

RESEARCH PAPER

UNDERSTANDING THE DETERMINANTS OF LOAN DEMAND IN GHANA: DO INDIVIDUALS' SOCIO-DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS MATTER?

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ABSTRACT

The importance of credit demand cannot be overemphasised given its potential positive influence on individuals' livelihood and economic growth of countries. In spite of the financial sector liberalisation in Ghana, some individuals still face financial constraints which make it difficult to cover up their spending gap. This paper investigates whether individuals' socio-demographic and economic characteristics are important in loan demand. A simple random sampling technique was used to select 700 respondents. Using binary probit regression, the study shows that individuals' socio-demographic and economic characteristics matter in loan demand. Individuals who have attained tertiary education and those who earn substantial income are more likely to demand loan. It is also revealed that financially literate individuals are more likely to demand loan whereas private sector employees are less likely to demand loan. Given the findings and the fact that loan demand is vital in eliminating poverty, financial institutions should identify and adopt different types of loans that are suitable for the marginalised and less privileged individuals.

Keywords: *Loan demand, socio-demographics, financial institutions, probit, Ghana*

INTRODUCTION

Credit and its potential positive impact on the various economic units and economic growth of many African economies cannot be overemphasised in this twenty first century. Individuals use their personal income and wealth to increase their consumption and undertake productive activities and when these are not sufficient, they tend to demand loans from financial institutions to cover up the spending gap (Pastrapa, 2011). These individuals demand

loan with the objective of maximising their utility. In Ghana and other parts of the world, loans are demanded for at least two purposes. First, for consumption (payment of utility bills, education financing and buying cars) and secondly for investment purposes (see Awunyo-Vitor and Abanquah, 2012; Awunyo-Vitor and Al-Hassan, 2014; Kandil and Mirzaie, 2011; Schroeder, 2016; Wongnaa and Awunyo-Vitor, 2013). Loans are also demanded for precaution purposes such as illness and unemployment as

well as speculative purposes (Akpanjar *et al.*, 2013; Bendig *et al.*, 2009; Boakye and Amankwah, 2012). It is also argued that, loan demand is very crucial in the lives of individuals and firms for several reasons including income generation, consumption smoothening over the entire life time, poverty reduction and also as far as deficit units, investment and economic growth are concerned (Magri, 2002; Verdier-Chouchane, 2016). Loans demanded help individuals to undertake productive activities such as livestock production, farming and trading which tend to improve quality of life, standard of living and most importantly reduce poverty (see Ayele, 2015; Baidoo *et al.*, 2016; Ogunleye, 2017).

This facilitation role of loan demand confirms the financial inclusion role as an enabler to achieving some of the Sustainable Development Goals (Goals 1, 2, 3, 5, 8, 9, 10 and 17). *The sustainable development goals 1, 2, 3, 5, 8, 9, 10 and 17 are no poverty, zero hunger, good health and wellbeing, gender equality, decent work and economic growth, industry, innovation and infrastructure, reduced inequalities and partnerships for the goals.* In spite of the importance of credit, Peachey and Roe (2006) report that not all individuals have access to loan to cover up spending gap and this is confirmed by Raheem (2015) who reports that most African countries, especially sub-Saharan Africa are faced with financial gap constraint. It is also reported that individuals who are already wealthy often get access to loan leaving out the less wealthy counterparts (Claessens, 2006).

According to studies by King and Levine (1992, 1993), Rousseau and Wachtel (1998) and Khan *et al.* (2005), increasing credit to deficit units through a well-developed financial sector has a potential positive influence on economic growth. In addition, improving the efficiency of financial institutions enhances economic growth (Banya and Biekpe, 2017; Egbe-tunde and Akinlo, 2015; Fernández and Tamayo, 2015; Shin, 2011; Walle, 2014). This therefore implies that the role played by the financial sector in an economy cannot be underrated as far as loan demand and economic growth are concerned.

Prior to 1983, the financial sector of Ghana experienced gloomy performance which affected the economic growth of the country. As a result, the government of Ghana in 1983, adopted the International Monetary Fund (IMF) / World Bank's Structural Adjustment Policies (SAP) under the broad Economic Recovery Programme (ERP) as a panacea to solving the serious macroeconomic problems the country encountered in the 1970s and early 1980s. Subsequently, the financial sector was liberalised and the Financial Sector Adjustment Programme (FINSAP) introduced in September, 1987. The main idea of FINSAP was to restructure banks that are repressed to enable them become more efficient in their operations and thereby contribute to solving the macroeconomic difficulties.

