Does trust in financial institutions drive formal saving? Empirical evidence from Ghana

Samuel Tawiah Baidoo and Linda Akoto

1. Introduction

The significant contribution of financial institutions to the economic growth of countries is certainly not in dispute. According to researchers (for example, Gurley and Shaw 1955; Levine 1997; Miller 1998; Schumpeter 1934; Walle 2014), stable and efficient financial institutions exert a positive impact on economic growth. Financial institutions play a key role by serving as intermediary between the deficit and surplus units (Demirguc-Kunt and Levine 2008; Mishkin 2007). This crucial role is facilitated by mobilising savings from individuals who have surplus funds but do not have an immediate use for them. These excess funds mobilised by the financial institutions are subsequently made available to individuals who have insufficient or no funds but want to spend or invest now. Saving is also reported to be beneficial to individuals: it facilitates wealth accumulation, consumption smoothing (an economic concept used to express the desire of people to have a stable path of consumption), access to education and health, investment, insurance against emergencies, relaxation of credit constraints and, most importantly, poverty reduction (Goldberg 2014; Prina 2015). However, the decision by the surplus units to deposit their excess funds at the financial institutions depends on the trust and confidence level in these institutions as well as their easy accessibility (see, for instance, Ajayi 2016; Beckmann and Mare 2017; Delis and Mylonidis 2015; El-Attar and Poschke 2011; Filipiak 2016; Rogg 2000; Guiso, Sapienza and Zingales 2008).

Samuel Tawiah Baidoo holds a Master of Philosophy degree in economics and he is affiliated with Department of Economics, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana. He is currently a Project Research Assistant and PhD student at the Department of Economics, KNUST. His research interests include microeconomics, monetary economics and economic policy analysis.
Email: samueltawiahbaidoo@yahoo.com
Linda Akoto holds a Master of Philosophy degree in economics and she is currently a PhD candidate at the Department of Economics, University of Ghana, Legon. Her research interests include monetary economics, economic policy analysis and international economics.
Email: akotol@ymail.com.

Notwithstanding the importance of savings detailed earlier, mobilisation of savings by financial institutions has become arduous due to the alarming rate at which financial institutions collapse and are taken over. This is so because as the financial institutions collapse, individuals lose trust in saving their excess funds at those financial institutions. With regard to take-overs, individuals who may not understand properly the notion of take-over may also panic, and for that matter not save at the financial institution. Many people in developing countries have resorted to informal ways of saving (such as saving at home, with friends or family members) because of their low trust in financial institutions. In the case of Ghana, for instance, mention can be made of UT and Capital banks which were recently acquired by the GCB bank because of insolvency. Subsequently, uniBank was also taken over by the Bank of Ghana due to abysmal performance.

Other microfinance institutions have also collapsed in recent times (for example, DKM microfinance) with others under surveillance by the Bank of Ghana to avoid possible collapse. Following these, many Ghanaians, especially those who have a bank account with some of these financial institutions, are worried, bearing in mind the potential negative consequences such as loss of funds (especially with the unlicensed financial institutions) and inconvenience associated with these collapses, acquisitions and take-overs.

The instability in financial institutions which makes formal ways of saving unattractive is also documented by researchers. For example, Honohan (2008) and Stix (2013) report that the adoption of basic financial services such as saving is low in many developing countries and this is confirmed by Goldberg (2014), who reports that many people in the developing world rarely save in their formal bank accounts. Stix (2013) further adds that many people prefer to hold cash rather than saving at financial institutions due to distrust and memories of past banking crises. The negative effect of saving outside the financial institutions on the economic growth of countries is also well-known (see, for example, Stix 2013). For instance, saving outside the financial institutions implies that individuals with viable investment plans which have the potential of enhancing economic growth may not have access to sufficient funds to undertake these projects.

Saving outside a financial institution is indeed an issue of concern considering its potential negative repercussions on economies. It is, therefore, indispensable for central banks of countries, including the Bank of Ghana and other stakeholders in the financial industry to put measures in place to resuscitate the trust of individuals in the financial institutions to boost domestic savings mobilisation.

Indeed, it is imperative to enhance domestic savings mobilisation in economies considering that saving is vital, especially in the absence of foreign aid and capital inflows, and also as far as economic growth is concerned. In Ghana, for instance, gross domestic savings (as a percentage of gross domestic product – GDP) remain low and this can be attributed to the predominant use of informal ways of saving. For example, gross domestic savings as a percentage of GDP has not gone beyond 20 per cent compared with other sub-Saharan African countries such as Gabon (45.9 per cent), Republic of Congo (28.1 per cent) and Côte d'Ivoire (23.8 per cent) since 1960 (World Bank 2017). Again, data from the World Bank's World Development Indicators shows that Ghana's average gross domestic savings (as a percentage of GDP) from 1960 to 2016 is lower than the average figure for the sub-Saharan Africa region, which is 15.9 per cent. For instance, it averaged 11.48 per cent (1960–1970), 9.37 per cent (1971–1980), 4.81 per cent (1981–1990), 7.54 per cent (1991–2000), 9.75 per cent (2001–2016) and 8.76 per cent (1960–2016) (World Bank 2017). These figures certainly call for urgent intervention in order to improve domestic savings in Ghana to facilitate economic growth; and one of the ways can be through the adoption of formal methods of saving which also depends on individuals' trust in formal financial institutions.

Trust is seen as a key aspect of one's life and is therefore regarded as essential as far as economic decisions are concerned. The role of trust in economic decisions is reported in the literature (see, for instance, Ajayi 2016; Bachas, Gertler, Higgins and Seira 2016; Beckmann and Mare 2017; Delis and Mylonidis 2015; El-Attar and Poschke 2011; Filipiak 2016; Mosch and Prast 2008; Guiso, Sapienza and Zingales 2008). For instance, Mosch and Prast (2008) report that trust influences individuals' decision to undertake transactions with financial institutions. Bachas, Gertler, Higgins and Seira (2016) also add that trust is crucial in every economic transaction. Similarly, Allen *et al.* (2012) note that trust is key as far as the development of financial institutions is concerned. These writers, therefore, emphasise the need for countries to enhance individuals' trust. Consequently, boosting individuals' trust in financial institutions has the potential to improve financial inclusion as noted by Adusei (2013) and Ogunleye (2017). This is so because the unbanked individuals will be motivated to use the financial services and products (such as saving) of these institutions.

Notwithstanding the importance of trust in making economic decisions, several previous studies on determinants of saving at formal financial institutions (see, for example, Ajayi 2016; Beckmann and Mare 2017; Gaisina 2014; Kibert *et al.* 2009; Mumin, Mohammed and Kasim 2016; Sedirwa 2015; Tandoh and Tandoh 2015) have not emphasised the role of trust, with the exception of Ajayi (2016) on Nigeria and Beckmann and Mare

(2017) on central, eastern and southeast Europe. The limited empirical evidence on the role of trust in making economic decisions, especially in Ghana and sub-Saharan Africa, certainly gives cause to worry. Therefore, the present study examines the effect of trust on individuals' decisions to save at financial institutions.

