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Participation in the credit market by small scale enterprises in Ghana: Evidence from Wa Municipality

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This study analyses the determinants of small scale enterprises participation in credit market and also examines their choice of credit source in the Wa Municipality of Ghana using 200 small scale enterprises. Primary data were collected with the help of self-administered structured questionnaires. In a departure from much of the existing literature, bivariate probit model is used to account for potential unobserved heterogeneity. The study finds evidence of a positive correlation between the unobserved factors affecting participation and choice of credit sources. The results revealed that entrepreneur's decision to participate in the credit market is significantly influenced by age, household size, education, income and wealth. Also, age and its squared term and education significantly influenced entrepreneurs' preference for formal credit sources. The study recommends that appropriate educational packages both formal and informal such as evening schools and adult literacy programmes should be organised for owners of small scale enterprises. There is also the need for policy measures to increase access to formal financial resources by small-scale enterprises via the establishment of credit insurance scheme to protect the financial institutions against high risks associated with advancing credit to small-scale enterprises.

Key words: Small scale enterprises, bivariate probit, participation, credit market, Ghana.

INTRODUCTION

It is a generally accepted tenet of international development that small scale enterprises play an important role in poverty alleviation especially in Africa. Programmes embarked upon by new partnership for Africa's development (NEPAD), international finance corporation (IFC), united nations industrial development organization (UNIDO), united nations development programme (UNDP) among others in addressing African development have identified private sector development, and in particular small scale enterprises (SSEs) development as a priority

area for action (United Nations, 2009).

Small and medium scale enterprises (SMEs) are seen as the lifeblood of most economies (Gunu, 2004) through the provision of income, savings and the development of entrepreneurial capabilities and indigenous technology which generate employment. It is estimated that SME's employ about 22% of the adult population in developing countries (Daniels and Ngwira, 1994; Fissaeha, 1991) and are particularly important in supporting economic growth and livelihoods in developing countries

Cobbold et al. (2008) and if all stakeholders are to show serious commitment to the development of the SMEs sub-sector, it would lead to a meaningful transformation and prosperity (Ahiawodzi and Adade, 2012).

Indeed, the need to promote SMEs in developing economies is of paramount importance since it brings about income and wealth redistribution, economic self-dependence, entrepreneurial development and employment creation (example, Aremu M.A., university of Ibadan, Ibadan, Nigeria, paper presentation). Kilby (1975), sees SMEs as a quasi-sponge for urban employment and a provider of inexpensive consumer goods with little or no import content, serving an important pressure-releasing and welfare-augmenting function. SMEs also contribute to long-run industrial growth by producing an increasing number of firms that grow up and out of the small-scale sector.

In Ghana, about 90% of companies registered are micro, small and medium enterprises and these enterprises have been identified as the catalyst for economic growth of the country as they are a major source of income and employment (Mensah, 2004). They provide about 85% of manufacturing employment in Ghana; contribute about 70% to Ghana's gross domestic product (GDP) and account for about 92% of businesses in Ghana (Abor and Quartey, 2010).

Aside from providing opportunities for employment generation, SMEs help to provide effective means of curtailing rural-urban migration and resource utilization. By largely producing intermediate products for use in large scale companies, they contribute to the strengthening of industrial inter-linkages and integration. A vibrant, efficient and effective SMEs sub-sector generates many resultant benefits for stakeholders, employees, customers, employers as well as the entire economy (Ahiawodzi and Adade, 2012).

In spite of the dominant role of the SMEs to economic growth and social development in Ghana, poor access to both formal and informal credit has affected the growth of the sector. Indeed, Mensah (2004) identified the relatively undeveloped financial sector with low levels of intermediation, lack of institutional and legal structures that facilitate the management of SME lending risk, and high borrowing cost and rigidities in interest rates as the main factors that account for lack of finance to small scale enterprises in Ghana. The credit market in Ghana consists of both formal and informal financial lending institutions. Commercial banks and other formal institutions fail to cater for the credit needs of small-holders, mainly due to their lending terms and conditions. It is generally the rules and regulations of the formal financial institutions that have created the myth that the poor are not bankable, and since they cannot afford the required collateral, they are considered not creditworthy (Adera, 1995). No business organization can successfully achieve its organizational objectives without the needed funds. Small scale enterprises frequently lack access to credit causing them to encounter high financial cost and high failure rate (World bank, 1978).

