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# **Evaluating enterprise policy interventions in Africa: a critical review of Ghanaian small business support services**

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## **Abstract**

Enterprise policies play a central role in economic development across Africa, but more effective, evidence-based policy evaluation is required to inform future interventions. The paper makes a contribution to: (i) filling this gap in our understanding; (ii) developing more rigorous and appropriate evaluation methodologies. The issues are examined through an empirical study into non-use of small business support services in Ghana. Survey evidence from 253 owner-managers is complemented by interviews with owner-managers and service providers. It concludes that policy evaluation in Sub-Saharan Africa would benefit from multi-method approaches to address limitations in official datasets and to facilitate more in-depth understanding.

## Introduction: the policy context

Enterprise promotion is increasingly seen as a central strand in the new generation of economic development policies that are being introduced across sub-Saharan Africa (Chipika and Wilson 2006; Robson, Haugh, and Obeng 2009; Rogerson 2001). The rationale behind a shift in emphasis from development aid to entrepreneurship is already well-documented (Chrisman and McMullan 2004; Hjalmarsson and Johansson 2003; Wren and Storey 2002). There is also evidence that a resurgent small firms sector can generate economic and social value in developing and transition country contexts (Smallbone and Welter 2006; Smallbone, Welter, Voytovich, and Egorov 2010). However, before investing precious time and resources in implementing such policies it is important to consider their potential effectiveness in an African context. The challenges facing those who seek to promote entrepreneurial activity in specific geographic locations, such as the need for flexibility, effective targeting and a longer-term perspective, are relatively well-rehearsed (e.g. Mokry 1988: 29). However, as the editors of a recent Special Issue on small business support have argued, there is still a great deal to learn regarding the design and implementation of these services:

‘While the benefits of entrepreneurship are becoming near universally acknowledged, our understanding of how and when governments intervene to assist entrepreneurs, and indeed which, if any, specific entrepreneurs should receive assistance in some shape or form, still has substantial knowledge gaps, and remains controversial.’  
(Robson, Wijbenga, and Parker 2009: 533)

Given this continuing uncertainty, what measures should African policy-makers adopt in order to support more productive forms of entrepreneurial activity at national and local levels? There are many different options in terms of their overall approach, and in the particular combination of enterprise support measures to be adopted (Stevenson and Lundström 2002, 2007). While there is some evidence that enterprise support policies can generate positive outcomes, research in developed countries suggests that even a relatively long-term interventions may prove insufficient to address entrenched regional differences in entrepreneurial activity (Greene, Mole, and Storey 2007; Mokry 1988). In addition, while approaches originating from developed and transition countries can inform African policy-making, a comparison between different country studies suggests a number of context-specific factors that may need to be taken into account in the design and implementation of enterprise support measures. These include ‘traditional’ factors, some of which have been identified in earlier literature, and newly-emerging issues, which may take on a distinctive form, shaped in part by their setting. For instance, while engrained socio-cultural practices may create managerial and operational problems for female owner-managers (McDede and Spring 2005; Mukhtar, 2002; Saffu and Manu, 2004), these may take a particular form in a developing country as a result of way that socio-technical innovations are adopted, and the novel practices that they generate (e.g. the use of mobile communications technologies to enact financial transactions).

The main aim of the paper is to make a contribution to filling this gap in our understanding of enterprise policy with reference to the kind of small business support initiative that has played a central role in African countries over the last three decades. New empirical findings are combined with a review of relevant theoretical frameworks and research methodologies in order to identify approaches to evaluation that are likely to prove most effective in this context. It addresses the following research questions:

- 1 Why has there been a low take-up of small firms support services in Ghana?
- 2 How far does evidence from Ghanaian small firms and support agencies challenge or confirm previous findings in the business support literature?
- 3 What lessons can be drawn in order to develop more rigorous and appropriate enterprise policy evaluation methodologies for use in Ghana and in other African countries?

In the next section, the existing literature on enterprise policy is reviewed, with particular reference to small firms' support, to establish an appropriate theoretical framing for the empirical study and to identify the principal questions that need to be addressed. An outline of the methods adopted for the empirical study is followed by a detailed analysis and discussion of the main findings. The concluding section reviews the contribution to theory development, and draws out the implications for research, policy-making and practice.

