Which Households Use Which Financial Services? Evidence from Ghana

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Abstract

Access to finance is viewed as a critical determinant of economic and social development, especially in low-income countries. The availability of savings and credit products is expected to permit households to be able to align income and expenditure patterns across time, to insure themselves against income and expenditure shocks, as well as to undertake investments in human or physical capital. Access to credit and other financial products reduces risk and vulnerability, increasing the ability of individuals and households to have access to basic services like education and health and simultaneously addressing issues of poverty reduction. Domestic savings on the other hand play a key role in financing development in any economy by providing resources for investment, boosting financial market development and stimulating economic growth. Savings mobilization can have a significant impact on growth by increasing investment, productivity and human capital. Savings also reduce risk and vulnerability for the poor. The provision of saving facilities allows poor people to accumulate funds in a secure place over time to build up reserves that can be used to smooth consumption when unanticipated fluctuations in income and expenditure occur.

However, for most parts of Africa, the financial sector is insufficiently developed and this can be a serious obstacle to economic development. In Africa, small and medium enterprises and poor individuals often struggle to access financial services. This inaccessibility brings about social exclusion. Individuals who do not have access to finance have difficulty integrating into the economy both socially and economically. Financial exclusion therefore reduces one's ability to face financial shocks and unexpected expenses which further perpetrates the risk of social exclusion and poverty. People excluded from access to finance have to turn to informal money lenders who offer less favorable conditions and charge more, increasing their vulnerability and exclusion.

In this proposed study, we will use survey data from the 2005/06 rounds of the Ghana Living Standards Survey to systematically explore the household- and community-level factors that can explain which households have access to which financial services in Ghana.

1. Introduction

Access to, and the use of financial services is a critical determinant of economic and social development. It reduces risk and vulnerability, provides resources for development that help to stimulate economic growth and helps poor people accumulate funds in a secure place which helps them smoothen consumption when unanticipated fluctuations in income and expenditure occur. Well functioning financial institutions accelerate growth by removing constraints that impede growth (Classens, 2006). When these well functioning institutions are absent, growth opportunities are missed and poverty and inequality continue to persist (World Bank, 2008).

The development of well functioning financial institutions in Africa remains a huge challenge and for most parts of Africa, financial inclusion is still afar off (Hendricks, 2011). Sub-Saharan Africa (SSA) still lags behind the rest of the world in the area of financial development (Allen et al, 2010). Indeed, in Africa, interventions have been made to enhance the pace of financial development. For instance, the introduction of microfinance institutions, village savings and loan accounts (VSLAs), rural banking schemes among many others, are some of the efforts are being made to minimize financial exclusion, especially among the poor. Although numerous efforts are being made, the situation remains far from being resolved.

It is well known that domestic savings are important for enhancing financial development for any country and indeed a country's level of savings could account for the difference between thriving and stagnating economies (Rodrick, 1998). A majority of the world's poor have difficulty generating a pool of income to weather adverse circumstances. Although saving would imply a substantial reduction from the poor's meager income, studies have shown that the poor are active savers whether through formal or informal means showing that savings accounts are an important need for the poor (Kendall, 2010). On the other hand, access to credit is also important particularly for the purpose of increasing financial activities within the economy. It also reduces risk and vulnerability and enables households to afford services such as health, education which helps to ensure a smoothening of consumption patterns within the household. Thus, savings and access to credit when fused together could have a significant impact on financial development in Africa. However, to increase financial inclusion in Africa, financial services have to be tailored to suit the needs of the poor, such that consumers would have access to them and sustainable use them over time.

Narrowing the African experience to the case of Ghana, it can be said that Ghana has been one of Africa's success stories on a number of development indicators. Ghana's human development index has increased consistently since independence and is ranked among the medium human development countries Fosu (2009). However, in the area of financial development, Ghana bears resemblance to its Sub- Saharan African counterparts. Access to finance and the continual use of financial services is not yet widespread. Particularly in the rural areas, there is still a dearth of access to financial services. Much research is still needed to determine what drives different types of households to demand different types of financial services (Biendig et al, 2009) in Ghana.

