (social) and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to social life". Indeed, institutions guide contract enforceability and information sharing in human interactions to lower transaction cost incurred by financial intermediaries in the process of extending financial services to the poor. Thus, the use of institutional pillars of regulative, normative and cognition under the theory of institutions as a moderator between financial intermediation and financial inclusion may promote contract enforceability and information sharing, hence improving



Source: Developed by the authors

Figure 1.
Conceptual model for the study

the scope of financial inclusion, especially among the poor in rural Uganda. This is scanty in both theory and extant literature of financial inclusion in developing countries.

4. Methodology

4.1 Research design

The study adopted a cross-sectional research design. Data were collected from the selected sample at one specific point in time. Besides, the use of cross-sectional design allowed us to collect large amount of data over a short period of time. Furthermore, as we collected information at one specific point in time, problems arising from recurrent mistakes in data collection instruments were minimized in this study.

4.2 Population and samples for the study

The population for this study comprised of the poor living in the four regions of northern, eastern, southern, and western Uganda. A total population of 1.2 million poor households living along the digital banking map was considered in this study. The poor were selected for this study because they have been largely excluded from access to and use of formal financial services by formal financial institutions in Uganda.

4.3 Sampling method and procedures

Simple random sampling method was used to select samples for this study, and formulae derived from Yamane (1973) was adopted in selecting the samples. The sample size was arrived at using the formulae: $n = [N/1 + N(e)^2]$; where n = sample size, N = total population and e = tolerable error (0.05 or 95 per cent). Therefore, a total sample of 400 poor households was randomly selected for this study. Random sampling method was used in this study in order to give all the poor households equal opportunities and chances to be included in the study.

4.4 Measures of study variables

4.4.1 Institutional pillars. North (1990) conceived institutions as the "rules of the game" of a society or the "humanly devised rules or constraints" consisting of both formal constraints and informal constraints, which help people to form expectations of what others will do in the presence of uncertainty and imperfect information. Besides, Scott (2001) referred to institutions to "consist of regulative (legal), normative (social) and cultural-cognitive elements that together with associated activities and resources, provide stability and meaning to social life". Thus, for the purpose of this study, three dimensions of institutional pillars of regulative (formal rules), normative (informal norms) and cultural-cognitive described by North (1990) and Scott (2001) were used in designing the measurement items for institutional pillars. Furthermore, additional items were adopted from the World Bank (2002), "Building institutions for markets". Thus, questions used to measure the institutional pillars were generated to represent all its constructs. All the questions were anchored onto a five-point Likert scale score of strongly agree (5), agree (4), not sure (3), disagree (2) and strongly disagree (1).

4.4.2 Financial intermediation. Financial intermediation is the process by which a financial intermediary such as a bank link the surplus units to the deficit units. Previously, Dutta and Dutta (2011) and Allen *et al.* (2012) used penetration level to measure financial intermediation by banks. In addition, Yaron *et al.* (1997) adopted the use of quality of services provided by banks to measure financial intermediation. Therefore, for the purpose of this study, the dimensions of penetration level and quality

of services were adopted to measure financial intermediation as recommended by Dutta and Dutta (2011), Allen *et al.* (2012), and Yaron *et al.* (1997). All the questions were anchored onto a five-point Likert scale score of strongly agree (5), agree (4), not sure (3), disagree (2) and strongly disagree (1).

4.4.3 Financial inclusion. According to IMF (2008), financial inclusion is defined as "access to formal financial services including savings, credit, insurance and payments through a formal financial intermediary at an affordable cost". Scholars such as Čihák, *et al.* (2012), Claessens (2006), Kempson (2006), Ardic *et al.* (2011), Kendall *et al.* (2010) and Beck *et al.* (2008) and development institutions such as the World Bank, CGAP, ACCION and AFI have adopted the dimensions of access, quality, usage, and welfare to measure financial inclusion. Therefore, in developing the measurement scales for financial inclusion, the dimensions of access, quality, usage, and welfare were used to measure financial inclusion of the poor in rural Uganda. Respondents were asked on the basis of five-point Likert scale of strongly agree (5), agree (4), not sure (3), disagree (2) and strongly disagree (1).

4.5 Data collection instrument and process

Data for this study were collected using semi-structured questionnaires. The questionnaires were directly administered to the respondents by research assistants. The data were collected over a period of three months and 100 per cent response rate was achieved. This is attributed to the following reasons:

- First, the study adopted the use of research assistants to directly administer the questionnaires.
- Second, the data were collected through local council chairpersons and community civic leaders.
- Third, to solve the problem of language barrier, the research assistants were recruited from each of the particular regions where the study was conducted.
- Finally, prior to the main survey, a pilot study was conducted and the research assistants were trained on how to score the questionnaires.