## **Theoretical framework**

### ***Enterprise policies – the case for intervention***

In recent years, many governments in both developed and developing countries have focused their economic development policies on entrepreneurship programmes (Gilbert, Audretsch, and McDougall 2004: 321; Robson, Wijbenga, and Parker 2009). Entrepreneurship is seen as an engine of economic growth (Goedhuys and Sleuwaegen 2010; Nugent and Yhee 2002), and in many developing economies, promotion of entrepreneurial activity has become a key strategy for creating employment and reducing poverty (Robson, Haugh, and Obeng 2009). The rationale for government intervention has been hotly debated, with researchers continuing to argue over the impact of enterprise support initiatives on business performance and on broader socio-economic goals (e.g. Greene, Mole, and Storey 2007; Smallbone and Welter, 2006; Stevenson and Lundström, 2002; Storey 2000, 2008). Many studies have rationalised government intervention as a response to 'market failures' due to factors such as imperfect information (e.g. Johnson, Webber, and Thomas 2007; Storey 1994). For example, Mason (2009) noted the existence of market failure in a European context in terms of the ability of small businesses to access venture finance. In Africa, market failure has also been identified in the areas such as access to finance, availability of non-financial services, and infrastructure development (e.g. Buame 1996; Robson, Haugh, and Obeng 2009; Van Dijk 1997). Government policy statements also tend to justify interventions in terms their capacity to generate employment, income, economic restructuring and innovation (Beck, Demirgüç-Kunt, and Levine 2005; Gilbert, Audretsch, and McDougall 2004; Goedhuys and Sleuwaegen 2010; Mason 2009). Small business development initiatives are generally been classified into two categories: 'hard' (i.e. finance-related) measures and 'soft' assistance, such as technical support which develops or enhances the skills and the capability of entrepreneurs (Ramsden and Bennett 2005; Robson, Wijbenga, and Parker 2009). In many African countries, policies have tended to emphasise 'hard' support measures, though there has been a trend towards more mixed approaches in recent years (cf. Kapila and Mead 2002; Ninsin 1989). In Ghana, the first major attempt to support small business through 'soft' assistance was signalled in 1985 with the establishment of the National Board for Small-Scale Industries (NBSSI) by the Peoples National Defence Council (PNDC) government. This was followed more recently by the launch of similar public sector initiatives, such as Ghana Regional Appropriate Technology Industrial Services (GRATIS) and the Business Development Fund (n.b. the Government of Ghana budget allocation to NBSSI and GRATIS for the period 2005-2009 amounted to GH13 million Cedis [equivalent to US\$9.1 million as at December 2009] according to Ministry of Trade and Industries Budget Statements). There have also been

significant voluntary sector initiatives in Ghana, with the African Project Development Facility [APDF] (2002) report documenting about 48 donor programmes supporting small businesses. With governments across the world now facing severe budgetary constraints, and international donor agencies demanding greater accountability, there is considerable pressure to generate improved evaluations of enterprise policy interventions of all kinds, including direct support to small businesses, which is the focus of this paper.

### ***Small business support services - explaining differences in take-up***

Several recent studies suggest that external business support *can* have a favourable influence on small firms' performance (Chrisman and McMullan 2004; Cumming and Flescher 2010; Mole, Hart, Roper, and Saal 2009). However, other studies have pointed to more ambiguous results (e.g. Belso Martinez 2009; Bennett 2008; Robson and Bennett 2000). A World Bank study reached similar conclusions with regard to developing countries:

'The record of public support to private firms in developing countries has been mixed with many projects demonstrating poor returns. The challenge is to design programmes in a manner such that there is adequate number of successful ventures, relative the unsuccessful ones, to justify the resources expended in these programmes.'  
(Batra and Mahmood 2003: 19)