This study makes at least two vital contributions. First, this paper contributes to the limited knowledge regarding the potential role of trust in making economic decisions, especially in Ghana and the sub-Saharan Africa region. Again, to the best of the authors' knowledge, this paper is the first of its kind to examine the effect of trust on individuals' decision to save at the financial institutions in Ghana. The study also goes beyond existing literature by examining the moderating effect of individuals' education level on the relationship between trust and the decision to save at formal financial institutions. We argue that individuals who have attained some form of formal education are likely to understand operations of financial institutions better and are hence likely to have more trust in them. As a result, the decision to save at these financial institutions is likely to be enhanced. Finally, this study sheds new light on how the trust of individuals can be boosted in order to encourage formal ways of saving in Ghana and other developing countries to facilitate economic growth.

The remaining of the paper proceeds as follows. Sections 2 and 3 focus on a literature review and the methodologies this study adopts. Section 4 presents the empirical results and discussion, while the final section is devoted to conclusions and policy implications.

2. Literature review

The importance of certain norms and characteristics of individuals, including trust, religious affiliation and social interaction in making economic and financial decisions such as saving, insurance, and investment is well documented by researchers and economists (see, for example, Ajayi 2016; Beckmann and Mare 2017; Brown *et al.* 2008; Hong, Kubik and Stein 2004; McCleary 2007; Renneboog and Spaenjers 2012). Trust which is the focus of the study is conceptualised as when two parties engaged in transaction have more confidence in each other: each party can rely on the other without any disappointment throughout the transaction period. Trust is also asserted to be based on the trustworthiness of a person or an organisation (Robbins 2016) and envisaged as key in decision-making and in any market transaction (see Ajayi 2016; Beckmann and Mare 2017; Bhati 2015; Robbins 2016). These authors have further indicated the importance of communication and information-sharing in building trust. It therefore connotes that information asymmetry theory can be used to explain the link between trust and decision-making. Information asymmetry is when one party to a transaction has more or better information than the other. In the case where one party to a transaction has more information than the other, trust or confidence level is likely to be affected and this will eventually affect decision-making.

Relating the above information to the current study, the decision to save at financial institutions will depend on the information available to individuals. Individuals may not be interested in saving at financial institutions if there is inadequate information with regard to operations and sustainability of these institutions. However, trust is likely to exist if there is full disclosure of information and this can affect individuals' decisions to have formal savings. The inadequate information about financial institutions which tend to affect trust can emanate from two sources. On one hand, an individual may not be in position to have full information regarding the operations of financial institutions due to lack of formal education which facilitates reading and understanding. For instance, El-Attar and Poscke (2011) note that individuals who attain a higher level of education are able to understand the operations of financial institutions and therefore tend to have more trust in them, which in turn influences their decision to adopt financial products. It then suggests that the effect of trust on a decision to save can be moderated by an individual's education level. On the other hand, a financial institution may not like to disclose full information to the public, probably due to abysmal performance, because it can discourage individuals from patronising their products such as saving. Consequently, if individuals cannot confidently rely on financial institutions due to inadequate information, then their decision to save with them will also be affected.

On the empirical front, several studies have investigated the determinants of saving at financial institutions in Ghana and other parts of the world

(see, for example, Ajayi 2016; Amu and Amu 2012; Baidoo, Boateng and Amponsah 2018; Beckmann and Mare 2017; Chikoko, Pierre and Dzingirai 2013; Gaisina 2014; Issahaku 2011; Kibert *et al.* 2009; Komla 2012; Mumin, Mohammed and Kasim 2016; Mumin, Razak and Domanban 2013; Sedirwa 2015; Tandoh and Tandoh 2015). These studies have revealed age, gender, income, education level, employment, wealth and household size as the factors that influence individuals' and households' saving decisions. Among these studies, only Ajayi (2016) and Beckmann and Mare (2017) focus on the role of trust.

For instance, Mumin, Razak and Domanban (2013) use 120 households in Bole district of Ghana and apply the logit regression to show that individuals who spend more years in school and have higher assets value are more likely to save compared with counterparts who spend fewer years in school and have lower assets value. Similarly, Chikoko, Pierre and Dzingirai (2013) apply logit regression to dataset on 350 households in Zimbabwe to reveal that households with higher income are more likely to save relative to those with lower income. Sedirwa (2015) also uses 1000 individuals in Botswana and employs probit regression to show that females, younger individuals, and individuals with a higher level of education are more likely to save compared with male, older individuals, and lower education level counterparts.

In a related study, Ajayi (2016) uses survey data on Nigeria and employs the probit regression to reveal that individuals with higher education and more wealth, who are employed and financially literate, are more likely to save. The study further shows that having more trust in financial institutions increases the likelihood of saving at banks, which is consistent with the study by Beckmann and Mare (2017). Beckmann and Mare (2017) use survey data from ten emerging markets in central, eastern and southeast Europe to examine the impact of trust on having formal savings. Using the probit estimation technique, the results show that having trust in financial institutions increases the probability of having formal savings. The study further reveals that individuals who are more financially literate and earn a higher income are more likely to have formal savings. Recently, Baidoo, Boateng and Amponsah (2018) also use 600 individuals in Ghana and apply the probit regression to show that higher income, a higher education level, being financially literate and employed increase the probability of saving at financial institutions.

3. Methodology

This section is divided into three parts. The first and second parts present data and estimation technique and model specification, while the third part focuses on the variable description.

3.1 Data and estimation technique

This study relies on primary data and the binary probit is employed for the analysis. The data is obtained from individuals who are 18 and over in Ghana using a structured questionnaire. The data is collected within a six-month period (January 2016 to June 2016). The questions on the questionnaire capture socioeconomic characteristics of individuals. These include age, gender, education level, employment status, financial literacy level, trust in financial institutions, income level, and saving status. The questionnaire is administered using both assisted and self-administered approaches. These two approaches ensure that individuals who cannot read, understand, or write in English (the language used for the questionnaire designing) are not ignored in the study (Baidoo, Boateng and Amponsah 2018). The motivation for focusing on individuals who are 18 and over is due to the fact that they are not considered children by Ghana's Constitution and therefore can open an independent bank account for transactions and other purposes such as saving. Again, according to Baidoo, Boateng and Amponsah (2018), these are individuals who can undertake meaningful jobs, earn an income and possibly save some of it.