1.1 Background of Financial Development in Ghana

In recent years, landmark developments on the regulatory landscape as well as certain financial sector policies have not only impacted on the conduct of banks within the industry, but also reshaped the structure of the industry towards the "ideal" competitive structure. The introduction of the universal banking license (2003), the promulgation of the Banking Law of 2004 (Act 673), Foreign Exchange Act 2006 (Act 723), whistle blowers Act 2006 (Act 720), Credit Reporting Act 726 and the Banking Amendment Act 738 (both of 2007) and the abolishing of secondary deposit requirements and National Reconstruction levy in 2006 and 2007 respectively has stimulated the entry of a variety of new banks (mostly foreign owned), increased the level of competition in the industry and changed the way firms in the industry conduct themselves. In spite of all these achievements, access to financial services is still limited due to a range of structural and other constraints. The market structure is still far from competitive with and banks have a high degree of risk aversion.

The banking sector in Ghana presents excellent opportunities for growth and development. The enacted rules and regulations have increased entrants into the sector and increased competition within the industry. The financial service industry in Ghana can be divided into three sectors namely the Banking and Finance (including Non-Bank Financial services and Forex Bureux), Insurance and Financial/Capital markets. As at the end of 2011, the number of financial institutions was as follows[1]: Banks and Finance: Banks (28), Rural and Community Banks (135), Non-Bank Financial Institutions (49) and Foreign Exchange Bureau (273). Insurance Institutions: Insurance Companies (17), Re-insurance Companies (2) and Insurance Brokers (35).

The largest institutions in Ghana are the commercial banks: Commercial Banks (GCB) Limited, SSB Bank Limited and Barclays Bank of Ghana Limited accounting for nearly 55% of the total assets in the

[1] It is imperative to note that there are both foreign and local institutions operating in all the three categories.

banking sector. In January 2012, the total assets of the banking industry grew by about 27% from GH¢17.6 million to GH¢ 22.4 million. The increased assets was attributed mainly to the increase in deposits which increased by GH¢3.9 billion (Bank of Ghana, 2012). Most of the institutions in the banking sector are located in the urban and semi-urban areas of Greater Accra, Ashanti and eastern regions with few outlets in the rural areas. Rural Commercial Banks (RCBs) account for almost half of the banking outlets in the country, yet represent only 5% of the total banking assets (MFTransperancy, 2011). The total assets of the RCBs increased by 30.4% from GH¢ 266.8 million to GH¢ 1,142.6 million. The growth in assets was funded by shareholders' funds (28.3 percent), deposits (32 percent) and borrowings (13.9 percent) respectively (Bank of Ghana Annual Report, 2011). The report also states that the Non-Banking Financial Institutions (NBFIs) expanded by 57.8%. This growth in assets was mainly as a result of increase in loans and advances (44.5%), cash and bank balances (111.5%) and other assets (46%). Furthermore, the growth in assets was a result of increase in deposits and borrowings which increased by 74.6% and 42.3% respectively. The total assets of NBFIs constituted 7.1% of total assets of banks and NBFIs (Bank of Ghana Annual Report, 2011).

Despite being a middle income country, access to formal financial services in Ghana remains limited. Most Ghanaians do not have a bank account and it is estimated that between 10-25% of the population has access to formal financial services (GMX Consulting Ltd, 2012). Formal saving rates are also very low approximately between 8-12% (averaging about 25% in Africa). Innovations for Poverty Action (IPA, 2012) carried out a study in Tamale, the Northern Region of Ghana evaluating the motivation to take up formal savings accounts among the poor. They found that when all transaction costs for opening bank accounts were removed, individuals were more than ten times likely to open an account. Convenience was found to be a primary factor in determining interaction with formal banking institutions. Interestingly, giving clients information about the benefits of saving induced no behavioral attitude to open formal savings accounts. An important form of saving in Ghana is through the use of Susu accounts. Susu forms an integral part of the financial system in Ghana and offers savings products to help clients accumulate their savings over a period of one month to two years. IPA (2012) also carried out another study in the Eastern region of Ghana assessing the use of labeled saving accounts. Their findings revealed that, customers who saved with a labeled Susu savings account, saved more than those without a labeled savings account. This is because labeled accounts helped customers apportion expenditures into different accounts thereby increasing savings. Savings mobilization is still very low particularly in the rural parts of Ghana and Aryeetey (1994) attributes this to the low institutional organization and non-existent positive returns on savings.