With the liberalisation of the financial sector, the fixed exchange rate regime, preferential interest rate to priority sectors of the economy, interest rate controls and sectoral credit ceiling were all abolished. Thus, FINSAP in Ghana led to improvement in the operations of banks and establishment of more financial institutions. By 2017, the number of financial institutions increased from 12 in 1983 to 652: 35 universal banks (commercial banks, investment banks and merchant banks), 140 rural and community banks, 71 non-banking financial institutions and 406 microfinance institutions (Bank of Ghana, 2017). These financial institutions play a crucial role by serving as intermediaries between the surplus and deficits units (Baidoo and Akoto, 2019; Baidoo *et al.*, 2018; Mishkin, 2007).

Liberalisation of the financial sector increases interest rates, stimulates savings, loan demand and impacts positively on economic growth (Lopes and de Jesus, 2015; Campbell and Mankiw, 1990; McKinnon, 1973; Shaw, 1973). Again, with the financial sector liberalisation, liquidity constraints are relaxed leading to increased consumption. This idea which derives from McKinnon and Shaw hypothesis implicitly assumes that there is a homogenous household and that all relevant households have access to credit. However, Campbell and Mankiw (1990) argue that not all households have access to credit markets and some individuals

have no ability to smooth consumption over time.

In the Ghanaian context, liberalisation of the financial sector has resulted in significant increase in loan demand. For instance, domestic credit provided by the financial sector as a percentage of gross domestic product (GDP) increased from 21.41% between 1990 and 1999 to 31.24% between 2000 and 2016 (World Bank, 2017). Given the upsurge in loan demand, the present study seeks to answer at least two questions. First, do individuals' socio-demographic and economic characteristics matter in these loans demanded? Second, do all individuals have equal access to credit regardless of their status quo or otherwise as reported by Campbell and Mankiw (1990)? In addition, this study implicitly shows which group of people or individuals are benefiting from the financial sector liberalisation.

Indeed, in both developed and developing countries, researchers have investigated the factors that influence demand for loans and diverse results have been reported (see Olomola and Gyimah-Brempong, 2014; Cheng and Ahmed, 2014; Amao, 2013; Olaoye *et al.*, 2012; Pastrapa, 2011; Magri, 2002). For instance, Olaoye *et al.* (2012) report a negative relationship between number of children and demand for loan whereas Olomola and Gyimah-Brempong (2014) and Magri (2002) report a positive relationship. One observation emerging from these studies is that the findings are inconclusive.

Specifically on Ghana, studies regarding determinants of loan demand are few and are conducted from two perspectives. On the one hand, emphasis is placed on the influence of macroeconomic factors such as lending rate, inflation and gross domestic product on loan demand (see Akowuah, 2011; Amonoo *et al.*, 2003). On the other hand, Bendig *et al.* (2009), Boakye and Amankwah, (2012) and Akpandjar *et al.* (2013) emphasise individuals' demand for financial services and products such as insurance, pension schemes, mortgage, mutual funds, loans and savings in rural and urban areas.

The present study makes important contributions. First, it adds to the few studies especially in the Ghanaian context. Second, we disaggregate variables such as education, age and income that are incorporated in previous studies as continuous variables in order to examine the impact of the various categories on loan demand. In addition, the paper is expected to inform policy makers about the role of individuals' socio-demographic and economic characteristics in loan demand. This study is also useful to both bank and non-bank financial institutions as it aids in the designing and implementation of strategies that seek to improve on financial inclusion in the country. Finally, the study implicitly highlights individuals who have benefitted from the liberalisation of the financial sector from the perspective of loan demand.

The rest of the paper is arranged as follows. Section two is devoted to literature review and section three discusses the study methodology. Section four focuses on discussion of the results whereas the conclusions and policy implications are discussed in the last section.

LITERATURE REVIEW

Many studies have examined the determinants of loan demand in both developed and developing economies from the perspective of individuals' socio-demographic and economic characteristics. Cheng and Ahmed (2014) examined the factors that influence demand for loan in China. Using data on 821 individuals, the authors applied probit estimation technique to the dataset. The variables used include age, marital status, education, income and number of children. The results revealed that being female reduces the probability of demanding loan. Females are mostly not the heads of family and hence less likely to demand loan to provide family needs. A negative relationship was also reported between loan demand and age. Cheng and Ahmed (2014) added that most of the older individuals were less educated and have less investment and productive ambitions which tend to reduce the likelihood of demanding loan. The study further showed that being married increases the likelihood of demanding loan due to greater responsibilities. Again, education and having more children were found to have

positive relationship with loan demand. The authors added that individuals who spend more years in school often tend to have skills, experience and investment ambitions which influence them to demand loan if funds are not readily available.