The population of individuals who are 18 and over, according to the 2010 Population and Housing Census (PHC) by Ghana Statistical Service (GSS) (2013), is 13,632,299. Out of this number, we use stratified random sampling technique which is also adopted by previous studies (see, for example, Issahaku 2011; Sedirwa 2015) to select 800 respondents from two highly densely populated regions in Ghana – the Greater Accra and Ashanti regions. In obtaining the sample size, we divided Ghana into northern and southern belts. The northern belt consists of middle and northern parts of Ghana, while the southern belt comprises coastal and southern parts of Ghana. Subsequently,

Accra and Kumasi, the capital cities for Greater Accra and Ashanti regions respectively, were selected to represent the southern and northern belts. Next, 400 respondents were randomly selected from each of these two areas to provide responses to the questions and statements on the questionnaire. This study selected these two cities because Accra and Kumasi are the first and second areas in Ghana with the largest populations: 4,780,380 and 4,010,054 representing 19.39 per cent and 16.26 per cent respectively (Baidoo, Boateng and Amponsah 2018).

Further, these two regions are experiencing population growth due to migration, given the economic opportunities in these areas as noted by Baidoo, Boateng and Amponsah (2018). The 2010 PHC report indicates that Ghanaians in the middle and northern parts and those in the coastal and southern parts migrate to Kumasi and Accra respectively. The report further reveals that all ethnic groups or tribes in Ghana are present in these two cities, as indicated by the statistics on population by region, type of locality, sex, and ethnicity (Ghana Statistical Service 2013). It therefore implies that different people of diverse culture and background can be interviewed in these two cities. Hence, the results from this study can be generalised to a greater extent.

With respect to the estimation technique, this study employs descriptive analysis and the binary probit regression. The binary probit regression was adopted given the binary nature of the dependent variable (either saving at financial institutions or not) (Asteriou and Hall 2011; Greene 2012). Although the study focuses on the binary probit estimation technique, the binary logit estimation technique is equally appropriate considering the binary nature of the dependent variable. However, it is argued that binary probit and logit produce similar results (see Asteriou and Hall 2011) and so we estimated the logit version of equation (2) to ascertain robustness of the probit results. After data cleaning to ensure completeness of the filled-in questionnaires, a sample size of 600 was finally used and this represented a response rate of 75 per cent. Finally, the robustness, soundness and reliability of the results obtained were checked by conducting diagnostic tests such as multicollinearity and a test-retest reliability. We conduct the reliability test using the Cronbach's alpha value proposed by Cronbach (1951). According to Field (2009), a questionnaire for data collection is reliable if the Cronbach's alpha value is 0.7 and above. A higher alpha value indicates a higher internal consistency among the items on the questionnaire and also implies that similar or the same responses or outcome can be obtained with the questionnaire if administered again. To address any potential hetereoschedasticity effect in this study, robust standard errors for the explanatory variables were estimated.

3.2 Model specification

This study follows past studies such as Sediwa (2015) and Beckmann and Mare (2017) and specifies a binary probit model to examine the effect of trust on the likelihood of saving at a financial institution. In addition, given that the coefficients of probit model have no direct economic meaning and also do not show the magnitude of the impact (see Asteriou and Hall 2011; Greene 2012), we further estimated the marginal effect at the means for each of the explanatory variables and interpreted it accordingly.

The functional and estimable forms of the probit model is specified in equations (1) and (2) respectively.

$$SAV = f(Trust,\ Age, Gen,\ Educ, Emp, Inc, Finlit. \quad (1)$$

$$SAV_i = \alpha + \gamma_1 Trust_i + \gamma_2 Age_i + \gamma_3 Gen_i + \gamma_4 Educ_i + \gamma_5 Emp_i + \gamma_6 Inc_i + \gamma_7 Finlit_i + \varepsilon. \quad (2)$$

From equation (2), *SAV* denotes saving at a financial institution and is the dependent variable and the independent variables are *Trust, Age, Gen, Educ, Emp, Inc* and *Finlit* and they represent trust, age, gender, education level, employment status, income and financial literacy level of the respondents respectively. α is the constant term whereas γ_is ($i = 1, 2, 3, \ldots, 7$) are the coefficients of the respective variables. ε denotes the stochastic error term of the model. The choice of the explanatory variables is influenced by past studies (see, for instance, Baidoo, Boateng and Amponsah 2018; Beckmann and Mare 2017; Mumin, Razak and Domanban 2013; Tandoh and Tandoh 2015).

3.3 Variable description

In this study, we define saving which is the dependent variable as any amount deposited at any financial institution. It must be emphasised that saving in this study refers to formal saving at a financial institution. Therefore we do not consider monies kept at home, with friends and family members, or in the form of any property or assets as saving, following the study by Baidoo, Boateng and Amponsah (2018). In obtaining the saving variable, this study follows past studies such as Issahaku (2011) and Demirguc-Kunt and Klapper (2012) and ask the respondents "*have you saved or deposited any money in your bank account at any financial institution in the past 12 months?*" The response is either "yes" or "no". Hence the variable is measured as a binary dummy and takes a value of 1 (probability of saving at financial institution) if a respondent answers "yes" and 0 (probability of not saving at financial institution) if the response is "no". A similar approach has been used by Sedirwa (2015) in obtaining the saving variable.

Regarding the independent variable of interest, trust, we define it as the confidence individuals have in the financial institutions in terms of their operations and sustainability. Specifically, this study looks at trust in relation to the safeness of monies kept with these financial institutions by individuals taking into consideration their stability and trustworthiness. To this end, we obtain this variable by specifically asking the respondents "*how will you rate your trust in the financial institutions in terms of safeness in saving/keeping your money with them on a scale of 1–4 (1 being the lowest and 4 being the highest)*". The scores generated from the respondents based on their responses are then used for the analysis. Beckmann and Mare (2017) use a similar approach to obtain the trust variable for their study.

Gender represents the sex of respondents and is measured as a binary dummy. Gender takes the values of 1 and 0 for male and female respondents respectively. Age, education level, employment status, and income are measured as categorical variables. Age has five categories: 18–24 years, 25–39 years, 40–54 years, 55–60 years and over 60 years, which is the reference category. Similarly, education level has five categories: no formal education (reference group), primary, Junior High School/Middle School Leaving Certificate (JHS/MSLC), Senior High School/Ordinary Level (SHS/O'Level) and tertiary. In this study we disaggregate employment status of respondents into public sector employees (reference group), private sector employees, and self-employed instead of just employed and unemployed. The motivation for this disaggregation is to examine the effect of the sector in which an individual is employed on the likelihood of saving at a financial institution. Income represents the monthly income in Ghana cedis (GHS) of the respondents. For respondents in formal employment it is their disposable income, whereas for those in informal employment it is the average amount received each working day multiplied by the number of working days in the month. The income variable has six categories: less than GHS200.00 (reference category), GHS201.00–GHS400.00, GHS401.00–GHS600.00, GHS601.00–GHS800.00, GHS801.00–GHS1000.00 and over GHS 1000.00.