The variability in outcomes highlighted in these studies may be the result of differences in the design and implementation of specific interventions, the characteristics of participating firms and owner-managers, or in their respective operating environments. In other words, it appears likely that a more complex set of causal relationships is in play. This paper addresses the issue with reference to factors influencing the take-up of small business support services, and with a particular focus on explanations for the low take-up of external services. A few studies, such as Gorman, Hanlon, and King's (1997: 66) ten year review of research results on entrepreneurship education, have suggested a degree of consistency in levels of take-up across a diverse range of small businesses. However, there is also strong evidence to suggest that smaller firms are less likely than their larger counterparts to use external support services (Bennett and Robson 2003; Berry, Sweeting, and Goto 2006; Curran and Storey 2002; Jones 2004; Kiggundu 2002; Mole 2002a, 2002b; Storey 2004). Two widely-cited reasons have been given for the low take-up of external support services such as training: small business owners may not be aware of the benefits that they could derive from training, or they may be making informed judgements based on their perceptions of its cost and potential benefits (Storey and Westhead 1997: 62). Curran and Blackburn (2000: 182) enumerated a number of additional factors that included: poor marketing of support programmes which could affect levels of awareness, high cost of services, poor service delivery, lack of trust or confidence in suppliers, and services that do not meet user needs. Henderson, Sutherland, and Turley (2000) found the main reasons to be lack of time and the financial cost of the activity. Geography has also been identified as a potential obstacle. For example, Schwartz and Bar-el (2004) found that distance was the most important reason cited by small businesses located in the remote areas of Brazil. Various studies confirmed that internal characteristics of the business and the aspirations of the owner-manager influence such decisions (e.g. Bennett and Robson 2000; Carrier 1999; Gorman, Hanlon, and King 1997; Kailier 1990; Schwartz and Bar-el 2004). The low take-up of external advice and management training has also been linked to broader societal influences such as gender inequalities (Amine and Staub 2008; Mayoux 2009).

### ***Small business support - evidence from Africa***

To date, there have been few detailed evaluations of small business support interventions in African countries (n.b. exceptions include: Buame 1996; Nieman 2001; and Verspreet and Berlage 1999). In addition, previous policy evaluation research has for the most part been undertaken in developed and transition countries. This leaves open the possibility that different factors may be in play in Africa. For example, in one earlier study conducted in Ghana, business owners reported that they saw government support agencies as unattractive and unreliable due to political interference in their activities (Buame 1996). Ghana's traditional religious beliefs, which co-exist with relatively high levels of adherence to Christian and Islamic monotheisms, may also exert a particular influence. For example, it appears that some owner-managers may prefer to consult their ancestors (or 'gods of the land') or the 'Sooth Sayer' when there is a major problem, rather than a professional business advisor (Buame 1996; Kiggundu 2002; Takyi-Asiedu 1993). In order to address these complexities, this paper incorporates both 'generic' and context-specific explanations for low take-up of services with particular reference to two business support organisations operating in Ghana, the National Board for Small Scale Industries (NBSSI), and the Empretec Ghana Foundation.

## **Research methods**

### ***Background***

Ghana is located in the Western part of Africa and has a population of about 23 million people with a landmass of about 239,460 square kilometres, approximately the size of UK. Ghana has experienced consistent political stability since 1992 when the 4<sup>th</sup> republic was ushered in. The country has also experienced continuous GDP growth averaging 6% from 2000 to 2008. Inflation and interest rates also reduced significantly to about 10% and 15% respectively (World Bank 2006). A recent study estimated that Ghana has about 2.3 million non-farm enterprises, and that about 99.4% of these enterprises fall within the category of micro enterprises (Masakure, Henson, and Cranfield 2009: 467). In 2006, Ghana was ranked among the top 10 reformers on the ease of doing business by the World Bank and International Finance Corporation, with the most recent indicators suggesting a steady improvement in the business environment for entrepreneurs over the last five years (World Bank 2006: 2; World Bank 2010: 6). However, Ghana still faces many challenges in promoting more economically, socially, environmentally sustainable forms of entrepreneurial activity, particularly, in relation to promoting the growth of 'informal sector' enterprises, while also respecting traditional values (Dia 1996: 155).