According to Aryeetey et al. (1994), there are several constraints to the development of small scale enterprises especially ineffective participation in the credit market to get access to financial resources. They face a number of challenges in accessing external finance. The demand for collateral by financial institutions and other money lenders in the provision of loans makes it very difficult for small scale entrepreneurs to access finance. High interest is yet another challenge facing these entrepreneurs in their attempt to participate in the credit market to get access to funding. Although informal credit institutions have proved relatively successful in meeting the credit needs of small enterprises in some countries, their limited resources restrict the extent to which they can effectively and sustainably satisfy the credit needs of these entrepreneurs (Nappon and Huddlestone, 1993).

Access to credit market by entrepreneurs has increasingly been regarded as an important tool for raising funds mainly by mobilizing resources to more productive uses. As development takes place, one question that arises is the extent to which credit can be offered to the entrepreneur to facilitate their taking advantage of the developing entrepreneurial activities. The generation of self-employment by the entrepreneurs requires investment in working capital. However, at low levels of access to credit, the accumulation of such capital may be difficult. Under such circumstances, participation in the credit market can help the entrepreneurs to accumulate their own capital and invest in employment-generating activities (Atieno, 2001). In addition, access to finance allows small scale enterprises to undertake productive investments, expand their business and acquire the latest technologies, thus ensuring their competitiveness and that of the nation in general (UNCTAD, 1995, 2001).

The Government of Ghana, recognising the important contributions of SMEs to national growth and development, established the national board for small-scale industries (NBSSI) in 1985 to promote and develop SMEs. In fulfilling one of its core mandates of provision of credit to SMEs, the board of NBSSI in 2010 facilitated access to credit for about seven hundred and fifty five (755) SMEs in Ghana (Okine, 2011). Government has also introduced various microfinance schemes to support SMEs growth and development and among them are micro finance and small loan centre (MASLOC), venture capital trust fund and export development and investment fund (EDIF) (Mensah, 2004). But, these efforts by government to promote the growth and development of SMEs have not yielded the needed result. Despite these efforts the majority of SMEs still have only limited access to bank services to support their private initiatives (Braverman and Guasch, 1986; VibeGhana.com (2013).

Several studies have been carried out in relation to the problems financing SMEs in Ghana (Example, Aryeetey et al., 1994; Boeh, 1996 etc.). These studies contribute to our knowledge about constrains facing small scale entrepreneurs. On the other hand, investigation on the determinants of small scale enterprises participation in the credit market in Ghana particularly Wa Municipality, is still evolving. It is against this background that this study aims at analysing the determinants of small scale enterprises participation in the credit market. To achieve this, the following questions are to be addressed: What factors determine small scale enterprises' participation in the credit market and what influences their choice of credit sources (that is, formal and informal)?

METHODOLOGY

Study design

The target population involved 500 registered SMEs in the Wa Municipality. These cut across trading activities (buying and selling of goods), manufacturing activities and services. A representative sample size of 200 entrepreneurs was randomly selected using the simple random sampling technique. Primary data were collected using questionnaires. However, for illiterate respondents questions were interpreted to them and the responses recorded.

Methods of data analysis

Small scale enterprises participation in the credit market is usually influenced by a number of factors which can be categorised into personal, household and enterprise characteristics. Entrepreneur's personal characteristics considered here include age, sex and education. Household characteristics considered are household size and wealth while enterprise characteristics are enterprise age, number of employees, income and distance to credit source. These categories of factors are hypothesized to influence enterprise decisions on whether to apply for credit or otherwise.

Previous studies on participation in the credit market employ either a binary logit or probit model (see for example, Aleem, 1990; Porteous, 2003; Okurut, 2006; Mpuga, 2008) whereas multinomial logit is used for entrepreneur's choice of credit source(see for example, Mpuga, 2008; Ajagbe, 2012). This study develops a sequential model using the bivariate probit estimation (biprobit) with sample selection procedure to investigate the determinants of entrepreneur's participation and choice of credit source. The model is applied sequentially in two stages to regress the variables that explain the likelihood of participation and further investigate the variables that explain the probability of choice of credit source. Hence, the entrepreneurs are grouped as 'participants' and 'non-participants' in the first stage of the analysis, and as 'formal credit borrowers' and 'informal credit borrowers' in the second stage for participants of the credit market.