Thus, this enabled us to collect all the 400 targeted responses for this study.

4.6 Data analysis and processing

Raw data from the field were checked for completeness, accuracy, errors of incorrect responses, careless scoring, and missing instruments. Completed questionnaires from the field were serially numbered before being captured into statistical package for social sciences (SPSS/20) data analysis software. The responses were captured on the basis of codes assigned to different questions under each variable used in this study. Data screening was performed to check for missing values and outliers in the data. This is because they bias the mean and inflate the standard deviation as stipulated by Field and Hole (2003). Frequencies were generated to identify the missing values in the data and box plots were generated to establish whether outliers existed in the data. The results revealed that missing values existed in the data and they were missing completely at random. However, the box plot results indicated that there were no outliers in our data. Therefore, to solve the problem of missing values in our data, linear interpolation data replacement method was used as recommended by Field (2005) and Hair *et al.* (2010), as the data were missing at completely random at less than 5 per cent, which is recommended for replacement.

4.7 Test for assumptions of parametric data

The test for assumptions of parametric data was performed on the data collected from the final study. Tests for normally distributed data and homogeneity of variance were carried out on the data. Normality in the data was tested using the histogram and multicollinearity, whereas the test for homogeneity of variance was performed by running the Levene's test statistics. The results from the tests revealed that the histogram was bell-shaped and the variance inflation factor (VIF) and the tolerance values were less than 10 and above 0.2, respectively, as recommended by Hair *et al.* (2010) and Tabachnick and Fidell (2001). Furthermore, the Levene's test statistics were insignificant at $p > 0.5$, thus, implying that the data were normally distributed and were good for further statistical analysis as the assumptions of parametric data were achieved.

4.8 Reliability and validity

Reliability is an assessment of the degree of consistency between multiple measurements of a variable. Cronbach's alpha coefficients were generated (Cronbach, 1951) to test the internal consistency of items. The results revealed that all variables had alpha coefficients above 0.7 as recommended by Nunnally and Bernstein (1994). The values were 0.830, 0.883 and 0.844 for institutional pillars, financial intermediation, and financial inclusion respectively. Content and convergent validity were performed to establish the degree to which the measures accurately represent what they are supposed to measure (Hair *et al.*, 2010). The results of the exploratory factor analysis indicated that all the items correlated and loaded well with each other. The items that were discriminant and could not load well with each other were dropped from the final data analysis.

4.9 Testing for moderating effect

Baron and Kenny (1986) state that for interaction to exist, the effect of independent variable on the dependent variable should vary as a function of change in the moderator variable. In addition, Jose (2008) also recommends that interaction should be tested by centering the independent variables to get the product of the centred variable so as to generate the interaction term that is used to test for interaction effect through hierarchical regression of independent variable and interaction term on dependent variable. Therefore, hierarchical regression was performed to determine the predictive power of independent variable on the dependent variable. The independent variable (financial intermediation) and dependent variable (financial inclusion) were centred to obtain their marginal means. The interaction term was generated by getting the product of marginal means of independent variable and dependent variable. Baron and Kenny (1986) and Jose (2008) suggest that if the beta coefficient of the interaction term is significant, then there is proof of existence of interaction in the model. The results in Table II revealed that the beta coefficient of interaction term was significant and positive ($p < 0.01$).

Finally, Jose (2008) argues that the moderating effect of the moderator variable should be plotted on a ModGraph excel programme to show the level of moderation. Accordingly, the rule states that the lines on the graph should never converge when drawn. This helps to confirm whether there is an interaction effect between the independent, moderator and dependent variables in the model. Besides, the magnitude of the effect should be greater at all levels as stipulated by Aiken and West (1991). Indeed, the ModGraph in Figure 2 indicated that the results is significant and tenable.