### ***The survey: sample and questions***

The study uses a survey-based approach to examine the reasons for non-use of services provided by the two external support agencies. It examines the influence of firm-level factors, the characteristics of the owner-managers and their expectations regarding business support. Since there is no single public register of small businesses in Ghana (Buame 1996; Wolf 2004), the sample for this survey was drawn from multiple business listings, including those administered by the Ghana Export Promotion Council, the Association of Ghana Industries, and Ghana Telecom. The sample for this study was drawn from a larger survey of 500 small businesses located in six regions of Ghana where it was estimated that 83.3% of all industrial establishments are located (Ghana Statistical Service 2003). Sample selection was based on the three main sectors of the Ghanaian economy (i.e. agriculture (n=90), manufacturing (n=193), and services (n=217)). For the purposes of the study, small businesses were defined as those employing between 4 and 50 full-time employees. The businesses were

categorised as follows: 'micro businesses' with less than 9 full-time employees; 'small businesses' employing 10-19; and 'medium-sized businesses' employing between 20 and 50 full-time workers (Appendix 1). This range of businesses was selected because they are the main focus of Ghanaian government policy on small business growth. The survey was administered in person by one of the researchers during the period January to June 2005 and achieved a response rate of 83.2% (Robson and Obeng 2008). This paper reports findings relating to a sub-sample of 253 usable responses from owner-managers regarding their reasons for non-use of two of Ghana's leading small business support organisations, The National Board for Small Scale Industries (NBSSI) and the Empretec Ghana Foundation (Empretec). These support institutions were chosen because the NBSSI is the main government institution set up to promote the development and growth of micro and small scale enterprises in Ghana while Empretec Ghana Foundation is an umbrella of Empretec, an international entrepreneurship and capacity building programme which is currently operating in Africa, Latin America and Asia and operates in the major regions of the country. Owner-managers completed a written questionnaire and were asked to select from a list of six reasons for the non-use of external support services. These were generic explanations previously identified by the researchers as part of the literature search: (1) External advice not needed; (2) High cost of service fee; (3) Support not relevant to our needs; (4) Unaware about the existence of external support services; (5) Support services not located in our area of operation; (6) Time constraint – too busy to seek external support. In order to allow for unanticipated and context-specific responses, respondents were also able to indicate 'other reasons' not provided on the list. Additional insights into these reasons, and other aspects of the study, were obtained from a series of face-to-face interviews conducted by the researchers with owner-managers and with official representatives of NBSSI, Empretec and other leading Ghanaian service providers.

NBSSI was established in 1985 with the aim of assisting the Ministry of Trade and Industry (MOTI) in formulating, developing and implementing a national programme on small business growth. It is funded by the Ghanaian Government and bilateral donors. NBSSI operations cover all of Ghana's 10 regional capitals and most of its district capitals. Empretec Ghana Foundation was selected for comparative purposes. It is a national centre of Empretec, an international entrepreneurship and capacity building programme which is currently operating in 29 countries in Africa, Asia and Latin America (Empretec 2011). The Empretec scheme was initiated in 1988, under the auspices of the United Nations Conference on Trade and Development (UNCTAD). It has operated in Ghana since 1990, with funding from the United Nations Development Programme (UNDP), the Ghanaian Government, Barclays Bank, the UK's Department for International Development, and other organisations. It offers training, consultancy, advisory and financial services, with a particular focus on growth oriented businesses (Empretec 2011; Rogerson 2001: 134; Tweneboah-Boateng 2008).

## **Findings and comparative analysis**

### ***Reasons for non-use of support services***

Table 1 is a summary of the respondents' reasons for non-use of NBSSI and Empretec Ghana Foundation services. In addition to these descriptive statistics, bi-variate and multiple regression techniques were applied to the data. The most commonly reported reasons are discussed in relation to previous empirical studies and associated theorising. The analysis concludes with an examination of the extent to which these factors can be associated with specific characteristics of the businesses and their owner-managers. Appendix 1 contains definitions of all the variables used in the survey.