In this study, as in other market participation studies, the choice decision of a given entrepreneur is considered to be discrete so that the choice variable is qualitative in nature. A rational entrepreneur will choose to participate in the credit market if the utility to be enjoyed exceed the utility to be gain when not participating. This approach is based on the linear random utility assumption (Greene, 2008), which is normally given as:

$$\begin{cases} U_{i0} = x_1^i \beta_1 + e_1 \\ U_{i1} = x_2^i \beta_2 + e_2 \end{cases} \tag{1}$$

Where U_{ij} is a measure of utility derived by entrepreneur i form choosing alternative j (with decision not to participate in the credit market being U_{i0} whereas participating is denoted by U_{i1}); x is a vector of characteristics specific to entrepreneur i as well as attributes associated with alternative j and specific to the i the entrepreneur, β is a vector of unknown parameters, and e_{ij} is random disturbances associated the choice of alternative j by entrepreneur i.

The probability that entrepreneur i choose a particular alternative (i.e. $Y_i = 1$) versus another (i.e. $Y_i = 0$) is associated with the probability distribution of the error differences is the expected utilities from the choices and given by:

$$P_i = Prob\,(Y_i = 1|x) = Prob\,(Y_i^* > 0|x) = Prob\,(e_i > -x_i^i\beta|x) = F(x^i\beta) \tag{2}$$

From equation 2, F is the cumulative distribution function of $e_i(= e_{i1} - e_{i0})$ evaluated at $x^i\beta$, and $y_i^*(= U_{i1} - U_{i0})$ is a latent variable, since it is unobservable, and is linked to y_i, the observed binary variable, through the relation below:

$$y_i = \begin{cases} 1 \; if \; y_i^* > 0 \\ 0 \; otherwise \end{cases} \tag{2}$$

The specification of a model to describe the relation between the probability of choosing an alternative and the explanatory variables is dependent on the assumption made regarding the distribution of the error term. The two mostly assumed distributions in the literature are the normal and logistic corresponding to probit and logit models respectively.

Because this is a non-linear model, the effect of the explanatory variable is measured in terms of marginal effect defined as partial change in the probability of the outcome attributable to a change in the variable. If the error term in the utility model is assumed to be normally distributed, the analysis can be carried out using a probit model. From Eq. (2), in the framework of the simple (univariate) probit model, the probability function of choosing an alternative versus another is given by:

$$P_i = Prob\,(Y_i = 1|X) = \int_{-\infty}^{x_i^i\beta_k} \emptyset(t)dt = \Phi(x_i^i\beta) \tag{3}$$

With $\emptyset(.) = (2\pi)^{-0.5}\exp(-t^2/2)$ and $\Phi(.)$ being the density and cumulative distribution functions respectively of a standard normal random variable. In the bivariate probit model, the assumption of correlated normally distributed error terms in a two-equation system leads to the equation below:

$$\begin{cases} y_{i1}^* = x_{i1}^i \beta_1 + e_{i1}, \; Y_{i1} = 1 \; if y_{i1}^* > 0, \; 0 \; otherwise \\ y_{i2}^* = x_{i2}^i \beta_2 + e_{i2}, \; Y_{i2} = 1 \; if y_{i2}^* > 0, \; 0 \; otherwise \end{cases} \tag{5}$$

where e_{ij} is the normally distributed error term,

$$E[e_{t'}|x_{t1,}x_{t2}] = E[e_{t2}|x_{t1,}x_{t2}] = 0,$$
$$Var[e_{t1}|x_{t1,}x_{t2}] = Var[e_{t2}|x_{t1,}x_{t2}] = 1,$$