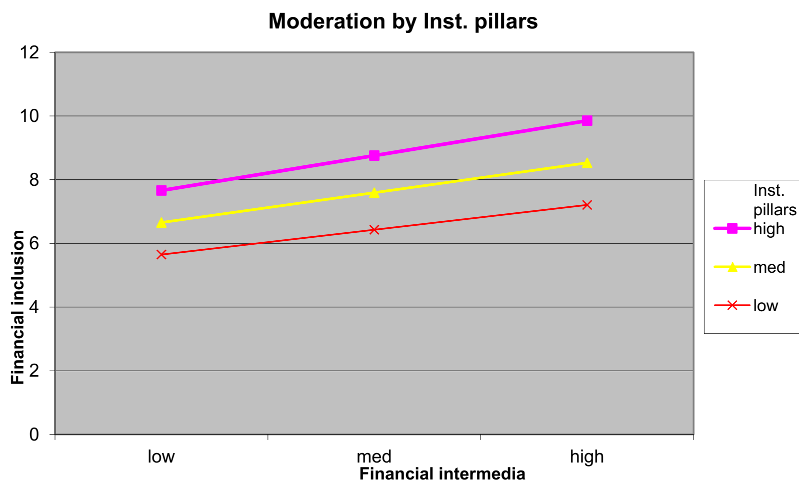


Figure 2.
ModGraph showing moderation by institutional pillars between financial intermediation and financial inclusion

5. Findings

5.1 Sample characteristics

The results from this study revealed that majority (64 per cent) of the respondents were male and 37 per cent were female. This means that most poor households who participated in the study are headed by men, which is common in African societies. Besides, the results indicated that 37 per cent of the households' heads were aged between 26 and 33 years, whereas 26 per cent were aged between 34 and 41 years. In addition, 23 per cent were in the 42-49 years' age bracket, and 10 per cent were in the 18-25 years' age bracket, with only 5 per cent in the 50+ years' age group. This implies that most poor households are headed by individuals aged between 26 and 33 years. This could be explained by the fact that a large percentage of Ugandan population is composed of young individuals (see for e.g. Uganda Bureau of Statistics, 2014). More so, the results showed that 47 per cent of the poor households who participated in the study used paraffin lantern as their lighting source, and 27 per cent used small kerosene lamp, whereas 26 per cent used other sources of lighting, e.g. solar. The results indicated that only 1 per cent used firewood for lighting. Thus, this means that most poor households use paraffin lantern as their major source of lighting because of its affordability as compared to other sources of lighting.

5.2 Correlation analysis

The purpose of this study is to examine the interaction effect of institutional pillars in the relationship between financial intermediation and financial inclusion in rural Uganda.

The correlation results in Table I indicated that there is a significant and positive relationship between financial intermediation and financial inclusion ($r = 0.211$, $p < 0.1$). This means that financial intermediation influences the level of financial inclusion. This confirms *H1* of the study. Financial intermediaries such as banks link the surplus and deficit units through the process of intermediation, which could not be possible, as both may fail to identify themselves within the financial market. Thus, financial intermediaries act as a conduit for flow of financial resources from the surplus units to the deficit units.

Besides, the results also revealed that there is a significant and positive relationship between institutional pillars and financial inclusion ($r = 0.354$, $p < 0.1$), therefore, supporting

H2 of the study. Indeed, CGAP (2013) argues that financial inclusion happens within a regulatory framework, which affects financial inclusion of the poor by formal financial institutions. Thus, the poor's behaviour and action to be financially included largely depends on institutional pillars that either promote or limit their financial decisions and choices. In addition, institutional pillars devise rules or constraints that structure the behaviours of banks based on the rules of the game.

5.3 Regression analysis

Hierarchical regression was performed to determine the predictive power of the independent variable on the dependent variable, the moderator variable on dependent variable, and the interaction between independent and moderator variables on dependent variable. The hierarchical regression model was used to allow us test for the individual impact of the independent and moderator variables, and the interaction terms in explaining financial inclusion, with each entered at a different time in the hierarchical model (Hair *et al.*, 2010; Field, 2005). Besides, to establish the existence of moderation, the independent variable (financial intermediation) and dependent variable (financial inclusion) were centred to obtain their marginal means that determines the existence of interaction. The results are indicated in Table II.

The results showed that there is a significant and positive relationship between financial intermediation and financial inclusion ($\beta = 0.348$, $p < 0.01$). This result supports *H1* of the study. Mathews and Thompson (2008), Nissanke and Stein (2003), Stiglitz and Greenwald (2003), and Menkhoff (2000) observe that banks as financial intermediaries pool funds from surplus units and lend to deficit units including the poor.