With regard to the financial literacy variable, we follow Baidoo, Boateng and Amponsah (2018) and define it as the general knowledge and understanding that enable individuals to make sound and informed decisions regarding their financial resources as well as to manage these financial resources effectively. Regarding the measurement of the financial literacy variable, we again follow the approach of past studies such as the Organisation for Economic Co-operation and Development (OECD) (2005), Presidents' Advisory Council on Financial Literacy (PACFL) (2008), Atkinson and Messy (2012), Klapper, Lusardi and Panos (2012), Lusardi and Mitchell (2011a, 2011b, 2014) and Fernandes, Lynch Jr and Netemeyer (2014) and ask the respondents to provide responses to five financial literacy related statements.[1] The statements relate to interest rate, inflation and risk diversification as used in the aforementioned studies and have binary responses: either "yes" or "no". Then we create a financial literacy score on a scale of 0–5 based on responses by the respondents to the five statements constructed and the scores are then used for the analysis.

We expect a positive relationship between trust and savings at a financial institution. All other things being equal, when the confidence of individuals in the financial institutions is boosted they are likely to save with these institutions because all fears are put to rest and they are certain about the safety of their monies. Similarly, this study expects

a positive relationship between age, education, employment and income categorical variables and savings. We also expect financial literacy and gender to have a positive relationship with savings. For instance, being more financially literate is expected to enhance one's knowledge on the importance of saving at a financial institution, and likewise having some form of formal education.

4. Results and discussion

This section of the study is divided into two parts. The first part is devoted to the discussion of the descriptive statistics of the respondents' socioeconomic characteristics, while the second part presents the discussion on the estimates from the binary probit regression.

4.1 Descriptive analysis

The summary statistics of the respondents' socioeconomic characteristics is reported in Table 1.

The results in Table 1 show that most of the respondents are within the age category of 18–54 years and only nine are over 60 years. Regarding gender, the results show that 372 are males and 228 are females and these represent 62 and 38 per cent respectively. With respect to education, it is revealed that 19 of the respondents have no formal education whereas 27, 152, 185 and 217 respondents have primary, JHS/MSLC, SHS/O'Level and tertiary education respectively. The analysis of the employment status shows that 220, 156 and 213 respondents are public sector employees, private sector employee and self-employed.

With regard to financial literacy, it is found that 72, 98, 108, 117 and 205 respondents have 1, 2, 3, 4 and 5 correct responses. Further, it is shown that 72, 93 and 88 respondents earn an income of less than GHS200.00, GHS201.00–GHS400.00 and GHS401.00–GHS600.00 respectively. Respondents who earn an income of GHS601.00–GHS800.00, GHS801.00–GHS1000.00 and above GHS1000.00 are 108, 118 and 110 respectively. The analysis further indicates that 530 respondents save at financial institutions, whereas 70 respondents do not save at financial institutions. It must be noted that respondents who do not save at financial institutions use other informal ways of saving, including keeping monies at home, with friends, individual groups (locally called "susu") and some even dig holes and keep money in them. Regarding trust in the financial institutions which the respondents are asked to rate according to their own perception, the results reveal 1, 4 and 3.68 as the minimum, maximum and mean values respectively. A standard deviation value of 0.828 is also revealed. In terms of frequency, the analysis reveals that 40, 20, 32 and 508 respondents indicate 1, 2, 3 and 4 respectively as their ratings with regard to trust in financial institutions.

The study proceeds further to estimate equation (2) because the descriptive statistics expounded do not show the direction of the relationship and the effect of these variables on the likelihood of saving and the magnitude of their impact.

4.2 Regression results

In order to examine the effect of trust on the likelihood of saving at financial institution, we estimate equation (2) and the results are reported in Table 2.

With regard to the independent variable of interest – trust and the likelihood of saving at a financial institution – the results reveal a positive relationship. As individuals' trust in financial institutions increases (on a scale of 1 to 4) the likelihood of saving at these institutions also increases and is statistically significant. The marginal effect indicates that enhancement in individuals' trust in financial institutions increases the probability of saving with them by 3.1 percentage points at 1 per cent significance level. As individuals' trust in these financial institutions increases, they get more confidence in them because all fears are allayed. Subsequently, gaining more confidence encourages these individuals to save their monies at these financial institutions without any panic. This finding is consistent with Ajayi (2016) and Beckmann and Mare (2017), who report that trust enhances households' decision to hold formal savings by saving at the bank rather than holding informal savings. This result further confirms assertions by researchers (see, for instance, Delis and Mylonidis 2015; El-Attar and Poschke 2011; Filipiak 2016; Mosch and Prast 2008) that trust is key or essential in making economic decisions.

With respect to education and the likelihood of saving at financial institution, a positive relationship is also revealed. Attaining some level of formal education increases the likelihood of saving at

TABLE 1. Summary of descriptive statistics

Variable	*Frequency*	*Percentage*	*Variable*	*Frequency*	*Percentage*
Age (categorical years)			Gender		
18–24 years	100	16.7	Male	372	62.00
25–39 years	278	46.3	Female	228	38.00
40–54 years	171	28.5	Total	600	100
55–60 years	42	7.00			
Over 60 years	9	1.50			
Total	600	100			
Education			Employment status		
None	19	3.2	Public sector employees	220	36.7
Primary	27	4.5	Private sector employees	156	26.0
JHS/MSLC	152	25.3	Self-employed	213	35.5
SHS/O'Level	185	30.8	Unemployed	11	1.80
Tertiary	217	36.2	Total	600	100
Total	600	100			
Financial literacy			Monthly income		
1 Correct response	72	12.0	Less than GHS200.00	72	12.0
2 Correct responses	98	16.33	GHS201–GHS400.00	93	15.5
3 Correct responses	108	18.0	GHS401–GHS600.00	88	14.7
4 Correct response	117	19.5	GHS601–GHS800.00	108	18.0
5 Correct responses	205	34.17	GHS801–GHS1000.00	118	19.7
Total	600	100	Over GHS1000.00	110	18.3
			Do not earn income	11	1.80
			Total	600	100
Savings					
Save	530	83.83			
Do not save	70	16.17			
Total	600	100			
	Minimum	Maximum	Mean	Standard deviation	Observations
Trust	1	4	3.68	0.828	600

Source: Authors' estimation.

financial institution. The marginal effect shows that having JHS/MSLC education, SHS/O'Level education and tertiary education increases the probability of saving at financial institutions by 6.9 percentage points, 11.5 percentage points and 9.3 percentage points respectively at 5 per cent significance level. By implication, having formal education enhances one's knowledge of the importance of saving at financial institutions, such as earning interest. The effect of having primary education on the likelihood of saving at financial institutions is, however, not significant and this is not surprising since the knowledge an individual acquires at this level is very low. Similar findings have been reported in past studies (see, for example, Amu and Amu 2012; Issahaku 2011; Komla 2012).