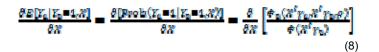and $Cov[e_{t1,}e_{t2}|x_{t1,}x_{t2}] = \rho$. The bivariate normal cumulative distribution function is given by:

$$Prob(X_t < x_{t,}) = \int_{\infty}^{w_{t1}\beta_1}\int_{\infty}^{w_{t2}\beta_2}\phi_2(z_1,z_2,\rho)dz_1dz_2 = \Phi_2(z_1,z_2,\rho), \quad (6)$$

With the probability density function being

$$\phi_2(z_1,z_2,\rho) = \frac{e^{-0.5(z_1^2+z_2^2-2\rho z_1 z_2)/(1-\rho^2)}}{2\pi(1-\rho^2)^{0.5}}.$$ To simplify this to allow for constructing the log-likelihood function, Greene (2008) uses the notation $q_{tj} = 2y_{tj} - 1$ so that $q_{tj} = 1$ or -1, respectively, if $y_{tj} = 1$ or 0, for $j = 1, 2$ and $t = 1, ..., N$; $z_{tj} = x_{tj}'\beta_j$ and $w_{tj} = q_{tj}z_{tj}$, $j = 1, 2$; and $\rho_t^* = q_{t1}q_{t2}\rho$. The probabilities that enter the log-likelihood function then become:

$$Prob(Y_1 = y_{t1,}Y_2 = y_{t2}|x_1,x_2) = \Phi_2(w_{t1,}w_{t2,}\rho_t^*). \quad (7)$$

The subscript 2 in the probability density ϕ_2 and cumulative distribution Φ_2 functions signifies the underlying bivariate normal distribution.

Greene (2008) argue that several 'marginal effects' can be evaluated in the bivariate probit, but an interesting step usually involves examining the derivatives of the conditional mean functions. In the light of this, a basic marginal effect function can be stated as:

$$\frac{\partial E[Y_t|Y_2=1,N]}{\partial x} = \frac{\partial[Prob(Y_t=1|Y_2=1,N]}{\partial x} = \frac{\partial}{\partial x}\left[\frac{\Phi_2(x_t'\gamma_t,x_t'\gamma_t,\rho)}{\Phi(x_t'\gamma_t)}\right] \quad (8)$$

where Φ_2 and Φ are, respectively, the bivariate and univariate cumulative distribution functions, γ_j contains all nonzero elements of β_j and likely to also contain some zeros in the positions of variables that appear in only one of the two equations, and $j = 1, 2$. For a dummy explanatory variable, however, the marginal effect is determined by using a modified form of equation (8) which will reflect discrete changes in the predicted probabilities. Maximum likelihood method is employed in estimating the bivariate probit model.

Description and measurement of the variables

In this research, participation in the credit market is defined as the probability that an entrepreneur answered yes to the question, 'Have you borrowed a loan in the last 12 months (before the survey)'? Therefore, an entrepreneur is considered participant in the credit market if he/she had taken a loan in the last 12 months and non-participants otherwise. Based on this information, entrepreneurs were classified into two categories: participants and non-participants of the credit market. A dummy variable was used to capture participation; we assigned the value 1 for participants and 0 otherwise. Once the response on participation/non-participation is obtained, further investigation was made on choice of credit source, given a positive response on participation. A dummy variable was also used to measure credit source; formal borrowers were assigned the value 1and 0 for informal borrowers. Age variable is the age of the SSE owner and is performed on entrepreneurs aged 18 years and above. A dummy variable was used to capture sex; here if the owner of SSE is male we assigned the value 1 and 0 otherwise. Household size considered number of people living with SSE owner and whose responsibilities he/she bears. Level of education is measured by the total number of years the entrepreneur spent in receiving formal education. Income is net profit in Ghana Cedi (GHS) generated from the business operations annually[1]. Enterprise age is the number of years the enterprise has been operating. Distance is a continuous variable measured in kilometres and refers to the distance (in km) from SSE owner to the nearness credit source. Number of employees is the total number of employees employed by the enterprise. We constructed an asset index using factor analysis to measure wealth. This index captures ownership of physical assets mainly: consumer durables assets including bicycle, refrigerator, electric iron, mobile phone, radio, TV, stove); property (another house), and dwelling characteristics such as the use of electricity, building materials, and toilet facilities.

RESULTS AND DISCUSSION

Of the 200 small scale entrepreneurs surveyed, 115 representing 57.5% did not borrow (non-participants) while 85 constituting 42.5% did borrow (participants) (see Table 1).