Variables	Mean	SD	1	2	3
Financial intermediation (1)	3.62	0.690	1.000		
Institutional pillars (2)	3.60	0.723	0.363**	1.000	
Financial inclusion (3)	3.70	0.576	0.211**	0.354**	1.000

Notes: $n = 400$; **Correlation is significant at 0.01 level (two-tailed)

Table I. Pearson correlation analysis between the study variables

	Financial inclusion			
Variables	Model 1	Model 2	Model 3	VIF
Constant	1.030	0.826	1.029	
Main effect				
Financial intermediation	0.348**	0.182**	0.211**	1.152
Moderator effect				
Institutional pillars		0.505**	0.456**	1.818
Interaction terms			0.319**	
R^2	0.045	0.192	0.231	n/a
Change in R^2		0.147	0.039	n/a
F change	18.595**	40.423**	0.319	n/a

Notes: $^{**}p < 0.01$; $n = 400$

Table II. Institutional pillars as moderator between financial intermediation and financial inclusion

Furthermore, the results also revealed that there is a significant and positive relationship between institutional pillars and financial inclusion ($\beta = 0.456$, $p < 0.01$). This lends support to *H2* of the study. According to North (1990), institutions promote information sharing that would not be available otherwise, and guide contract enforceability through the "rules of the game" or *humanly devise constrains"* that influence the way people think and act, thereby, lowering transaction cost in economic, social, and political exchange.

5.4 Testing for moderating effect

The results in Table II revealed that the beta coefficient of interaction term was significant and positive ($\beta = 0.319$, $p < 0.01$). The results lend support to *H3* of the study, which states that institutional pillars moderate the relationship between financial intermediation and financial inclusion. This implies that a change in institutional pillars significantly affects variation in financial intermediation in an attempt to influence financial inclusion of the poor.

In addition, the ModGraph in Figure 2 also indicated that there is an interaction effect between financial intermediation and institutional pillars on financial inclusion, as the lines are not parallel.

Indeed, North (1990) argues that institutions promote or limit certain behaviours and actions of actors in economic exchange guided by the "rules of the game" (formal rules) or "humanly devised constraints" (informal norms). Similarly, Scott (2001) also stipulates that institutions comprising of the regulative, normative and cultural-cognitive pillars working in combination and through distinct mechanism determines efficient coordination and cooperative behaviour in markets to reduce transaction cost.

Although, the results revealed that financial intermediation and financial inclusion are significantly and positively related, the main purpose of this study is to examine the moderating role of institutional pillars in the relationship between financial intermediation and financial inclusion of the poor in rural Uganda. Overall, the results indicated that institutional pillars under the theory of institutions significantly and positively moderate the effect of financial intermediation on financial inclusion. This is lacking in theory and extant literature of financial inclusion, especially in a developing country such as Uganda. Thus, this indicates the uniqueness of this study, especially among the poor in rural Uganda.

6. Discussions

6.1 Financial intermediation and financial inclusion

The results indicated that there is a significant and positive relationship between financial intermediation and financial inclusion. This result lends support to *H1* of the study. Mishkin (2007) argues that opening up of numerous bank branches and entering of other financial services' providers in the financial market can pave way for provision of varieties of financial products and services that suite the economic status of the poor. In addition, Chandan and Mishra (2010), Ergungor (2010), and Kempson *et al.* (2004) also observe that the presence of bank structures such as offices, branches and personnel may result into increased provision and access to financial services in developing economies, especially by the poor. However, in Uganda, the level of financial intermediation is limited by the current regulatory framework that is not sufficient enough to promote financial intermediation. This means that many formal financial institutions do not actively seek to reach previously unreached groups such as the poor who lack physical collateral.

6.2 Institutional pillars and financial inclusion

Furthermore, the results also revealed that there is a significant and positive relationship between institutional pillars and financial inclusion. This lends support to *H2* of the study. Institutions structure incentives in human exchange (economic) by defining and limiting sets of choices and actions for individuals in the financial market. Thus, the poor's behaviour and actions to be financially included largely depend on institutional pillars that either promote or limit their financial decisions and choices. Lack of trust and assurance to the poor for safety of their savings in case of collapse of any financial service provider is a major challenge to financial inclusion in rural Uganda (Okello *et al.*, 2016). This is supported by Mpuga (2008) who contended that the poor in Uganda generally fall outside formal legal frameworks. Conversely, the behaviours and actions of the poor when dealing with financial intermediaries like banks are guided by norms and values, which enable them to honour and exhibit loyalty guided by sanction and punishment. This promotes financial inclusiveness among the poor. Similarly, the poor in Uganda depends in part on their ability to invoke several dimensions of their memories and cognitive skills to make better financial decisions and choices towards consumption of financial products (Horn and McArdle, 2007; McArdle and Woodcock, 1998).