\*INSERT TABLE 1 ABOUT HERE\*

*Unaware of services / service providers*

The most commonly reported reason for non-use of these external support services was that owner-managers were unaware of their existence. This 'ignorance explanation' (Storey and Westhead 1997) was identified by 38.7% of respondents (Table 1). A number of studies in developed countries have indicated that lack of awareness is not a major reason for non-use (e.g. Curran and Blackburn 2000; Bennett and Robson 2003; Berry, Sweeting, and Goto 2006). However, in the Ghanaian context, there is a strong evidence to argue that the ignorance explanation is a major reason for the low usage of NBSSI and Empretec, a finding that was reinforced by evidence from the owner-manager interviews:

*'There is lack of public information about their existence and what they can provide for the businesses. They should have visited our premises to educate us about their capabilities and where they can be located'.*

*'Sometimes we don't have knowledge of their existence or even if we know we still don't know what services they provide'.*

Service providers were also aware of the issue. For example, one official acknowledged the problem and went on to propose a pragmatic response that would be appropriate to a Ghanaian context, due to its high rates of church attendance:

*'Lack of information about the services that we offer could be a reason for the low patronage of our services and sensitisation through churches and radios could increase the level of awareness'. (Official, NBSSI)*

*Practical barriers: high service fees, location and lack of time*

These three factors are each identified by at least one fifth of respondents as a reason for non-use of support services. The high level of service fees was reported by 23.3% of respondents. Though the number of responses is small, there are indications that service fee levels might also be one of the factors explaining differences in take-up between NBSSI, which had some subsidised provision, and Empretec, where users were supposed to pay the full cost of the services provided (Obeng 2007). In countries where government support initiatives are provided free, or at heavily-subsidised rates, cost has not been seen as a significant explanatory factor (Curran and Blackburn 2000). However, this scenario is less likely to occur in developing countries like Ghana, where resource constraints typically affect both users and providers of support services (e.g. Pentax Consulting 2005). The owner-manager interview evidence supported this finding:

*'I can't afford any of the services but I think I have enough experience to work without their support'.*

*'I do not attend their training programmes due to high cost of accessing external training for my workforce'.*

Service providers also recognised that service fees were a major barrier, with some highlighting the importance of subsidised provision:

*'If training programme is subsidised and the cost reduced then many of them will come, but if it is full cost recovery then they don't come'. (Official, Association of Ghana Industries)*

The location of the business in relation to service provision was another practical barrier, particularly for businesses located in geographically remote areas (Schwartz and Bar-el 2004) and where transport infrastructure is limited. In the Ghanaian context, 26.5% of the respondents indicated that support services were not located in their areas of operation. There was also evidence that small businesses located in the small towns had particular problems in gaining access to services (Table 4). This may be associated with time constraints, which were reported by 20.9% of the respondents overall (Table 2).

#### *Services 'not needed' or 'not relevant to needs'*

Owner-managers' perceptions played an important role in explaining the non-take up of services. Some 24.1% of the respondents reported, 'external advice not needed', while 20.2% reported 'support not relevant to our needs' (Table 1). While some developed country research (e.g. Sexton, Upton, Wacholtz, and MacDougall 1997: 6), suggests that small businesses often have a clear idea about what they want to learn, empirical research conducted in developing countries has revealed that many owner-managers lack a real understanding of their training needs (e.g. Schwartz and Bar-el 2004; Trulsson 1999). The comments of owner-managers tended to suggest either that their own success implied that help was unnecessary, or that advice alone was insufficient to address current challenges:

*'If my management aspect is not good, I wouldn't have been able to build the most popular restaurant in this area'.*

*'Although they do provide the needed advice, they do very little to support or lift us up from our problems'.*

Service providers expressed concern about these kinds of owner-manager attitudes:

*'There was lack of appreciation of the value of the professional services on the part of small businesses. They don't see training as an important component of their businesses'. (Official, service provider - anonymised)*

Ghanaian service providers have highlighted the low level of education of some owner-managers as one of the main reasons for the low level of understanding of the benefits of the use of external advice (cf. Storey 2004). One of the interviewees commented in the following terms:

*'Most owner-managers have low educational qualifications and that served as a barrier to accessing the service'. (Official, service provider - anonymised)*

#### *Other reasons for non-use of services*

The views of some respondents suggest more complex, context-related reasons for the low take-up of services. For instance, an unpleasant encounter with a service provider could influence the future use of similar services, as indicated by the following owner-manager comment:

*‘Previous engagement which didn’t help my business has given me the notion that even if I visit them they would have nothing better to offer’.*

In the case of NBSSI, which had experienced inadequate logistics and human resource problems in the past (Aryeetey and Ahene 2004), reputational issues might have affected its capacity to attract new users, despite its relatively wide geographic coverage. Political interference in the activities of the public support agencies could also influence the level of use of external support services:

*‘Sometimes the politicians use political platforms to announce government initiatives for small businesses and this make some of the owner-managers reluctant to contact us for support’.* (Official, service provider - anonymised)

Finally, the fear of losing trained staff to other businesses was a common theme, which emerged during the interviews. The following comment illustrates how training provision can be perceived negatively by owner-manager as a direct result of earlier experiences:

*‘Formerly I used to send my employees to [the] Canadian Technical Institute at Osu and I paid their training fees and allowances. However, after training, they demand higher wages and when I am not able to meet their demand; they leave for other companies where the salaries are attractive. So in the end I become the loser’.*

### ***Analysis of business and owner-manager characteristics***

Having analysed the main reported reasons for non-use of NBSSI and Empretec support services, this section of the paper uses bi-variate analysis to examine the influence of specific characteristics of the business and the owner-manager on non-use of services. Business variables examined included industry sector, growth, size, exporter, age, innovator (novel or incremental), R&D, training, family business and location. The owner-manager characteristics examined were gender, age, and education (Appendix 1). Tables 2 to 4 summarise the bi-variate test results of the characteristics of the business and the owner-manager and the reason for non-use of external advice.

#### ***Business characteristics***

For business characteristics, a careful examination of the tables revealed that most of the variables showed a weak or no statistical association with the reasons for the non-use of the support agencies. However, some interesting results merit further discussion:

\*INSERT TABLE 2 ABOUT HERE\*

- **Industry sector:** this characteristic showed a statistically significant association at the 5% level with reasons such as ‘external advice not needed’, ‘high cost of service fee’, ‘support not relevant to our needs’, and ‘unaware about the existence of the support services’. Lack of awareness received the highest response rate, with businesses in manufacturing sector reporting the highest rate of 46.0%, followed by businesses in the agricultural sector (43.1%), whilst businesses in the service sector reported the lowest rate of 30.6%. For ‘external advice not needed’, the service sector received the highest rate of 29.6%, followed by the agricultural sector (25.5%) while the businesses in the manufacturing sector reported the lowest rate of 16.1%. With regard to the ‘high cost of service fee’, the manufacturing sector received the highest respondents at 31.0%, followed by the agricultural sector (19.6%) and the service sector (18.4%). Intuitively, it could be

speculated that businesses in the service sector appeared to have had significant information about the existence of external support services compared to the manufacturing and agriculture businesses. However, it appeared that for businesses in the service sector, the main reasons for not using external advice was not lack of awareness but rather external advice was not needed or not relevant to the needs of the businesses. For businesses in the manufacturing sector, the main reasons could probably be attributed to the lack of awareness about the services and the high cost of service fees (Table 2).

- **Growth rate:** this characteristic showed statistically significant associations with two variables, the high cost of service fees and the time constraint. More than a third of medium growth rate businesses reported fee costs (33%), compared to around one fifth of stable and declining businesses (20.4% and 19.1% respectively), and only 11.1% of fast growth businesses. In terms of time constraints, the differences were smaller, with fast growth businesses being the highest at 22.2%, compared to declining businesses, which had the lowest rate (17.0%). It appears that, for the fast growth businesses, the true cost of training was not only the market price but rather the opportunity cost of the absence of the trainee at the workplace. This finding is supported by previous studies suggesting that the opportunity cost of managerial time may vary between smaller low-growth businesses and their larger, higher-growth counterparts (Jones 2004: 113). For declining businesses the result apparently suggests that time is not a major explanatory factor for non-use of external support services (Table 2).
- **Business size:** Perhaps the most important finding from an African perspective is that micro- and small-sized businesses were the most likely to report high cost of service fees as a reason for non-use of external support service (26.5% and 25.5% respectively), as compared to medium-sized firms (6.7%) (Table 2). Though the relationship is only weakly statistically significant at the 10% level, the result is supported by a number of studies (e.g. Fraser, 2005; Fraser, Storey, Frankish, and Roberts 2002; Patton, Marlow, and Hannon 2000; Wolf, 2004), and has clear implications for policy, given the sheer number of micro- and small- businesses in Ghana and other countries in Sub-Saharan Africa (Table 2).