Again, the results in Table 2 indicate that there is a positive and significant relationship between income categorical variables and the probability of saving at a financial institution. Individuals who earn a relatively higher income are more likely to save at financial institutions compared with those who earn a relatively lower income. Specifically, earning income above the reference category (GHS200.00) increases the likelihood of saving at financial institution. Precisely, earning income of GHS201.00–GHS400.00, GHS401.00–GHS600.00, GHS601.00–GHS800.00, GHS801.00–GHS1000.00 and over GHS1000.00 increases the probability of saving at a financial institution by 6.9 percentage points, 9 percentage points, 8.7 percentage points, 10.4 percentage points and 8.5 percentage points respectively at 1 per cent significance level. This positive relationship can be explained by the fact that individuals who earn a substantial income may want to save a portion of it at financial institutions after taking care of all their social and economic needs, in the hope of earning interest on the deposited amount and also to avoid misuse of the funds or theft. On the other hand, individuals who earn a relatively lower income may not be able to save a portion of their income because

TABLE 2. Estimates from the binary probit regression

Variable	*Coefficient*	*Robust std. error*	*Marginal effect*	P *value*
Trust	0.214	0.079	0.031	0.008
Age (over 60 years)				
18–24 years	0.568	0.431	0.064	0.079
25–39 years	0.734	0.407	0.106	0.072
40–54 years	0.489	0.415	0.062	0.178
55–60 years	1.212	0.527	0.086	0.000
Gender (female)				
Male	−0.131	0.157	−0.019	0.398
Education (none)				
Primary education	0.507	0.516	0.053	0.132
JHS/MSLC education	0.574	0.331	0.069	0.036
SHS/O'Level education	0.991	0.367	0.115	0.001
Tertiary education	0.721	0.387	0.093	0.041
Employment status (Public)				
Private sector	0.904	0.229	0.100	0.000
Self-employed	1.157	0.234	0.142	0.000
Income (< GHS200.00)				
GHS201.00–GHS400.00	0.643	0.263	0.069	0.001
GHS401.00–GHS600.00	0.995	0.290	0.090	0.000
GHS601.00–GHS800.00	0.873	0.251	0.087	0.000
GHS801.00–GHS1000.00	1.093	0.290	0.104	0.000
Over GHS1000.00	0.829	0.269	0.085	0.000
Financial literacy	0.395	0.460	0.044	0.236
Constant	−2.111	0.543	-	0.000
Number of observation	600			
Pseudo R-square	0.174			
Prob > chi-square	0.000			
Wald chi-square (18)	74.13			
Predictive power	0.922			

Note: Reference categories are in brackets.
Source: Authors' estimation.

the amount may not be sufficient to cater for all their social and economic needs. In addition, given the relatively lower income, these individuals may want their funds at their disposal in order to have easy access to it when the need arises and hence may not save at financial institutions. Also, these individuals who earn a relatively lower income may not save at financial institutions, bearing in mind the charges associated with excess withdrawals in a month. In Ghana specifically, most savings accounts of the financial institutions allow a limited number of withdrawals per month.[2] Withdrawals exceeding this monthly limit attract a charge or fee. Therefore these extra charges may discourage these individuals from saving at these financial institutions given that they might withdraw more than the given limit. Past studies on Ghana, such as Tandoh and Tandoh (2015) and Issahaku (2011), and other countries (see, for example, Gaisina (2014) on Kazakhstan; Sedirwa (2015) on Botswana) have also reported a positive relationship between income and the probability of saving at a financial institution.

Further, the study reveals a positive relationship between employment status and the probability of saving at financial institutions. Private sector employees and self-employed individuals are more likely to save at a financial institution compared with public sector employees. The results from the marginal effect indicate that being a private sector employee and self-employed increases the likelihood of saving at a financial institution by 10 percentage points and 14.2 percentage points accordingly at 1 per cent significance level. This finding can also be explained by the fact that individuals in the private sector and self-employed categories mostly do not have a regular income or secure jobs relative to their counterparts in the public sector. As a result, these individuals may try as much as possible to save a portion of their income at financial institutions to guard against any contingency. Given the importance of these monies set aside for any unforeseen eventuality, individuals in these category of employment may not want to have the money close to them or at their

disposal and hence save at financial institutions. Again, the extra charges associated with excess withdrawals on savings accounts of the financial institutions may also (by way of discouraging excessive withdrawals) help these individuals to achieve their purpose – saving the money for any eventuality which may not be achievable if the money is at their disposal. This result confirms the finding by Mumin, Mohammed and Kasim (2016) on Ghana but contradicts that of Chikoko, Pierre and Dzingirai (2013) on Zimbabwe.

The present study does not show any significant impact with respect to the relationship between age, gender, financial literacy and the likelihood of saving at a financial institution, although the direction of the relationship is positive. With respect to financial literacy, whilst this study finds an insignificant relationship, Baidoo, Boateng and Amponsah (2018) report a positive and significant relationship. In addition, the insignificant relationship between age, gender and the probability of saving at financial institution in the current study is not different from the findings by Chikoko, Pierre and Dzingirai (2013), Sedirwa (2015) and Tandoh and Tandoh (2015).

Subsequently, the binary logit version of equation (2) is estimated to ascertain the robustness of the probit regression outcome and the results are reported in Table A1 (see Appendix). The estimates from the logit regression are not statistically different from those obtained from the binary probit in terms of direction of relationships and significance levels, indicating the robustness of the results. Regarding the variable of interest (trust), the results show that the probability of saving at a financial institution increases by 2.6 percentage points as individuals' trust in financial institutions increases.

After examining the main effect of trust on individuals' decisions to save at financial institutions, the study proceeds further with moderation analysis where the interaction effect of individuals' education level and trust on the probability of saving at financial institution is examined. We hypothesise that the effect of trust on the probability of saving at financial institutions is moderated by the education level of individuals. Therefore, equation (2) is modified to include the interaction term of trust and education categorical variables. The results from the binary probit are reported in Table 3 whilst the logit version is reported in Table A2 (see Appendix).

The results in Table 3 indicate that the effect of the interaction terms on the likelihood of saving at a financial institution is positive and significant with the exception of the primary education category (positive but insignificant). It is worth noting that the magnitude of the impact of trust on decision to save when interacted with education is relatively higher compared with the effect without the interaction (see Table 2). Specifically, the marginal effect shows that attaining JHS/MSLC, SHS/O'Level and Tertiary education and having more trust increase the probability of saving at the financial institution by 7.2 percentage points, 11.9 percentage points and 9.9 percentage points respectively compared with 6.9 percentage points, 11.5 percentage points and 9.3 percentage points for JHS/MSLC, SHS/O'Level and Tertiary education respectively for the results without interaction reported in Table 2. This means that the effect of trust on the likelihood of saving at the financial institution is significantly moderated by the education level of individuals. The results further indicate that the effect of the remaining variables on the probability of saving at financial institutions in terms of direction and significance level are not different from those reported earlier in Table 2. For instance, the effect of trust and education without interaction on the likelihood of saving is still positive and significant.