6.3 Institutional pillars: moderator between financial intermediation and financial inclusion

More so, the results showed that the beta coefficient of the interaction terms was significant and positive. This implies that institutional pillars significantly moderate the relationship between financial intermediation and financial inclusion. The results lend support to *H3* of the study. Agarwal and Hauswald (2010) observe that there is information asymmetry problem as financial intermediaries do not know much about their clients/borrower. Likewise, the clients/borrowers may also lack information about the prospects of the banks. Therefore, to complete the market, there is need for mechanism that promotes information availability and sharing to lower transaction cost in the intermediation process. Indeed, institutions promote information sharing that would not be available otherwise and guide contract enforceability through rules of the game that have influence on people's way of thinking, thereby, lowering transaction cost in the financial market (Dequech, 2004; North, 1991). The presence of regulative and normative institutional pillars have promoted or limited financial inclusion of the poor in rural Uganda. Furthermore, the existing Financial Institution Act (2016, amended) has clearly defined activities and roles of financial intermediaries such as banks that offer varieties of financial services to the poor. Besides, sanctioning and punishment among the poor who lack collateral have resulted into access to and use of financial services in rural Uganda (Okello *et al.*, 2016).

7. Summary and conclusion

7.1 Summary and implications of the study

Theoretically, the main purpose of this study is to examine the moderating role of institutional pillars in the relationship between financial intermediation and financial inclusion of the poor in rural Uganda. The results revealed that institutional pillars under the theory of institutions significantly and positively moderate the effect of financial intermediation on financial inclusion. This finding implies that a change in institutional pillars do significantly affect variation in financial intermediation in an attempt to influence financial inclusion of the poor in rural Uganda. Accordingly, the existing institutional structures in Uganda does not wholly support financial intermediation by all financial institutions as it may be the case with other countries. Thus, the government and

policymakers in Uganda should create a framework together with conducive and cooperative environment that integrates the use of institutional pillars in promoting information sharing and contract enforcement to protect both the financial intermediaries and the poor who always suffer from imperfect information in financial markets. Besides, the newly created Microfinance Regulatory Authority should be quick in ensuring that the Microfinance Institutions operates more professionally while providing financial services to the poor. Furthermore, the "Tier 4" Financial Institution Act (2016, amended) should be put into use to sufficiently guide operations of financial intermediaries to increase the level of financial inclusion of the poor, especially in rural Uganda.

Furthermore, the findings from the study indicated that there is a significant and positive relationship between financial intermediation and financial inclusion. This means that financial intermediation affects the level of financial inclusion of the poor in rural Uganda. Thus, policymakers and financial inclusion advocates should ensure licensing more financial services' providers to allow them to open up numerous branches with offices and personnel to pave way for provision of varieties of financial products and services that suite economic status of the poor so as to increase the access to and use of financial services by the rural poor.

Besides, the results also revealed that there is a significant and positive relationship between institutional pillars and financial inclusion. The finding means that institutional pillars influences financial inclusion of the poor in rural Uganda. Indeed, policymakers and financial institution regulators should strengthen the implementation of the existing Financial Institution Act to ensure that financial intermediaries, surplus, and deficit units have avenues for recourse and remedies in case of financial loss. The poor should be protected in the course of using basic financial services and products provided by the banks so that they are confident in consuming financial services provided by the banks.

7.2 Conclusion

This paper gives evidence that financial intermediation is significantly and positively related to financial inclusion, and institutional pillars of formal rules (regulative), informal norms (normative) and cultural-cognitive (cognition) are very important in the relationship between financial intermediation and financial inclusion, especially in rural Uganda. The results draw attention because of lack of empirical and theoretical evidences in explaining the moderating role of institutional pillars in the relationship between financial intermediation and financial inclusion. The findings are complementary to previous scholarly works and, thus, provides evidence that the impact of a third variable is worthy considering while investigating a relationship between the independent and dependent variables as confirmed by this study.

7.3 Limitation and scope for future work

First, the study focused on only cross-sectional design, thus, leaving out longitudinal study. Future research using longitudinal data may be useful. Second, the study used only quantitative data to measure the variables under study. It ignored use of qualitative data. Thus, future studies using qualitative data may be conducted. Finally, the study used data collected from only poor households as consumers of financial services. It ignored other users of financial services provided by financial intermediaries. Further studies may consider other users in future.

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