Further investigation on the choice of credit source; given that an entrepreneur had participated in the credit market revealed that 31 respondents constituting 36.5% borrowed from formal sources and 54 entrepreneurs representing 63.5% borrowed from informal sources (see Table 2). Table 3 shows the descriptive statistics of the variables used in our estimations.

Table 4 presents the results of the biprobit estimation of the determinants of entrepreneurs' participation and choice of credit source. The Wald test was used as a measure of goodness of fit. The Wald test of the hypothesis that all regression coefficients are jointly equal to zero is rejected. In other words, Wald test result suggests that age, age squared, sex, education, household size, number of employees, enterprise age, distance to credit source, income and wealth jointly influence small scale entrepreneurs' participation in the credit market. Additionally, Table 4 report the results of the likelihood ratio (LR) test for the correlation estimator ρ. The LR test rejects the null hypothesis of independent equations at a 1% level of significance. This suggests

Table 1. Participation in the credit market by small scale enterprises**.**

Participation Status	Frequency	%
Non-Participants	115	57.5
Participants	85	42.5
Total	200	100

Source. Author's field work, 2013.

Table 2. Choice of credit by small scale enterprises

Credit Source	Frequency	%
Formal Borrowers	31	36.5
Informal Borrowers	54	63.5
Total	85	100

Source. Author's field work, 2013.

Table 3. Descriptive statistics of variables used in the model

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Dependent variables					
Participation in the Credit Market*	200	0	1	0.43	0.496
Choice of Credit Source*	85	0	1	0.69	0.869
Independent variables					
Age	200	20	64	33.45	9.122
Age square	200	400	4096	1201.69	689.871
Sex*	200	0	1	0.59	0.493
Household Size	200	1	20	4.28	3.052
Education	200	0	23	8.59	5.702
Enterprise Age	200	1	35	6.1175	5.12825
Distance	200	1	10	4.15	3.067
Number of Employees	200	1	23	3.67	3.841
Income	200	20	1500	268.28	207.836
Wealth	200	2	53	21.59	12.275

* = categorical indicator variable
Source: Author's Field Work, 2013.

that estimating separate univariate probit models is likely to yield biased results; hence bivariate model results are superior to those of the univariate models. Specifically, the positive point estimate of ρ implies that the unobserved factors affecting participation and choice of credit source are positively correlated.

The result shows that among the ten explanatory variables (age, age squared, sex, education, household size, enterprise age, number of employees, distance, income and wealth) considered for the models, probability of small scale entrepreneurs' participation in the credit market is influenced to a great extent by five namely: age, household size, education, income and wealth. However, only four variables were not significant determinants of small scale entrepreneurs' participation in the credit market in the study. It must be noted that all the variables showed signs that are in tandem with theoretical expectations.

The age of the entrepreneur is a significant determinant of the probability of small scale entrepreneurs' participation in the credit market. The result shows that the age of an entrepreneur is positively related to the probability of participation in the credit market, hence, the probability of participation increases by 5.6% for every

Table 4. Biprobit model estimates for participation and credit source.

Variables	Participation		Credit Source	
	Coefficient	Marginal Effect	Coefficient	Marginal Effect
Age	0.1460613[*] (0.079444)	0.0563827	0.1873934[**] (0.0857882)	0.0330031
Age square	-0.001538 (0.0010607)	-0.0005937	-0.0020636[**] (0.0010549)	-0.0003634
Sex	-0.003901 (0.2274736)	-0.001506	0.1218419 (0.269742)	0.021167
Household size	0.1254342[***] (0.0384177)	0.0484202	0.0516532 (0.0525664)	0.009097
Education	0.4117409[***] (0.0912713)	0.1589406	0.3041762[**] (0.1196451)	0.0535705
Enterprise age	-0.0042049 (0.0237784)	-0.0097107	-0.0042049 (0.0237784)	-0.0007405
Distance	-0.0444453 (0.0371174)	-0.0171568	0.0266742 (0.0385479)	0.0046978
Number of Employees	0.0344418 (0.0361574)	0.0132952	-0.0022537 (0.0374388)	0.0132952
Income	0.0019963[***] (0.0007042)	0.0007706	0.0005962 (0.0006116)	0.000105
Wealth	-0.0197881[*] (0.0115473)	-0.0076386	0.0034669 (0.0137361)	0.0006106
Constant	-4.556197[***] (1.450986)		-6.285965[***] (1.773128)	
ρ	0.9999958 (0.0016616)	Likelihood-ratio test of ρ χ^2 (1) = 38.7226[***]		
Number of observation = 200 Censored observations=115				
Wald χ^2(20) = 68.57[***] Log likelihood = -146.75776				