Finally, regarding the reliability and robustness of the estimated results, the reliability and correlation tests are conducted and the results are reported in Table A3 and Table A4 respectively (see Appendix). From Table A3 it is observed that the overall Cronbach's alpha value is 0.732, which is higher than the proposed 0.7 by Field (2009). The minimum and maximum alpha values for the variables are 0.710 and 0.759 respectively and are all greater than the proposed reliable alpha value. The implication of these relatively higher alpha values is that similar or same responses or outcomes can be obtained when the same questionnaire is administered again. Also, it can be inferred from Table A4 that multicollinearity is not an issue in the present study because none of the correlation coefficients is greater than 0.5. These outcomes from the diagnostic tests further imply that the estimated results expounded are robust, reliable and sound for policy purposes.

TABLE 3. Binary probit estimates – moderation analysis (education and trust)

Variable	*Coefficient*	*Robust std. error*	*Marginal effect*	P *value*
Trust	0.214	0.079	0.032	0.008
Education (none)				
Primary education	0.487	0.522	0.051	0.160
JHS/MSLC education	0.562	0.337	0.068	0.046
SHS/O'Level education	0.976	0.373	0.114	0.002
Tertiary education	0.711	0.395	0.092	0.049
Education (none * trust)				
Primary education * Trust	0.545	0.518	0.056	0.093
JHS/MSLC education * Trust	0.600	0.328	0.072	0.027
SHS/O'Level education * Trust	1.024	0.364	0.119	0.001
Tertiary education * Trust	0.765	0.384	0.099	0.028
Age (over 60 years)				
18–24 years	0.522	0.437	0.060	0.120
25–39 years	0.726	0.411	0.104	0.079
40–54 years	0.511	0.422	0.064	0.164
55–60 years	1.235	0.532	0.086	0.000
Gender (female)				
Male	−0.132	0.157	−0.020	0.396
Employment status (Public)				
Private sector	0.893	0.229	0.099	0.000
Self-employed	1.162	0.233	0.142	0.000
Income (< GHS200.00)				
GHS201.00–GHS400.00	0.670	0.262	0.071	0.000
GHS401.00–GHS600.00	1.019	0.297	0.091	0.000
GHS601.00–GHS800.00	0.901	0.262	0.089	0.000
GHS801.00–GHS1000.00	1.120	0.298	0.105	0.000
Over GHS1000.00	0.863	0.280	0.087	0.000
Financial literacy	0.354	0.463	0.041	0.311
Constant	−2.047	0.556	-	0.000
Number of observation	600			
Pseudo R-square	0.175			
Prob > chi-square	0.000			
Wald chi-square (22)	73.66			
Predictive power	0.922			

Note: Reference categories are in brackets.
Source: Authors' estimation.

5. Conclusions and policy implications

In this paper, we examine the potential effect of trust on individuals' decision to save at financial institutions. A sample size of 600 individuals is used and the binary probit regression is employed for the analysis. The study reveals a positive relationship between trust and the likelihood of saving at financial institutions. It is also evident that the effect of trust on probability of saving at financial institutions is significantly moderated by the education level of individuals. Again, a positive and significant relationship is found between education, income, employment status and probability of saving at financial institutions. Based on these findings the following conclusions are drawn. First, the probability of saving at financial institutions increases with individuals' trust. In addition, individuals who have attained a higher level of education, earn substantial income, are self-employed and private sector employees are more likely to save at financial institutions.

The present paper has some good policy implications for stakeholders in the financial industry, especially the Bank of Ghana. Based on the positive and significant relationship between trust and saving at financial institutions, the paper recommends that the Bank of Ghana institutes policies that seek to boost the trust of individuals in the financial institutions. Specifically, the Bank of Ghana has to intensify its supervisory activities and also control the activities of existing licensed financial institutions effectively in order to ensure their stability and sustainability. This is likely to reduce the rate at which financial institutions collapse

in the country. The decline in the collapsing rate will therefore invigorate individuals' trust in these institutions and hence formal ways of saving will be adopted. Consequently, having enough savings available will then serve as funds for investment to facilitate economic growth.

Further, given that only activities of licensed financial institutions can be effectively monitored or controlled, the study recommends that the Bank of Ghana keeps the banking system under supervision. This is because the majority of financial institutions that experience abysmal performance or collapse are those not given approval by the Bank of Ghana to operate. As a result, these institutions engage in risky activities which tend to cause their abysmal performance or collapse and further exacerbate the distrust of individuals in financial institutions. Therefore, careful observation of the banking system by the Bank of Ghana is likely to help identify these unlicensed financial institutions and the appropriate sanction(s) given accordingly. Subsequently, the names of these unapproved institutions can be published to reassure the general public about the stability in the banking system. This will then enable individuals who have surplus funds to identify appropriate financial institutions with which to save their funds.

In all, having a stable and vibrant banking system will promote domestic savings through enhancing the trust of individuals in financial institutions. Also, boosting individuals' trust tends to improve financial inclusion in the country because the unbanked will be motivated to use the services and products of these financial institutions.

Notes

1. The five statements are: (1) I can earn interest on my money if I save with the financial institution; (2) I will gain in the future for saving portion(s) of my income now; (3) I do financial planning for the future; (4) When I borrow money from the financial institution, I will pay interest in addition to the principal amount; and (5) When there is inflation, the value of my money reduces.

2. Currently, some of the banks in Ghana have a maximum of two to four withdrawals a month on their savings accounts. For example, Barclays Bank Ghana presently has a maximum of two withdrawals a month for its savings account holders.

Appendix A

TABLE A1. Estimates from the binary logit regression

Variable	*Coefficient*	*Robust Std. Error*	*Marginal Effect*	P *value*
Trust	0.382	0.139	0.026	0.006
Age (above 60 years)				
18-24 years	1.018	0.745	0.053	0.172
25-39 years	1.359	0.682	0.093	0.046
40-54 years	0.844	0.695	0.050	0.225
55-60 years	2.246	0.993	0.076	0.024
Gender (female)				
Male	−0.197	0.318	−0.013	0.537
Education (none)				
Primary education	1.176	1.097	0.052	0.284
JHS/MSLC education	1.045	0.569	0.059	0.066
SHS/O'Level education	1.859	0.638	0.103	0.004
Tertiary education	1.294	0.685	0.079	0.059
Employment status (Public)				
Private sector	1.710	0.458	0.089	0.000
Self-employed	2.143	0.441	0.126	0.000
Income (< GHS200.00)				
GHS201.00-GHS400.00	1.193	0.501	0.059	0.017

(Continues)

TABLE A1. (Continued)

Variable	*Coefficient*	*Robust Std. Error*	*Marginal Effect*	P *value*
GHS401.00-GHS600.00	1.912	0.576	0.080	0.001
GHS601.00-GHS800.00	1.571	0.482	0.074	0.001
GHS801.00-GHS1000.00	2.105	0.567	0.093	0.000
Above GHS1000.00	1.537	0.517	0.074	0.003
Financial literacy	0.821	0.892	0.041	0.357
Constant	−3.990	0.933	-	0.000
Number of Observation	600			
Pseudo R-square	0.175			
Prob > Chi-square	0.000			
Wald chi-square (18)	69.89			
Predictive Power	0.926			

Note: Reference categories are in parenthesis.
Source: Authors' estimation.