In terms of access to credit, it can be said that microfinance institutions have expanded quite rapidly in the country. But most of these institutions are financially weak and undercapitalized with highly indebted borrowers. Formal financial institutions are also reluctant to lend money to the unbanked (Solo, 2005) particularly because of lack of collateral. The low level of financial intermediation in Ghana indeed prompts further research into the factors that drive consumers to demand financial services in Ghana. Osei-Assibey (2009) studies the case of Ghana to determine what drives the supply and demand for financial services in Ghana. On the demand side, he finds that households in urban areas, with physical assets, formal sector employees, proximity to a bank were some of the factors necessary to stimulate consumer demand for financial services in Ghana. Households in the informal sector with low levels of education endowments were less likely to demand financial services. On the supply side, he also found that the presence of a bank particularly in a rural community was determined by the market size, urbanization and modern infrastructure such as electricity, communication facilities and market activity within the community. Financial institutions were only willing to move into rural areas if these facilities were available. However, most rural areas lack these supply side factors which greatly inhibit the pace of financial inclusion in Ghana. The author concluded that the large number of unbanked Ghanaians is both a demand and supply side problem.

This paper attempts to assess the characteristics of households which use financial services in Ghana. Of vital importance, is the need to know the type of financial services used by the majority in order to better direct policies geared towards the improvement of access to and the use of financial services in Ghana. The broad structure of this paper is as follows: Section 2 presents the literature review looking at theoretical and empirical arguments on financial development in Africa and Ghana. Section 3 discusses the data and methodology and also presents preliminary descriptive statistics on the use of financial services in Ghana. Section 4 presents and discusses key econometric results and section 5 concludes.

2. Literature Review

The relationship between financial development and economic growth has received considerable attention in literature particularly in determining whether financial development causes growth or whether economic growth leads to financial development. Demetriades and Hussein (1996) and Robinson (1952) argue that financial development often follows economic growth due to an increase in the demand for financial services. King and Levine (1993) on the other hand, find that financial development is positively associated with the rate of physical capital accumulation and improvements in economic efficiency. They argue that countries with faster growth had an increase in financial depth and an increasing importance of the banking institution. They further argue that countries that had efficient levels of capital accumulation had more developed financial systems and conclude that finance does not only follow growth as has been determined by other authors, but rather that finance seems to lead economic growth.

To shed more light on the finance-development nexus, it would be important to look at some macro and micro factors that cause imbalances within the finance-development nexus. According to Rau (2004), a stable macro environment provides an important foundation on which financial intermediation can occur within formal and informal sectors of the economy. Thus, when economies lack a stable macroeconomic environment, they are prone to high inflation, exchange rate deterioration and debt repayments. These are all detrimental to the economy since high nominal interest rates arising from high inflation discourage investment into the economy and simultaneously increase interest rates in micro-finance institutions which affect the poor. Furthermore, funds which could have been used to ameliorate the plight of the poor are diverted elsewhere as a result of problems such as debt servicing which is particularly common to most African countries. On the micro side, the author discussed factors that impede the growth of the finance sector. These include, amongst others, illiteracy and weak legal and regulatory environments. In line with this, Beck et al (2000) also affirms that the level of financial development and legal environment within which markets operate has a great influence on the level of economic development. Thus, when financial systems are working efficiently, they help to reduce these macro-micro economic imbalances by allocating finance to the most important economic activities that would yield the highest return (Stiglitz, 1998).

Interest in financial inclusion has gained prominence in worldwide debates and has become an important policy priority for governments in most countries. The Consultive Group to Assist the poor (CGAP) released the *Financial Access Report* (2010) in which financial inclusion is defined as " a state where all working age adults have access to credit, payments, savings and insurance from formal service providers" (CGAP, 2010). They further state that inclusion is not limited to the availability of these financial services, but rather whether the different facets of the financial system are harnessed together to ensure that clients receive demand driven services. When demand driven services are lacking, it still leads to a detrimental effect on financial inclusion despite the level of availability of financial services. Furthermore, to increase financial inclusion in Africa, the importance of the informal sector cannot be ignored. One of the fastest ways to guarantee financial development is to provide financial services to individuals in the informal sector as a means of drawing them into the formal financial markets (Cole et al, 2009). Increasing financial literacy among these individuals would also serve as an important aspect of providing financial services tailor-made to suit their need since most individuals demand financial products when they are familiar with them.