Source. Author's field work, 2013
Notes. Standard errors in parentheses; [*]Significant at 10%, [**]significant at 5%, [***]significant at 1%.

additional year of the entrepreneur age. This implies that as the age of an entrepreneur increases the more likely he/she would participate in the credit market. Therefore, we could conclude that due to the capability of the older entrepreneurs to accumulate assets which are used as collaterals, financial institutions perceive them to be creditworthy; hence, they are more likely to access credit than the younger entrepreneurs. These results are consistent with (examples, Swain RB, Uppsala University, Sweden, Ph.D. dissertation)and Mpuga (2004).

Furthermore, household size was found to be statistically significant indicating that household size is a good predictor of probability of small scale entrepreneurs participating in the credit market. The positive coefficient indicates that larger households are more likely to be borrowers and hence participate in the credit market. An increase in the number of household increases the probability of participation by 4.8%. Perhaps, larger households are better credit risks because they have more relationships with the business community and have more diversified sources of income (Schreiner and Nagarajan, 1998). This is statistically significant at the

1% level and is consistent with the previous studies (for instance, Jabber et al., 2002; Ho 2004; Simtowe, 2006).

Education of small scale entrepreneurs positively affects their decision to participate in the credit market. This variable is statistically significant at the 1% level. An increase in the years of schooling increases the probability of entrepreneurs' participation by almost 16%. This implies that the more educated a small-scale entrepreneur is, the more likely he/she would seek external funding to support the business. Plausible explanation to this finding could be their ability to keep proper records, higher level of adoption and absorption of credit information provided by money lenders and their better understanding of the dynamics of borrowing. In other words, the higher the educational level of the entrepreneur, the higher lender perceives them to be credit worthy.

Moreover, income levels of small scale entrepreneurs are important component determining their demand for credit and subsequently their participation in the credit market. At 1% level, it is accepted that the decision to participate in the credit market is highly influenced by

income. This finding implies that as income of entrepreneurs increases the more likely they would demand credit and subsequently participate in the credit market. This finding can probably be attributed to the fact that with increased income, the entrepreneur could save more and acquire assets which could be used as collateral for credit. Additionally, increased income would lead to increased savings which could be re-invested leading to increased business activities and a resultant increase in credit demand. This result reflects the pecking order theory which states that firms will first use internal equity financing, followed by external debt financing and finally external equity financing. This result reinforces the findings of Doan et al. (2010) and Messah and Wangai (2011).

However, small-scale entrepreneurs' decision to participate in the credit market is negatively influence by wealth. Their probability to participation decrease by a percentage point when wealth increases and this was marginally significant. Our finding is contrary to studies by Doan et al. (2010) who noted a positive impact of wealth on credit participation.

With regard to entrepreneur's choice of credit source three variables were statistically significant namely: age, age squared and education. The age of the entrepreneur makes a significant difference in choosing formal credit source. The results reveal a statistically significant positive impact of age on formal credit source. Hence, an increase in age of the entrepreneur by a year increases the probability of choosing formal credit instead of informal credit by 3.3%. In other words, older entrepreneurs tend to borrow more from formal credit market than younger ones, and by implication show greater need for credit from formal source.

However, this relationship has an inverted U shape as indicated by a significantly negative coefficient for the square of the age of the entrepreneur. Alternatively, the probabilities of applying for formal credit significantly increases with higher age of applicant (age), but at a decreasing rate (age squared). This implies that at latter stages the older the entrepreneur the less productive such as individual is in terms of economic activities hence the lesser the ability to pay back the loan. Formal credit institutions will not be willing to extend credit facilities to aged entrepreneurs because of fear of default. These results are consistent with Kimuyu and Omiti (2000) who argue that the positive impact of the entrepreneurs' age on the demand for credit might probably reflects the impact of experience in business, which is closely correlated with age. But this goes contrary to the findings by Zeller (1994).