In a related study, Olomola and Gyimah-Brempong (2014) investigated the determinants of loan demand in Nigeria using data on 1200 individuals. Employing probit regression the study confirmed the positive relationship between loan demand and marital status reported by Cheng and Ahmed (2014). The results further revealed that larger household size increases the probability of demanding loan as larger household size indicates greater responsibilities which require extra funds. A positive relationship between age, income and loan demand was also revealed. The positive relationship between age and loan demand contradicted the finding by Cheng and Ahmed (2014).

Similarly, Amao (2013) examined the factors that influence individuals' demand for loan in Nigeria. The study used a sample of 138 individuals and employed the logistic regression as the analytical tool. The explanatory variables used include age, marital status, education, gender and income. The results showed that being male increases the probability of demanding loan which is consistent with the result obtained by Cheng and Ahmed (2014). The results further showed that being married and having larger household size reduce the likelihood of demanding loan. The author further explained that, individuals with larger household size do not need to hire extra labour to assist in the activities undertaken, hence there is no need to demand loan to pay hired workers. This finding however contradicted the results by Olomola and Gyimah-Brempong (2014).

In a related study in Greece, Pastrapa (2011) used a sample size of 396 individuals and applied the probit regression for analysis. The explanatory variables include age, marital status and employment status. The results showed that there was a positive relationship between age, marital status (being married), employment status and loan demand. Regarding employment status, the author explained that indi-

viduals who are employed can earn income to repay their loans when approved and disbursed, hence the greater probability of demanding loan. These findings are consistent with the results by Akpandjar *et al.* (2013), Kausar (2013), Boakye and Amankwah (2012) and Magri (2002) but contradict those of Amao (2013) and Bendig *et al.* (2009).

In Ghana, Akpandjar *et al.* (2013) employed logistic and probit regressions as estimation techniques to investigate factors that influence demand for financial services such as insurance, credit and savings. Using a sample size of 8,687 households, the results revealed that age was negatively associated with demand for financial services. As one grows the demand for financial services reduces and this is attributed to the fact that during old age, individuals become weak and unproductive and for that matter the desire for financial services diminishes. This finding is consistent with Cheng and Ahmed (2014), Pastrapa (2011) and Magri (2002) but contradicts that of Olaoye *et al.* (2012). The study also found a positive relationship between education, income, being employed, household size, being married, financial literacy and demand for financial services. Individuals who are financially literate are more likely to demand financial services and this is consistent with the finding by Boakye and Amankwah (2012). The authors added that individuals who are financially literate are able to comprehend terms and conditions which increase the likelihood of demanding such financial services.

Similarly, Boakye and Amankwah (2012) examined the factors that influence households' demand for financial products such as insurance, savings, pension schemes, credits, mutual funds and mortgage. Using a sample size of 3,643, the authors employed logistic regression for the estimations. The results showed a positive relationship between demand for financial products and financial literacy which is consistent with the finding by Akpandjar *et al.* (2013). The study further revealed that individuals who are employed, educated and earn substantial income are more likely to demand financial products relative to counterparts who are uneducated, unemployed and earn smaller

or no income at all.

Bendig *et al.* (2009) investigated the determinants of financial services in rural and urban areas of Ghana. The authors used a sample of 350 households and apply multivariate probit model as the analytical tool. The results showed a negative relationship between self-employed and demand for financial services. Further, it was revealed that being educated and having larger household size increase the probability of demanding financial services and these findings are not different from those reported by Boakye and Amankwah (2012) and Akpandjar *et al.* (2013).

Review of studies on socio-demographic and economic factors that influence loan demand clearly shows that studies on Ghana are very few and do not also emphasise loan demand (see Akpandjar *et al.*, 2013; Boakye and Amankwah, 2012; Bendig *et al.*, 2009). Hence, the need for further studies to investigate the determinants of loan demand with emphasis on individuals' socio-demographic and economic characteristics as far as policy formulation and implementation as well as validation of earlier findings are concerned.