Empirical studies on the importance of access and use of financial services has also unearthed important findings. In a study on access to financial services in Sub Saharan Africa (SSA), Prina (2012) found that an untapped demand for bank accounts by the poor exists. Her study revealed that when administrative and withdrawal fees are excluded, the poor have a great demand for bank accounts. Statistically, the author found that 84% of the poor opened accounts and 80% of them used these accounts actively. This increase in formal savings did not crowd out savings in other formal and informal institutions. Opening these bank accounts increased investments in health and education and reduced income volatility within the household.

Beck and Brown (2011) used survey data for 60, 000 households in 29 transitional economies to explore how the use of banking services is linked to household characteristics. Their findings revealed that having a bank account increased with income and education in most countries. The use of banking services was more common in households in the urban areas, male headed homes, households where the adult had university education and was formally employed. Access to banking services made it easier for households to smoothen their income and expenditure patterns over time. A study by Woodruff and Martinez (2008) on the characteristics of households that used financial services revealed similar findings in that education and household assets had significant associations with opening accounts in urban areas while wealth, expenditure and ownership of an agricultural business were significant in opening accounts in rural households.

Using an ordered probit model, Arun and Beindig (2010) measured the determinants which affect a households' decision to participate in none, one, two or all three types of financial services. The three financial services under assessment were savings, credit and insurance. They find that a households' take up of financial services was a diversified measure to cope with the consequences of risks they faced. The take up of financial services was found to be a function of past shocks which the households had experienced. They concluded that broadening access to financial services for the poor and increasing financial literacy among low educated, illiterate and some religious groups would increase awareness about the benefits of financial services which would serve as efficient risk management strategies.

A recent household survey carried out by CGAP (2009) in Malawi, Pakistan, Rwanda and Uganda found that these countries had fewer than 225 banks per 1000 adults. This study also revealed that trust in the financial system, distance and the overall level of economic development were important determinants of the availability of deposit institutions in a country. Looking further into the constraints impeding financial access, Conning and Kevane (2002) assessed factors constraining the integration of local financial institutions and safety nets with urban and national financial institutions. They found that there was a need to generate institutional innovations that would address issues of delivering financial intermediation to the very poor. This brief overview indicates there is still a strong need to access to finance within the SSA region. These factors impeding financial access and the use of financial services contribute greatly to income inequality and slow down economic growth, but if these impediments are addressed, access to and the use of financial services would improve the lives of a majority of the poor in SSA.

3. Data and Methodology

The proposed study uses survey data from the 2005/6 round of the Ghana Living Standards Survey (GLSS) to systematically explore the household and community- level factors explaining the characteristics of households and the types of financial services they use in Ghana. The GLSS data is a nationally representative sample of 8,687 households in 528 enumeration areas containing 37, 128 household members. It is a nation-wide survey gathering information on a wide array of topics including demographic characteristic of the population, health, insurance, education, housing, household income, employment and time use, household agriculture, housing conditions, migration, credit, assets and savings and consumption and expenditure.

After retrieving the necessary data to generate data for analysis, our household sample reduced to 8669 households and all analysis is done at household level since the household is the unit of focus in this paper. The goal of this paper was to determine which households use which financial services in Ghana and the variables chosen for analysis were the household size, age of household head, location, region of residence, education of household head, wealth level of the household, employment status, gender of household head, marital status and community variables such as access to post office, usable road, bank and communication centre. We measured access to and use of financial services using two indicators of household's use of financial services. These were titled "formal financial services" and "all financial services"- a fusion of both formal and informal financial services. Formal financial services measure whether a household uses only formal financial services whereas all financial services measures the households use of both formal and informal financial services.