TABLE A2. Binary logit estimates - Moderation analysis (Education and Trust)

Variable	*Coefficient*	*Robust Std. Error*	*Marginal Effect*	P *value*
Trust	0.382	0.140	0.026	0.008
Education (none)				
Primary education	1.141	1.118	0.051	0.087
JHS/MSLC education	1.012	0.588	0.057	0.044
SHS/O'Level education	1.814	0.657	0.100	0.002
Tertiary education	1.246	0.718	0.076	0.069
Education (none * trust)				
Primary education * Trust	1.257	1.096	0.055	0.041
JHS/MSLC education * Trust	1.096	0.562	0.062	0.021
SHS/O'Level education * Trust	1.929	0.630	0.107	0.000
Tertiary education * Trust	1.393	0.675	0.086	0.029
Age (above 60 years)				
18-24 years	0.941	0.753	0.050	0.109
25-39 years	1.345	0.689	0.092	0.060
40-54 years	0.887	0.710	0.053	0.160
55-60 years	2.285	0.998	0.076	0.000
Gender (female)				
Male	−0.198	0.318	−0.013	0.530
Employment status (Public)				
Private sector	1.686	0.458	0.088	0.000
Self-employed	2.142	0.440	0.126	0.000
Income (< GHS200.00)				
GHS201.00-GHS400.00	1.244	0.499	0.061	0.000
GHS401.00-GHS600.00	1.965	0.590	0.081	0.000
GHS601.00-GHS800.00	1.640	0.516	0.076	0.000
GHS801.00-GHS1000.00	2.170	0.591	0.095	0.000
Above GHS1000.00	1.615	0.546	0.076	0.000
Financial literacy	0.753	0.899	0.038	0.241
Constant	−3.861	0.961	–	0.000
Number of Observation	600			
Pseudo R-square	0.176			
Prob > Chi-square	0.000			
Wald chi-square (22)	69.39			
Predictive Power	0.926			

Note: Reference categories are in parenthesis.
Source: Authors' estimation.

TABLE A3. Reliability test results

Item	*Observation*	*Item-test correlation*	*Average inter-item correlation*	*Cronbach's alpha*
Trust	600	0.421	0.165	0.734
Age	600	0.626	0.149	0.710
Gender	600	0.179	0.183	0.759
Education	600	0.197	0.182	0.757
Employment status	600	0.604	0.151	0.713
Income	600	0.575	0.153	0.716
Financial literacy	600	0.421	0.165	0.734
Test scale			0.164	0.732

Source: Authors' estimation.

TABLE A4. Correlation test results

Variable		*1*	*2*	*3*	*4*	*5*	*6*	*7*
Trust	(1)	1.000						
Age	(2)	0.186	1.000					
Gender	(3)	−0.125	−0.083	1.000				
Education	(4)	0.178	−0.077	−0.204	1.000			
Employment status	(5)	−0.104	−0.117	0.036	−0.043	1.000		
Income	(6)	−0.059	−0.085	−0.001	0.046	0.487	1.000	
Financial Literacy	(7)	−0.377	−0.053	−0.050	−0.013	−0.025	−0.040	1.000

Source: Authors' estimation.

References

ADUSEI, M., 2013. Determinants of credit union savings in Ghana. *Journal of international development*, 25 (1), 22–30. https://doi.org/10.1002/jid.2828.

AJAYI, K. F., 2016. Consumer perceptions and saving behaviour. Working Paper, Department of Economics and Center for Finance, Law and Policy, Boston University. Available at: https://pdfs.semanticscholar.org/bbe3/c7a90291bbad2c1be081ab939441d621b2ee.pdf.

ALLEN, F., RAJESH, C., DE, S., QIAN, J. AND QIAN, M., 2012. Financing firms in India. *Journal of financial intermediation*, 21 (3), 409–445.

AMU, K. E. M. AND AMU, E. K., 2012. Saving behaviour in Ghana: a study of rural households in the Ho Municipality of the Volta Region. *Online journal of social sciences research*, 1 (2), 54–61.

ASTERIOU, D. AND HALL, S., 2011. *Applied econometrics*. 2nd ed. New York: Palgrave Macmillan.

ATKINSON, A. AND MESSY, F., 2012. Measuring financial literacy: results of the OECD / International Network on Financial Education (INFE) Pilot Study. OECD Working Papers on Finance, Insurance and Private Pensions, No. 15. OECD Publishing. https://doi.org/10.1787/5k9csfs90fr4-en.

BACHAS, P., GERTLER, P., HIGGINS, S. AND SEIRA, E., 2016. Banking on trust: how debit cards help the poor to save more. Working Paper, UC Berkeley. Available at: https://economics.Yale.Edu/sites/default/files/bachasgertlerhigginsseira_v29.pdf.

BAIDOO, S. T., BOATENG, E. AND AMPONSAH, M., 2018. Understanding the determinants of saving in Ghana: does financial literacy matter? *Journal of international development*, 30 (5), 886–903. https://doi.org/10.1002/jid.3377.

BECKMANN, E. AND MARE, D. S., 2017. Formal and informal household savings: how does trust in financial institutions influence the choice of saving instruments? Working Paper, Foreign Research Division, Oesterreichische Nationalbank, Vienna, Austria. Available at: https://mpra.Ub.uni-muenchen.de/81141/1/MPRA_paper_81141.pdf.

BHATI, S. S., 2015. Relation between trust theory and agency theory. *In*: Natarajan, S., Ganesh, M., Babu, M., Nagarjuna, B. and Rajkumar, R. eds *Commerce and management – a modern perspective* (pp. 57–65). India: Archers and Elevators Publishing House. Available at: https://ro.uow.edu.au/cgi/viewcontent.cgi?referer=https://scholar.google.com/&httpsredir=1&article=1792&context=buspapers.

BROWN, J., IVKOVIC, Z., SMITH, P. AND WEISBENNER, S., 2008. Neighbors matter: causal community effects and stock market participation. *Journal of finance*, 63 (3), 1509–1531.

CHIKOKO, L., PIERRE, L. R. AND DZINGIRAI C., 2013. Microeconometric

analysis of the determinants of savings behaviour in Zimbabwe: 2009–2012. *International journal of business and management*, 8 (10), 159–168.

Cronbach, L. J., 1951. Coefficient alpha and the internal structure of tests. *Psychomelrika*, 16 (1): 297–334.

Delis, M. D. and Mylonidis N., 2015. Trust, happiness, and households' financial decisions. *Journal of financial stability*, 20 (1), 82–92.

Demirgüç-Kunt, A. and Klapper L. F., 2012. Measuring financial inclusion: the Global Findex Database. Policy Research Working Paper, No. 6088. Washington, D.C.: World Bank.