This study is different from previous studies on determinants of loan demand. First, the few studies on Ghana and those of other countries measure variables such as age, education, household size and income as continuous variables (see Amao, 2013; Bendig *et al.*, 2009; Olaoye *et al.*, 2012; Olomola and Gyimah-Brempong, 2014). However, this paper disaggregates these variables into various categories. Second, variables such as marital status and employment status are measured as binary dummy variables in previous studies: married and never married and employed and unemployed for marital status and employment status respectively (see Messah, 2011; Olomola and Gyimah-Brempong, 2014; Pastrapa, 2011) but the present study disaggregates these into other categories such as single (never married), married, divorced, private sector employees and public sector employees. The motivation for this data disaggregation is the fact that one problem with measuring variables in continuous form is the likelihood of encountering ag-

gregation bias. Using aggregate data makes it difficult to examine the effect of the various categories within such explanatory variables on the dependent variable. For instance, Garrett (2003) reports that inferences from aggregate data assumes that the relationship between variables is the same across all individuals. In the case where the individuals' characteristics and behaviour are different across the various categories (as in the case of the current study), the conclusions based on the aggregate data may be misleading and might not be effective for policy purposes, hence the need for disaggregation. Considering the aforementioned potential weakness in the previous studies, a study like the current paper is therefore needed.

EMPIRICAL METHODOLOGY

Data and estimation strategy

We rely mainly on primary data and employ simple random and binary probit regression as the sampling and estimation techniques respectively. The data collection period which spans January 2016 to June 2016 is conducted through questionnaire administration. Both assisted and self-administered approaches to questionnaire administration are used in the data collection to ensure that individuals who cannot read, understand or write are not ignored from the study. To this end, individuals who cannot read, understand or write are interviewed and their responses are used to fill the questionnaire. The questionnaires contain information on individuals' socio-demographic characteristics such as age, gender, marital status, educational level, income and employment status and information on loan demand. A total of 700 questionnaires are distributed to individuals who are 18 years and above in the Kwahu West Municipality. These individuals are those who can demand loan from the formal financial institutions. This is because, the formal financial institutions mostly require an identification card which is mostly the voters' identification card (due to their easy verification) before a loan is approved and disbursed. In Ghana, this identification card is issued to individuals who are 18 years and above by the Electoral Commission of Ghana. According to Ghana Statistical Service (2013), the population of individuals who are 18 years and above in the study area is 51,964. Following Slovin's sample size

formula as cited in Osunsan (2015) a sample size of 700 is selected for the study.

The formula is $n = \frac{N}{1+N(\epsilon)^2}$ where n, N and

ϵ represent sample size, total population and error margin respectively.

Based on the formula, a sample size of 399.31 (approximately 400) should have been used for the analysis. However, probit model requires that for consistent and reliable results to be achieved, the sample size should be relatively larger. Hence our decision to increase the sample size to 700.

However, after data cleaning: checking for missing data and completeness of questionnaire filling, a sample of 600 individuals representing 85.7% response rate is used for the analysis. The choice of Kwahu West Municipality as the study area is driven by the fact that the municipality is ranked the second largest urban area in the Eastern region and among the biggest commercial centres in Ghana. Given its commercial area nature, it has attracted many people with different background, age, occupation and culture among others from different parts of Ghana as revealed by GSS (2013). As a result, the analyses and results from the data collected can be generalised to represent the behaviour of individuals in other parts of Ghana.

Given that the dependent variable (loan demand) is binary, we employ the binary probit regression model as the estimation technique following Greene (2012), Asteriou and Hall (2011) as well as past studies (see Akpandjar *et al.*, 2013; Amao, 2013; Messah, 2011). It must be emphasised that the loan demand in this paper is any kind of loan and is satisfied demand as noted by Bendig *et al.* (2009). That is, loans that are actually approved and disbursed. A frequency table is also used to present the data on socio-demographic characteristics of the respondents.

The robustness of the results from this study is ensured by conducting reliability and multicollinearity tests for the questionnaires and the explanatory variables respectively. These are to ensure that the results obtained are not spurious

and the questionnaires used are reliable. Reliability test using Cronbach alpha as proposed by Cronbach (1951) is employed for the reliability test. Field (2009) proposes that in order for a questionnaire to be reliable, the alpha value should be 0.7 and above. multicollinearity on the other hand becomes problematic when the correlation coefficients between the independent variables are greater than 0.5 (Greene, 2012). In addition, to resolve any potential heteroscedasticity issue, robust standard errors of the independent variables are estimated.