The GLSS data asks questions on savings and credits (loans). With regard to credit, the question specifically asks the individual whether they have a savings/susu account. Normally, susu account is not considered a formal financial service but more rural or informal based. Because it was merged with access to a savings account, we could not isolate the effects to check the composition of those who had susu accounts and those who had savings accounts. Of particular interest to the paper would have been to be able to see whether these savings accounts were formal or informal. The other section focused on access to credit mainly loans. Several questions were asked about loans but our question of interest was to determine the source of loans. In assessing the question on the source of loans, we saw that there were formal and informal sources of loans. We created dummy variables namely formal, informal and all financial services. The formal financial service included only those that said that their source of loans was from formal sources such as banks while the informal loan dummy included those who had borrowed money from friends and neighbors and other informal sources of income. Our other dummy variable measuring access and use of financial services "all financial services" included the formal, informal and savings/susu account. It is from this that we derived the "formal financial services" and "all financial services".

At household level, we expect the use of financial services to be related to the location of the household and income level (measured by household wealth level). The *Urban* dummy variable and dummies for th wealth of the household at different levels are used in this regard. In terms of demographic characteristics, we expect that a households use of financial services would be relate to household size, gender of household head and age of household head. At the respondent level, we expect the use of financial services to be related to the respondent's level of education and employment status. We create dummies for the household head's level of education (*no education, primary, secondary* and *tertiary*) and create dummy variables for the employment status under three categories of employment status' namely agriculture self employed, non-agricultural self employed and formally employed.

At community level, we measure access to financial services through the presence of a post office, communication centre, bank and usable road. The presence of financial institutions without these community variables would nullify their impact within the community. For all these community characteristics, we also assess the impact of distance of households from these centers.

Using these variables, we derive descriptive and summary statistics on access to and the use of financial services in Ghana.

3.1 Descriptive Statistics

Tables 1-5 present a brief summary on financial intermediation in Ghana. Table 1 shows that on average, about 45% of Ghanaian households use financial services in Ghana. The majority of households in Ghana do not use financial services.

Table 1: Use of Financial Services in Ghanaian Households

Financial Services	Frequency	Percent	Cumulative
Does not use financial services	4,761	54.92	54.92
Uses financial services	3,908	45.08	100
Total	8, 669	100	

Source: Author’s calculations

The financial services assessed in this paper were loans (credit) and savings. Table 2 shows that about 27% of Ghanaian households have use loans while the majority, 72.72 percent do not have use loans.

Table 2: Access to Loan Services

Loans	Frequency	Percent	Cumulative
No access to loans	6, 304	72.72	72.72
Access to loans	2, 365	27.28	100
Total	8, 669	100	

Source: Author’s calculations

Breaking down the loan variable into formal and informal sources we see in Table 3 that about 6.14% of Ghanaian households use formal loans sources such as state and private banks, cooperatives, government agencies and NGO’s.

Table 3: Access to Formal Loans

Formal Loans	Frequency	Percent	Cumulative
Does not use formal loans	8,137	93.86	93.86
Uses formal loans	532	6.14	100
Total	8, 669	100	

Source: Author’s calculations

The bulk of loan sources (credit) in Ghana is acquired through informal means with the highest ranking being loans from relative/friends and neighbors. Money from traders and money lenders was also one of the common sources of informal loans. The use of formal financial services in Ghana is still very low.

Table 4: Access to Informal Loans

Informal Loans	Frequency	Percent	Cumulative
Des not use informal loans	6, 836	78.86	78.86
Use informal loans	1, 833	21.14	100
Total	8, 669	100	

Source: Author's calculations

Using savings as a measure of access to and the use of financial services, we see that about 27% of Ghanaian households have a savings or Susu account. Because we could not separate the savings and the susu account holders and with the background knowledge that Susu money holders are a semi-formal financial service in Ghana, it shows that saving rates in Ghana are still low. Nevertheless, deposits seem to be higher than borrowings which could imply that people are saving more than they are borrowing.