Similarly, education has a positive influence on the likelihood of small scale entrepreneur's choosing formal credit source and this effect is significant at the 5% level.

The result further revealed that the probability of choosing formal credit increases by 5.4% for every year of schooling of the entrepreneur as compared with informal credit sources. This result is in agreement with Zeller (1994) who reported a positive and significant relationship between participation in all credit markets and education.

CONCLUSION

This study sought to analyse the determinants of participation of small scale enterprises in the credit market and their choice of credit sources in the Wa Municipality of Ghana. Primary data were collected from the chosen sample of 200 small scale enterprises using a structured questionnaire. The empirical analysis provides important insights into the working of Ghana's credit markets and participation in these markets by small scale enterprises. In a departure from much of the existing literature, bivariate probit model is used to correct for possible selection bias in results. In all, we can state that running the bivariate probit model improved the efficiency of the resulting estimates. The results drawn from the bivariate probit model concluded that entrepreneur's decision to participate in the credit markets is significantly influenced byage, household size, education, income and wealth. Furthermore, their choice of formal credit source is significantly determine by age, education and household size.

Recognising the importance of education in determining small scale enterprises' participation in the credit market, we recommend that appropriate educational packages both formal and informal such as evening schools and adult literacy programmes should be organised for owners of small scale enterprises.

Considering the fact that informal credit has limited financial resources, there is need for policy measures to increase access of small-scale enterprises to formal credit sources.

This could be achieved through the establishment of credit insurance scheme to protect the financial institutions against high risks associated with advancing credit to small-scale enterprises. Also, given that financial statements are prerequisite in sourcing funds from formal credit institutions, owners of small-scale enterprises need to improve their accounting and record keeping systems as these provides insight into their business. Diversification of loan portfolios by formal financial institutions would enable them cater for the different financial needs of small-scale enterprises.

REFERENCES

Abor J, QuarteyP (2010). Issues in SMEs in Ghana and South Africa, Int. Res. J. Financ.Econs. (39):218-228.

Adera A (1995). Instituting Effective Linkages between the Formal and the Informal Financial Sectors in Africa: A Proposal.Cariplo: Finafrica.

Adera, A., (1995); "Instituting effective linkages between formal and informal financial sector in Africa. A proposal saving and Development. Pp. 5-22.

Ahiawodzi AK, Adade, TC (2012).Access to Credit and Growth of Small and Medium Scale Enterprises in the Ho Municipality of Ghana,British J.Econs., Financ. Manage.Sci. 6:2.

Ajagbe FA (2012). Application of Probit Analysis to Factors Affecting Small Scale Enterprises' Decision to Take Credit: A Case Study of Oyo State, Nigeria, Asian Economic and Financial Review, pp.1064-1071

Aleem I (1990). "Imperfect Information, Screening and the Costs of Informal Lending: A Study of a Rural Credit Market in Pakistan", World Bank Econ. Rev. 4(3):329-349.

Aryeetey E, Baah-Nuakoh A, Duggleby T, Hettige H, Steel W (1994).Supply and Demand for Finance of Small Scale Enterprises in Ghana. Accra: World Bank Discussion Paper No. 251.

Atieno R (2001). Formal and Informal Institutions Lending Policies and Access to Credit by Small-Scale Enterprises in Kenya: An Empirical Assessment. Nairobi: African Economic Research Consortium p.111.

Boeh OO (1996). Strategies for Strengthening Small and Medium Sized Industries in Ghana. Accra: Anansesem Publications Limited.

Braverman A, Guasch LJ (1986). Rural Credit Markets and Institutions in Developing Countries. lessons for for Policy Analysis from practice and Modern Theory. Washington DC: World Dev. 14(10-11):1253-1267.

Daniels L, Ngwira A (1994). Results of a Nationwide Survey on Micro, Small and Medium Enterprises in Malawi, GEMINI Technical Report No 5. New York: PACT Publications.