Model specification

The present study follows previous studies by Cheng and Ahmed (2014) and Olomola and Gyimah-Brempong (2014) and specifies the following binary probit regression model for estimation using stata 13. The functional and estimable forms of the model are specified in equation (1) and equation (2) respectively.

$$D_L = f(\text{Age}, \text{Gender}, \text{Educ}, \text{Empst}, \text{Mast}, \text{HHS}, \text{Income}, \text{Finlit}) \quad (1)$$

$$D_L = \alpha_0 + \alpha_1 \text{Age}_i + \alpha_2 \text{Gender}_i + \alpha_3 \text{Educ}_i + \alpha_4 \text{Empst}_i + \alpha_5 \text{Mast}_i + \alpha_6 \text{HHS}_i + \alpha_7 \text{Income}_i + \alpha_8 \text{Finlit}_i + \mu_i \quad (2)$$

D_L is the dependent variable and represents loan demand. *Age*, *Gender*, *Educ*, *Empst*, *Mast*, *HHS*, *Income*, *Finlit* are the explanatory variables representing individuals' age, gender, educational level, employment status, marital status, household size, income and financial literacy respectively. $\alpha_{1,8}$ ($i = 1, 2, 3, \dots, 8$) are the coefficient of the respective explanatory variables and μ_i is an independently and identically distributed error term. Given that coefficients of variables in probit regression do not have direct economic meaning, the marginal effect at the mean for each explanatory variable is estimated and interpreted accordingly.

Variable description

The selection of variables for the present study is influenced by past studies (see Akpandjar *et al.*, 2013; Amao, 2013; Cheng and Ahmed, 2014; Kausar, 2013; Olaoye *et al.*, 2012; Olomola and Gyimah-Brempong, 2014).

The dependent variable is loan demand and is

measured as dichotomous dummy variable which takes the value 1 if an individual has ever demanded loan from a formal financial institution and 0 if an individual has never demanded loan. Specifically, we obtain this variable by asking the respondents "have you ever demanded loan within the past 12 months?" and the response is binary: either "yes" or "no".

Regarding the independent variables, age represents the categorical age (in years) of respondents. The variable is categorised into five: 8-24 years, 25-39 years, 40-54 years, 55-60 years and above 60 years (reference category). Gender represents the sex of the respondents and is measured as a binary dummy; it takes the value 1 if a respondent is a male and 0 if female. Education denotes the level of formal education attained by a respondent and is categorised into five: no formal education (reference category), primary, Junior High School/ Middle School Leaving Certificate, Senior High School/ Ordinary Level and tertiary. Employment status is disaggregated into two categories: public sector employees (reference category) and private sector employees (this includes individuals who are self-employed). The disaggregation is to help assess the impact of the sector in which one is employed on loan demand rather than just having employed or unemployed as categories. Marital status classifies respondents into their various marital positions and it is categorised into three: Single (never married) (reference category), married and divorced. This study uses household size to represent respondents' dependents instead of number of children. The motivation is that, there are some respondents who do not have children but take care of other relatives and people they live with. The variable has three categories: 1-2 dependents (reference category), 3-4 dependents and 5 and above dependents.

The income variable in this study represents monthly income in Ghana cedis (GH¢) earned by respondents. For respondents in the public sector or formal employment, it is the net or the disposable income. On the other hand, it is the average amount or income earned each working day multiplied by the number of working days in the month for respondents who are self-employed or in the informal sector. The income

variable has six categories: less than GHS200.00 (reference category), GH¢201.00-GHS400.00, GH¢401.00-GH¢600.00, GH¢601.00-GH¢800.00, GH¢801.00-GH¢1000.00 and above GH¢1000.00. Regarding the financial literacy variable, we follow the idea and concept of Organisation for Economic Co-operation and Development (OECD) (2005), Presidents' Advisory Council on Financial Literacy (PACFL) (2008), Atkinson and Messy (2012), Lusardi and Mitchell (2011a, 2011b, 2014) and Fernandes *et al.* (2014) and define it in this study as the general understanding and knowledge that allows consumers or individuals to effectively manage and make sound financial decision regarding financial resources. The idea and concept of OECD (2005), PACFL (2008), Atkinson and Messy (2012), Lusardi and Mitchell (2011a, 2011b, 2014) and Fernandes *et al.* (2014) are adopted in order to have a consistent measurement for the variable. To obtain the financial literacy variable, the respondents are asked five financial literacy related questions or statements with binary responses: "yes" and "no". Subsequently, we follow the ideas and concepts of the aforementioned authors in addition to those of Klapper *et al.* (2012) and Baidoo *et al.* (2018) and create a financial literacy score on a scale of 0-5 based on correct responses provided by the respondents; the scores generated are then used for the analysis.