Demirgüç-Kunt, A. and Levine, R., 2008. Finance, financial sector policies, and long-run growth. Policy Research Working Paper, No. 4469. Washington, D.C.: World Bank.

El-Attar, M. and Poschke M., 2011. Trust and the choice between housing and financial assets: evidence from Spanish households. *Review of finance*, 15 (4), 727–756.

Fernandes, D., Lynch, J. G. Jr and Netemeyer, R. G., 2014. Financial literacy, financial education, and downstream financial behaviors. *Management science* 60 (8), 1861–1883.

Field, A., 2009. *Discovering statistics using SPSS*. London: Sage Publications.

Filipiak, U., 2016. Trusting financial institutions: out of reach, out of trust? *Quarterly review of economics and finance*, 59 (1), 200–214.

Gaisina, S., 2014. Rural household saving determinants in Kazakhstan. *Journal of rural cooperation*, 42 (1), 60–79.

Ghana Statistical Service, 2013. *Population and housing census*. Accra, Ghana: Ghana Statistical Service.

Goldberg, J., 2014. Products and policies to promote saving in developing countries. Working Paper, IZA World of Labor. Available at: https://wol.iza.org/uploads/articles/74/pdfs/products-and-policies-to-promote-saving-in-developing-countries.pdf.

Greene, H. W., 2012. *Econometric analysis*. 7th ed. International Edition, Harlow: Prentice Hall.

Guiso, L., Sapienza, P. and Zingales, L., 2008. Trusting the stock market. *Journal of finance*, 63 (6), 2557–2600.

Gurley, J. G, Shaw, E. S., 1955. Financial aspects of economic development. *American economic review*, 45 (4), 515–538.

Honohan, P., 2008. Cross-country variation in household access to financial services. *Journal of banking & finance*, 32 (11), 2493–2500.

Hong, H., Kubik, J. D. and Stein, J. C., 2004. Social interaction and stock-market participation. *Journal of finance*, 59 (1), 137–163.

Issahaku, H., 2011. Determinants of saving and investment in deprived district capitals in Ghana – a case study of Nadowli in the Upper West Region of Ghana. *Continental journal of social sciences*, 4 (1), 1–12.

Kibet, K. L., Mutai, B. K., Ouma, D. E., Ouma, S. A. and Owuor, G., 2009. Determinants of household saving: case study of smallholder farmers, entrepreneurs and teachers in rural areas of Kenya. *Journal of development and agricultural economics*, 1 (7), 137–143.

Klapper, L. F., Lusardi, A. and Panos, G. A., 2012. Financial literacy and the financial crisis. Working Paper No. w17930, National Bureau of Economic Research.

Komla, A. M. E., 2012. Demographic influences on rural households' savings and investment: a study of rural households in the Ho Municipality of Ghana. *International journal of applied sociology*, 2 (4), 41–46.

Levine, R., 1997. Financial development and economic growth: views and agenda. *Journal of economic literature*, 35 (2), 688–726.

Lusardi, A. and Mitchell, O. S., 2011a. Financial literacy around the world: an overview. *Journal of pension economics and finance*, 10 (4): 497–508.

Lusardi, A. and Mitchell, O. S., 2011b. Financial literacy and planning: implications for retirement wellbeing. Michigan Retirement and Research Centre Working Paper No. w17078. National Bureau of Economic Research.

Lusardi, A. and Mitchell, O. S., 2014. The economic importance of financial literacy: theory and evidence. *Journal of economic literature*, 52 (1), 5–44.

Miller, M. H., 1998. Financial markets and economic growth. *Journal of applied corporate finance*, 11 (3), 8–15.

McCleary, R. M., 2007. Salvation, damnation, and economic incentives. *Journal of contemporary religion*, 22 (1), 49–74.

Mishkin, F. S., 2007. *The economics of money, banking and financial markets*. 8th ed. New York: Pearson Education Inc.

Mosch, R. H. J. and Prast, H. M., 2008. Confidence and trust: empirical investigations for the Netherlands and the financial sector. Occasional papers, Vol. 6, No. 2, De Netherlands Bank. Available at: https://www.dnb.nl/binaries/OS_Vol6_2_08_tcm46-175279.pdf.

Mumin, Y. A., Mohammed, A. and Kasim, H., 2016. Effects of selected socio-economic factors and elections spending on aggregate savings (total deposits) in Ghana. *Journal of economics and international finance*, 8 (2), 7–18.

Mumin, Y. A., Razak, A. and Domanban, P. B., 2013. Analysis of household heads' decision-to-save with financial institutions in Ghana. *Asian economic and financial review*, 3 (11), 1466–1478.

OECD, 2005. *Improving financial literacy: analysis of issues and policies*. *Organisation for Economic Co-operation and Developmen*t. OECD Publishing.

Ogunleye T. S., 2017. Financial inclusion and the role of women in Nigeria. *African development review*, 29 (2): 249–258. https://doi.org/10.1111/1467-8268.12254.

PACFL, 2008. *Annual report to the President. President's Advisory Council on Financial Literacy*.

Available at: http://www.jumpstart.org/assets/files/pacfl_annual_report_1-16-09.Pdf.

Prina, S., 2015. Banking the poor via savings accounts: evidence from a field experiment. *Journal of development economics*, 115 (1), 16–31.

Renneboog, L. and Spaenjers, C., 2012. Religion, economic attitudes, and household finance. *Oxford economic papers*, 64 (1), 103–127.

Robbins, B. G., 2016. What is trust? A multidisciplinary review, critique, and synthesis. *Sociology compass*, 10 (10), 972–986. https://doi.org/10.1111/soc4.12391.

Rogg, S. C., 2000. The impact of access to credit on the saving behaviour of micro-entrepreneurs: evidence from three Latin American countries. Unpublished paper. London: Department for International Development (DFID). Available at: https://pdfs.semanticscholar.org/3c39/ce56b342a2b3c3db004144ce52d2d657527e.pdf.

Schumpeter, J. A., 1934. *Theory of economic development: an inquiry into profits, capital, credit, interest, and the business cycle*. Cambridge, MA: Harvard University Press.

Sedirwa, T. A., 2015. *What influences households' saving behaviour in Botswana*. Thesis (MA). Stellenbosch University. Available at: https://oatd.org/oatd/record?record=%22handle%5C%3A10019.1%2F97442%22.

Stix, H., 2013. Why do people save in cash? Distrust, memories of banking crises, weak institutions and dollarisation. *Journal of banking & finance*, 37 (11): 4087–4106.

Tandoh, I. and Tandoh, V., 2015. Dynamics of savings culture in Ghana. *South American journal of management*, 1 (2), 1–21.

Walle, Y. M., 2014. Revisiting the finance–growth nexus in sub-Saharan Africa: results from error correction-based panel cointegration tests. *African development review*, 26 (2): 310–321. https://doi.org/10.1111/1467-8268.12083.

World Bank, 2017. *World Development Indicators*. Washington D.C.: World Bank.