Doan T, Gibson J, Holmes M (2010). What Determines Credit Participation and Credit Constraints of the Poor in Peri-Urban Areas, Vietnam? Retrieved May 2013, from MPRA Paper Web site: http://mpra.ub.uni-muenchen.de/27509/

Fissaeha Y (1991). Small Scale Enterprises in Lesotho: Summary of a Countrywide Survey, Gemini Technical Report, No 14 Washington D.C, Development Alternatives Inc.

Greene W H (2008). Econometric Analysis (6th ed.). New Jersey: Prentice Hall.

Gunu U (2004). Small Scale Enterprises in Nigeria: Their Start Up, Characteristics, Sources of Finance and Importance. Ilorin J. Bus Soc. Sci. 9(1 & 2):36-43.

Ho G (2004). Rural Credit Markets in Vietnam: Theory and Practice Retrieved April 2013, from The Federal Reserve Bank of Minnesota Web site: http://www.minneapolisfed.org/mea/contest/2004papers/ho.pdf

Kilby P (1975). "Manufacturing in Colonial Africa", Colonialism in Africa 1969-78, Vol. 4, London: Cambridge University Press.

Messah OB. Wangai PN (2011). Factors that Influence the Demand for Credit for Credit among Small- Scale Investors: A Case Study of Meru Central District, Kenya. Res. J. Financ. Acc. 2:2.

Mensah S (2004). A Review of SME Financing Schemes in Ghana. A Paper Presented at the UNIDO Regional Workshop of Financing Small and Medium Scale Enterprises, Accra, Ghana, 15TH to 16TH March 2004. Retrieved April 2013, from http://www.semfinancial.com/publications/SME%2Financing%20Schemes%20in%20Ghana.

Mpuga M (2008). Constraints in Access to and Demand for Rural Credit "Evidence from Uganda. A Paper for Presentation during the African Economic Conference (AEC) 12-14 November 2008, Tunis, Tunisia.

Nappon D, Huddlestone B (1993). "Rural Infrastructure Priorities for Food Security and Sustainable Development: The Case of Central Africa" in U. Thimm and H. Hahn, eds., Regional Food Security and Rural Infrastructure, Lit VerlagMünster-Hamburg, Vol. II.

Okine CB (2011). NBSSI to Extend more Support to SMEs. Daily Graphic, p.29.

Okurut FN (2006). "Access to Credit by the Poor in South Africa: Evidence from Household Survey Data 1995 and 2000", Stellenbosch Economic Working Papers, 13/06.

Porteous D (2003). "The Landscape of Access to Financial Services in South Africa: Labour Markets and Social Frontiers", South African Reserve Bank, No.3:1-6.

Schreiner M, Nagarajan G (1998). Predicting creditworthiness with publicly observable characteristics: evidence from ascras and roscas in the Gambia. Savings Dev. 22(4):399-414.

Simtowe FP (2006) To what extent are credit constraints responsible for the non-separable behavior at household level? evidence from tobacco growing households in rural Malawi University of Malawi - Center for Agricultural Research and Development Journal of Applied Sciences.

UNCTAD (1995). Issues Concerning SMEs, Access to Finance, Geneva: United Nations.

UNCTAD (2001). Survey of Good Practice in Public Private Sector Dialogue, Enterprise Development Services, New York and Geneva United Nations.

United Nations (2009, May 09). Small Scale Enterprise Development and Foreign Direct Investment in Africa: Challenges and Opportunities. Retrieved April 2013, from Documents and Resources for Small Businesses and Professional Web site: http://www.docstoc.com/docs/44375713/Small-Scale-Enterprise-Development-and-Foreign-Direct-Investment-in.

VibeGhana.com (2013, February 12) Government to Establish Small and Medium Scale Enterprises Fund. Retrieved May 2013, from VibeGhana.com Web site: http://www.vibeghana.com/2013/02/12/government-to-establish-small-and-m-41k.

World Bank (1978).Macroeconomics Indicators of Ghana. Washington DC: World Bank Report Publication Number 14547.

Zeller M (1994). "Determinants of Credit Rationing: A Study of Informal Lenders and Formal Credit Groups in Madagascar". World Development, 22(12):1895–1907.