We expect a positive relationship between loan demand and categorical variables of age, education, employment status, marital status, household size and income. Again, gender and financial literacy are also expected to have positive relationship with loan demand. For instance, individuals in the active labour group (below 60 years) are expected to demand loan for productive and investment purposes compared with their counterparts who are relatively older *ceteris paribus*. Again, given that males are mostly heads of families especially in the case of Ghana it is expected that they will demand loan in order to effectively provide for their dependents' social and economic needs. Further, formal education is expected to facilitate the understanding of loan contract and therefore individuals who have attained some level of formal education are expected to de-

mand loan. Also, individuals in the private sector mostly do not have regular income and for that matter are more likely to demand loan in case of any eventuality that requires urgent funding. Individuals who are married as well as those divorced are likely to have much burden due to dependents and therefore are more likely to demand loan. In addition, individuals who earn substantial income are more likely to demand loan for investment and other purposes in order to increase their wealth because they can quickly repay the loan if approved and

disbursed. Finally, being financially literate is expected to enable individuals to make sound decisions regarding financial resources hence individuals who are financially literate are expected to make informed decisions which can influence their desire for loan demand.

RESULTS AND DISCUSSION

Descriptive analysis

The distribution of respondents according to their socio-demographic are reported in Table 1.

Table 1: Distribution of respondents by socio-demographic characteristics

Variable	Freq.	Percentage	Variable	Freq.	Percentage
Age (categorical years)			Marital Status		
18-24 years	100	16.70	Single (Never married)	209	34.83
25-39 years	278	46.30	Married	359	59.83
40-54 years	171	28.50	Divorced	32	5.33
55-60 years	42	7.00			
Above 60 years	9	1.50			
Gender			Household Size		
Male	372	62.00	1-2	246	41.00
Female	228	38.00	3-4	200	33.30
			5 and above	154	25.70
Educational Level			Income (GH¢)		
No formal education	19	3.20	Less than GH¢200.00	72	12.00
Primary	27	4.50	GH¢201.00-GH¢400.00	93	15.50
JHS/MSLC	152	25.30	GH¢401.00-GH¢600.00	88	14.70
SHS/O'Level	185	30.80	GH¢601.00-GH¢800.00	108	18.80
Tertiary	217	36.20	GH¢801.00-GH¢1000.00	118	19.70
			Above GH¢1000.00	110	18.30
Employment Status			Do not earn income		
Public sector employee	220	36.70		11	1.80
Private sector employee	369	61.50			
Unemployed	11	1.80			
Loan Demand			Financial Literacy		
Yes (Ever demanded)	400	66.67	1 Correct Response	72	12.00
No (Never demanded)	200	33.37	2 Correct Responses	98	16.33
			3 Correct Responses	108	18.80
			4 Correct Responses	117	19.50
			5 Correct Responses	205	34.17

Source: Authors' computation using field survey data

The results show that 449 respondents representing 74.8% are between the ages of 25 and 54 years and 378 (63%) are between the ages of 18 to 39 years; only 9 respondents (1.5%) are above 60 years. Regarding gender, the result shows that males and females constitute 372 and 228 and these represent 62.0% and 38.0% respectively. The result further reveals that 19 respondents representing 3.2% have no formal education and 217 respondents (36.2%) have attained tertiary education. With respect to employment status, it is revealed that 220 and 369 respondents are public sector and private sector employees and these represent 36.7% and 61.5% respectively. Regarding marital status, 209 (34.83%), 359 (59.83%) and 32 (5.33%) respondents are single (never married), married and divorced respectively. Table 1 further shows that 246 (41.0%), 200 (33.3%) and 154 (25.7%) respondents have household size of 1-2, 3-4 and 5 or more respectively. It can be inferred that majority of the respondents, 446 (74.3%) have household size of up to 4 which is similar to the Municipality average of 4.1 persons per household. With regard to loan demand, the results show that, 400 out of the 600 respondents have ever demanded loan and this represent 66.67%. Regarding financial literacy, the results reveal that 205 (34.17%) respondents have correct responses to all the five financial literacy related questions whereas 72 respondents (12.0%) have one correct response.

Regression results

We report in Table 2 the estimates from the binary probit regression model as well as the marginal effect.

Consistent with our expectation, there is a positive relationship between the age categorical variables and loan demand. As age decreases from the reference category (above 60 years) the probability of demanding loan increases. This implies that individuals who are relatively younger and are in the active labour force are more likely to demand loan compared to counterparts who are relatively older. Specifically, the marginal effect shows that being in 18-24 years, 25-39 years, 40-54 years and 55-60 years age categories increase the likelihood of demanding loan by 31 percentage points, 44 percentage points, 42 percentage points and 28

percentage points and are significant at 5%, 1%, 1% and 5% levels respectively.