Table 5: Access to Savings/Susu Account

Savings/Susu Account	Frequency	Percent	Cumulative
Does not have savings/susu account	6, 329	73.01	73.01
Has savings/susu account	2,340	26.99	100
Total	8, 669	100	

Source: Author's calculations

The summary statistics on the use of financial services in Ghana is presented in Table 6 and Table 7. Table 6 assesses the use of financial services in Ghana using demographic and household characteristics while Table 7 looks at employment, regional and community characteristics on the use of financial services.

Table 6 discusses the summary statistics for the use of financial services within the household. Among the household characteristics, we find that household size was larger for formal than informal sources of finance. This does not seem to confirm literature because we expect that larger household sizes would use formal financial services to a lesser extent than their better off counterparts (Biendig et al, 2009). Nevertheless, the use of savings and loans does not only depend on socioeconomic status as households but also on a households experience of past shocks which might make them go the extra mile in insuring themselves against these shocks even by using formal financial services. The average age of the household head in formal financial services was 47 whereas in the all financial service was 44 implying that older people are more like to use formal financial services than their younger counterparts. With regard to the gender of the household head, financial services were used more by male headed homes. Households in urban areas also had access to financial services although there was not much difference between households in urban areas than used formal or any type of financial service. This could mean that being in an urban area increases one's access to financial services but does not necessarily imply that one would use formal financial services.

In relation to the wealth level of the household, we find that wealthier households used financial services to a greater extent than their less wealthy counterparts.

Table 6: Summary Statistics of Household Characteristics

	Formal Financial Service		All Financial Services	
	Coefficient	Std. Dev.	Coefficient	Std. Dev
Household Characteristics				
Household Size	5.239	3.33	4.410	2.91
Age of Household Head	47	12.60	44	14.05
Age Squared	2410.273	1294.65	2143.440	1383.50
Male Headed Household	0.776	0.42	0.745	0.44
Urban	0.453	0.50	0.468	0.50
Wealth level of Household				
Lowest	0.103	0.30	0.100	0.30
Second	0.130	0.34	0.136	0.34
Third	0.164	0.37	0.164	0.37
Fourth	0.220	0.41	0.218	0.41
Highest	0.383	0.49	0.382	0.49
Education of Household Head				
None	0.406	0.49	0.417	0.49
Primary	0.259	0.44	0.242	0.43
Secondary	0.105	0.31	0.090	0.29
Tertiary	0.070	0.25	0.058	0.23
Marital Status				
Married	0.707	0.46	0.595	0.49
Informal	0.096	0.29	0.124	0.33
Separated	0.039	0.19	0.039	0.19
Divorced	0.060	0.24	0.070	0.26
Widowed	0.064	0.24	0.079	0.27
Never Married	0.034	0.18	0.092	0.29

Source: Author's calculations

A majority of household heads were either uneducated or had attained primary level education. Few household heads had attained tertiary level of education. Majority of the households were married and married people seem to have the greatest access to and used financial services to a greater extent than the other categories of marital status, showing perhaps that being married does play an important role in using financial services and also determining the quality of financial service a household used.

Table 2 presents summary statistics on employment status for self employed (agriculture and non-agriculture), formally employed. Among the two indicators of financial service, we see that the non agricultural self employed and formally employed individuals used formal financial services more than those self employed in the agricultural sector. In the all financial services category, self employed individuals were more likely to use informal financial services than their formally employed counterparts.

Table 7: Employment, Regional and Community characteristics on the use of Financial Services.

	Formal Financial Service		All Financial Services	
	Coefficient	Std. Dev.	Coefficient	Std. Dev
Employment Status				
Non-Agric Self Employment	0.167	0.37	0.199	0.40
Agric Self Employment	0.152	0.36	0.172	0.38
Formal Employment	0.164	0.37	0.152	0.36
Region				
Western	0.075	0.26	0.110	0.31
Central	0.126	0.33	0.086	0.28
Greater Accra	0.071	0.26	0.137	0.34
Volta	0.062	0.24	0.078	0.27
Eastern	0.102	0.30	0.114	0.32
Ashanti	0.244	0.43	0.223	0.42
Brong Ahafo	0.152	0.36	0.099	0.30
Northern	0.066	0.25	0.072	0.26
Upper East	0.032	0.18	0.038	0.19
Upper West	0.070	0.25	0.044	0.20
Community Characteristics				
Post Office	9.80	12.61	11.11	14.56
Communication Centre	8.42	12.52	9.63	14.77
Presence of a Bank	8.54	11.55	11.25	15.08
Motorable Road	5.62	10.01	5.00	8.45