This result can be attributed to the fact that relatively younger individuals are active and for that matter may want to demand loan to undertake investment and other productive activities in order to acquire or increase their wealth to safeguard their future *ceteris paribus*. In addition, individuals within the age category of 25-60 years may have some dependents considering the extended family system practiced in Ghana which increase their responsibilities hence the need for extra funds to meet their dependents' social and economic needs if there is a spending gap. This result is consistent with the findings by Cheng and Ahmed (2014) and Olomola and Gyimah-Brempong (2014).

With regard to educational level, the results reveal that there is a positive relationship between tertiary education and loan demand. Individuals who have attained tertiary education are more likely to demand loan compared with counterparts without formal education. The other educational level categories are not significant. The marginal effect shows that having tertiary education increases the probability of demanding loan by 24 percentage points at 5% significance level. By implication, individuals who have attained tertiary education are more skilled and have investment and productive ambitions which influence them to demand loan. This result confirms the findings by Olaoye *et al.* (2012), Messah (2011) and Magri (2002) but contradicts the findings by Amao (2013).

With respect to employment status, the study shows a negative relationship between private sector employees and loan demand. This implies that individuals in the private sector category are less likely to demand loan relative to counterparts in the public sector. The marginal effect indicates that being employed in the private sector reduces the probability of demanding loan by 30 percentage points at 1% significance level. This negative relationship can be attributed to the fact that most formal financial institutions in Ghana do not approve and disburse loans to individuals perceived not to have regular income in order not to increase their

Table 2: Binary probit regression results

Variables	Coefficient	Robust Standard Error	Prob. value	Marginal Effect
Age (Above 60 years)				
18-24 years	1.308	0.509	0.010	0.313
25-39 years	1.394	0.485	0.004	0.436
40-54 years	1.677	0.488	0.001	0.424
55-60 years	1.307	0.531	0.014	0.279
Gender (Female)				
Male	-0.024	0.129	0.853	-0.008
EDUC (No formal education)				
Primary	0.593	0.485	0.222	0.165
JHS/MSLC	0.304	0.359	0.397	0.098
SHS/O'Level	0.152	0.361	0.673	0.051
Tertiary	0.755	0.373	0.043	0.237
EMPST (Public sector employee)				
Private sector employee	-0.818	0.145	0.000	-0.297
MAST (Single)				
Married	0.908	0.175	0.000	0.314
Divorced	0.869	0.325	0.007	0.218
HHS (1-2)				
3-4	-0.100	0.173	0.564	-0.034
5 and above	-0.141	0.201	0.483	-0.049
Income (Less than GH¢200.00)				
GH¢201.00-GH¢400.00	0.434	0.212	0.044	0.133
GH¢401.00-GH¢600.00	0.839	0.229	0.000	0.228
GH¢601.00-GH¢800.00	1.094	0.225	0.000	0.283
GH¢801.00-GH¢1000.00	0.646	0.238	0.007	0.191
Above GH¢1000.00	0.941	0.242	0.000	0.255
Financial Literacy Score	0.254	0.078	0.001	0.086
Constant	-3.200	0.619	0.000	-
Number of observations	600			
Wald Chi-square (20)	208.680			
Prob> Chi-square	0.000			
Pseudo R ²	0.318			
Predictive Power	0.716			

Note: Reference categories are in parentheses; Dependent variable is loan demand
Source: Authors' estimation

non-performing loans. Most individuals in the private or informal sector especially the self-employed do not have regular income to facilitate loan repayment and this therefore reduces the likelihood of demanding loan from the formal financial institutions. Our result is similar to the finding by Bendig *et al.* (2009) also on

Ghana.

Further, the results show that there is a positive relationship between marital status categorical variables and loan demand. Married individuals as well as those who are divorced are more likely to demand loan relative to individuals

who are single (never married). Specifically, being married and divorced increase the probability of demanding loan by 31 percentage points and 22 percentage points and are significant at 1% level. This relationship can be attributed to the fact that married and divorced individuals may have greater responsibilities due to larger dependents than counterparts who are single. This therefore increases the likelihood of demanding loan in order to provide for social and economic needs. This result is consistent with the findings by Olomola and Gyimah-Brempong (2014) and Magri (2002) but contradicts that of Amao (2013).

The results further reveal a positive relationship between income categorical variables and loan demand. Individuals who earn substantial income are more likely to demand loan compared with counterparts who earn relatively smaller income. The marginal effect shows that earning income of GH¢201.00-GH¢400.00, GH¢401.00-GH¢600.00, GH¢601.00-GH¢800.00, GH¢801.00-GH¢1000.00 and above GH¢1000.00 increase the probability of demanding loan by 13 percentage points, 23 percentage points, 28 percentage points, 19 percentage points and 25 percentage points respectively at 1% significance level with the exception of GH¢201.00-GH¢400.00 category which is significant at 5% level. This result can be attributed to the fact that individuals who earn higher income possess repayment abilities and are often perceived

as people who can repay loans if approved and disbursed. Olomola and Gyimah-Brempong (2014), Amao (2013) and Messah (2011) report similar findings but Cheng and Ahmed (2014) and Olaoye *et al.* (2012) report contrary result.

Regarding financial literacy and loan demand, a positive relationship is revealed. The results show that as individuals' financial literacy score increases (improvement in financial knowledge) on a scale of 0-5, the probability of loan demand also increases. The marginal effect reveals that answering an additional financial literacy question correctly increases the probability of demanding loan by 9 percentage points at 1% significance level. This result suggests that, individuals who are financially literate understand the terms and conditions attached to these loans easily and this enhances the likelihood of receiving the loan. This outcome is also similar to the results reported by Akpandjar *et al.* (2013) and Baokye and Amankwah (2012).

Our study however reveals insignificant relationship between gender, household size and loan demand though studies by Amao (2013), Olaoye *et al.* (2012) and Magri (2002) report a significant relationship.

The results regarding the robustness check are reported Table 3.

Table 3: Cronbach's alpha reliabilities and correlations test results

Variable	Cronbach's Alpha	Correlation							
		1	2	3	4	5	6	7	8
Age (1)	0.713	1.000							
Gender (2)	0.765	-0.083	1.000						
Educ (3)	0.763	-0.077	-0.204	1.000					
Empst (4)	0.716	-0.118	0.021	-0.002	1.000				
Mast (5)	0.715	0.429	0.014	-0.188	-0.105	1.000			
HHS (6)	0.723	0.488	-0.043	-0.102	-0.067	0.463	1.000		
Income (7)	0.720	-0.085	-0.001	0.046	0.482	-0.077	-0.052	1.000	
Finlit (8)	0.751	0.186	-0.125	0.178	-0.097	0.145	0.120	-0.059	1.000

Note: The overall alpha and average inter item correlation values for the variable are 0.733 and 0.174 respectively
Source: Authors'

From Table 3, the overall alpha value for the explanatory variables is 0.733 which is greater than the proposed 0.7 indicating that the questionnaire used in this study is reliable and there is also a high internal consistency among the variables. This value also implies that same or similar outcome can be achieved when same questionnaires are administered at a different period. Further, the outcome in Table 3 indicates the absence of multicollinearity since none of the correlation coefficients among the variables is greater than 0.5.

CONCLUSIONS AND POLICY IMPLICATIONS

This study examines the determinants of loan demand in Ghana with emphasis on individuals' socio-demographic and economic characteristics. The study relies on primary data and employs the binary probit regression estimation technique for the analysis.

Based on the results from the probit regression, the following conclusions emerged. First, individuals who are relatively younger and are in the active labour force (18-60 years) are more likely to demand loan. Second, individuals who have attained tertiary education are also more likely to demand loans. In addition, individuals who are married as well as those divorced are more likely to demand loan whereas private sector employees are less likely to demand loan. Further, individuals who earn substantial income (above GH¢200.00) as well as those who are financially literate are also more likely to demand loan. Finally, it can also be inferred from the findings that individuals who are benefiting from the financial sector liberalisation are those who earn substantial income, public sector employees and financially literate individuals as well as those with higher level of education.

This study has some important policy implications for Ghana. Liberalisation of the financial sector has played an important role in individuals' loan demand and this is likely to improve the quality of life of many Ghanaians. Relating this to the findings of this study, policies to deepen financial inclusion through loan demand should be incorporated into the broad policy package aimed at improving welfare of

Ghanaians. This will ensure that individuals with lower or no formal education, lower income and individuals who are less financially literate as well as those employed in the private or informal sector are not financially excluded. The results reveal that these categories of individuals are less likely to have their loans approved by the formal financial institutions and therefore may find it difficult to cover up their spending gap. Therefore, in order to eliminate this inequality in terms of individuals who have access to loan, policy makers should put measures in place to capture these less privileged individuals. This is likely to improve livelihood and subsequently reduce the abject poverty that has engulfed many Ghanaians. For instance, financial institutions can identify and adopt different types of loans products which are suitable for such category of individuals but under effective monitoring strategies. This is because, if for example "group loans" are identified and adopted as suitable for these less privileged individuals who may have lower loan repayment ability to greater extent, non-performing loans will upsurge (if these loans are not monitored properly) and will further exacerbate the high loan default problem Ghana is already facing.

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