Source: Author's calculations

In terms of regional characteristics, access to and use of financial services was highest in the Ashanti region of Ghana which is also quite urban and well developed. Community characteristics also play a very important role in determining people's access to and use of financial services. We assess four main community characteristics namely access to post office, communication centre, bank and a usable road. The results provide an average of the distance in kilometers from these sources. We find that for formal financial services, post offices and banks seemed to be the farthest to reach for most people, particularly users in the all financial services category. Nevertheless, the distance to these places was shorter for accessing formal financial services than the all financial services category.

3.2 Methodology

This section estimates a household's likelihood of using financial services as a function of a combination of their individual characteristics as well as characteristics of their household, community, and region. Define the probability of using financial services as follows:

$$(1) \qquad P(y_i = 1|\mathrm{X}) = P(y_i^* > 0|\mathrm{X}) = P(\epsilon_i > -\mathrm{X}\beta|\mathrm{X}) = \Phi(\mathrm{X}\beta)$$
$$= \Phi(\beta_0 + \mathrm{X}_1\beta_1 + \mathrm{X}_2\beta_2 + \mathrm{X}_3\beta_3 + \mathrm{X}_4\beta_4)$$

where y_i is the 0-1 outcome with 1 corresponding to a household using a financial service and and 0 corresponding to a household not using a financial service, y_i^* is the latent variable modeled under linear model assumptions, $\epsilon_i \sim N(0,1)$ with Φ as the normal cdf, and $(\mathrm{X}_1 - \mathrm{X}_4)$ correspond to sets of individual, households, community, and regional characteristics, respectively.[2] The model is estimated with a weighted probit corrected for survey design.[3]

The estimation sample is restricted to analysis at the household level and the coefficients are shown as marginal changes in the probability of using financial services for continuous variables and the discrete change in the probability for dummy variables.

[2] This paper defines community as a single GLSS5 cluster. Within each of these communities, the number of households (randomly) sampled varies from 12 to 15.

[3] The estimates are probability-weighted with survey sampling weights and standard errors are adjusted for clustering at the PSU level and stratification at the regional level.

4. Econometric Results and Discussion

To empirically measure the access to and use of financial services among households in Ghana, we employ probit regressions for the two indicators of household use of financial services The results are presented in Table 8.

In both financial indicators, household size is both a positive and significant indicator of a households' use of financial services. The age of the household head in accessing formal financial services was both positive and significant whereas in the other financial service category, it was positive but not significant. Male headed households used financial services more than their female headed counterparts and this was positive and significant for formal financial services. This would imply than female headed households were less likely to use financial services but also less likely to use formal financial services. Urban households were more likely to use formal financial services but in the all finance category the urban variable was insignificant, implying that where both formal and informal financial services abound, households in urban areas may opt for non-formal financial services.

The variable wealth was positively related to the use of financial services. was a positive and significant indicator of the use of financial services. The magnitude of the coefficients were higher for the all financial services category showing that wealth indeed does increase a households use of financial services but it does not necessarily mean that they would always opt for formal financial services. The level of education of the household head also came out as positive and significant showing that households that had household heads who were highly educated were more likely to use financial services than households where the household head was not educated.

Table 9: Probit Regression on the use of Formal and All financial services

	Formal Financial Service		All Financial Services	
	Coefficient	Std. Err.	Coefficient	Std. Err
Household Characteristics				
Household Size	0.008***	0.001	0.043***	0.004
Age of Household Head	0.006***	0.001	0.003	0.003
Age Squared	0.000***	0.000	0.000	0.000
Male Headed Household	0.007	0.008	0.053	0.023
Urban	0.011	0.032	-0.111	0.070
Wealth level of Household				
Second	0.011	0.012	0.118***	0.027
Third	0.039**	0.016	0.178***	0.028
Fourth	0.054***	0.019	0.281***	0.029
Highest	0.081***	0.024	0.390***	0.028
Education of Household Head				
Primary	0.022*	0.010	0.103***	0.023
Secondary	0.112***	0.038	0.205***	0.050
Tertiary	0.162***	0.057	0.349***	0.069
Marital Status				
Married	0.032	0.021	0.139***	0.042
Informal	0.029	0.034	0.177***	0.045
Separated	0.008	0.034	0.114	0.061
Divorced	0.009	0.031	0.113	0.053
Widowed	0.012	0.032	0.128	0.053
Employment Status				
Non-Agric Self Employment	-0.003	0.010	0.080**	0.028
Agric Self Employment	-0.001	0.007	-0.007	0.020
Formal Employment	0.023	0.016	0.076	0.037
Region				
Western	-0.006	0.020	0.159	0.063
Central	0.036	0.032	0.096	0.064
Volta	-0.008	0.019	0.129	0.063
Eastern	-0.005	0.019	0.067	0.063
Ashanti	0.024	0.027	0.164	0.061
Brong Ahafo	0.035	0.032	0.138	0.063
Northern	-0.021	0.015	-0.034	0.063
Upper East	-0.011	0.019	-0.076	0.062
Upper West	0.033	0.035	0.043	0.067
Community Characteristics				
Post Office	-0.008	0.016	-0.043	0.047

Communication Centre	-0.008	0.007	0.052	0.020
Presence of a Bank	0.001	0.016	-0.016	0.044
Motorable Road	-0.020	0.009	0.048	0.024
Obs	4835		4835	
Pseudo R2	0.131		0.095	

*** p<0.01, ** p<0.05, * p<0.1

Marital status was also positive in both financial indicators but was significant in the all finance category for married people and informally married people. Although all the different marital status categories were more likely to use financial services than their never married counterparts, the result was significant for married people and informally married people who were used the all finance service indicator.

Self employed individuals both in the non-agric and agric sectors were less likely to use formal financial services but those in formal employment were more likely to use formal financial services when compared to their counterparts working in family businesses. When comparing these two financial indicators we see that households in the agricultural sector who were self employed were less likely to use financial services

Regionally, we find that households in the Western, Volta, Eastern, Northern and Upper East regions were less likely to use formal financial services than households in the Greater Accra region. In the all finance category, we find that households in the Northern and Upper East regions were less likely to use financial services than those in the Greater Accra region. The regional characteristics were not statistically significant in explaining household use of financial services.

Assessing the community variables, we see that households which were near a bank or had a bank in proximity to their abode were more likely to use financial services but this result was not statistically significant. Post office and communication centre were negative possibly because these are not formal financial systems. We would have expected a usable road to be significant in assessing formal financial services but it did not. In the all finance service category, usable (motorable) road and communication centre were important avenues through which a combination of formal and informal financial services took place. Here, the presence of a bank was not significant possibly because of the larger composition of informal means of accessing financial services.

5. Conclusion

Financial inclusion is a crucial instrument for financial development particularly in African countries. Most African countries have undeveloped financial institutions which has stagnated their levels of economic growth for quite some time. The aim of this paper was to assess households' use of financial services to determine the individual, demographic and household characteristics that make households take up financial services. Of particular interest was the need to determine which financial services were demanded mostly by households.

Using two measure of household financial indicators, namely formal financial services and all financial services- a fusion of both formal and informal sources of finance, the findings revealed that the wealth level of the household, male headed households, household heads with higher levels of education, formally employed people and people living in the more developed regions of Ghana such as Ashanti, Brong Ahafo, Greater Accra regions of Ghana were more likely to use financial services both formal and informal financial services. The number of households using formal financial services in Ghana was is still low while use of informal financial services continues to abound.

Indeed much effort is needed to make intentional efforts to increase financial services where the poor are located. It is important for government to also get involved to offer the necessary assistance and offsetting of costs needed to institute these formal financial services where they are needed most- among the poor. Efforts also need to be made to increase financial access particularly in the Northern and Upper East regions of Ghana. Ghana is still a long way off from achieving financial inclusion for all, nevertheless this is not impossible if we adopt the right mix of policies and increase financial literacy and access to financial services where they are needed most.

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