\*INSERT TABLE 3 ABOUT HERE\*

- **Business location:** The findings on location echo those of a number of studies undertaken in developing countries that have examined this relationship (Abdullah 1999; Schwartz and Bar-el 2004). Small businesses located in small towns were the most likely to explain their non-use of support services as being due to a lack of awareness about the existence of support services or of services not located in their areas of operation. This suggests that there may be an inappropriate distribution of small business support, with insufficient attention being given to small businesses located outside the main conurbations and larger towns (Table 3).
- **Family business:** Perhaps surprisingly, this characteristic did not influence the reported reasons for non-use of services. However, evidence from related research suggests a number of areas where family relationships do exert an influence on small business development in Ghana (Obeng 2007; Robson and Obeng 2008). This may indicate certain limitations in the survey data with respect to this variable (Table 3).
- **Innovation and R&D:** There were two striking differences between more innovative businesses and those identified as less innovative. Firstly, the innovators were more likely to mention 'support not relevant to their needs' (22.9% versus 10.3%). However,

innovative businesses were the least likely to report support services not located in their area of operation as an explanation factor for the non-use of external support services. Interestingly, the finding appeared to contradict the Kailer (1990) study. This research had suggested that small business owners' attitudes towards training were influenced by a number of factors, including the innovativeness of the business, a finding that was supported by Hausman (2005) and Freel (2005). By contrast, the main explanation for non-use of external support agencies for businesses involved in R&D activities were likely to include external advice not needed where non-R&D businesses received the highest score. On the other hand, R&D businesses were more likely to indicate support services not located in their area of operations (Table 3).

- **Training:** Small businesses which provided training to their workforce were less likely to mention the 'high cost of service fees' and 'support not relevant to our needs' as compared to the businesses which did not provide training. Given the statistical significance of this relationship, the result appears to reflect the value that those owner-managers place on training although the nature of the training that they provide is in-house (Table 3).

#### *Owner-manager characteristics*

Analysis of the characteristics of the owner-managers and reasons for non-use of external support agencies revealed significant associations with two main variables, age and the educational level (n.b. though bi-variate analysis by gender did not reveal any statistically significant associations in relation to reasons for non-use of services, there is evidence that gender does exert an influence on small business development (Robson and Obeng 2008; Saffu and Manu 2004; Schindler 2010) (Table 4):

\*INSERT TABLE 4 ABOUT HERE\*

- **Age of owner-manager:** There was significant association between age and reasons such as 'external advice not needed', 'support not relevant to our needs', 'lack of awareness about the existence of external support services' and 'support services not located in the area of operation'. Interestingly, older owner-managers received the highest response rates in all the cases which suggest that the older owner-managers were the most likely not to engage the services of external support agencies such as NBSSI and Empretec. This finding also underpinned the similar assertions in the literature (e.g. Kirby and King 1997; Takyi-Asiedu 1993). However, Table 4 also shows that the young owner-managers were the least to report non-use reasons such as external advice not needed and the lack of awareness about the existence of support services. In other words, it appears that young owner-managers were more likely to use external advice agencies *provided* they had access (Table 4).
- **Educational level of owner-manager:** There was a significant association between educational level and reasons for non-use such as, 'external advice not needed' and, 'lack of awareness about the existence of the support services'. Interestingly, owner-managers with 'A' level or higher qualifications received the highest response rate for external advice not needed while those with junior school qualification or lower reported the least. More importantly, the result suggests that lack of awareness of existence of support services is a major reason for non-use of services by owner-managers with lower education qualifications, given that 55.6% of the respondents from that category indicated that reason (Table 4).

### *Factors influencing service take-up at NBSSI: a logit analysis*

This section takes the analysis further through a multivariate analysis of the characteristics of the businesses, the owner-managers and the reasons for not wanting business advice and training (n.b. this analysis is limited to the NBSSI as there was insufficient usable data for Empretec). Table 5 shows the results of the estimates of a logit model, which consolidates some of the previous findings.

\*INSERT TABLE 5 ABOUT HERE\*

Firstly, the regression result demonstrates a significant association between the growth of the businesses and time constraint as a reason for not using NBSSI services. This suggests that fast growth businesses were more likely not to use NBSSI services because of time constraint. Secondly, the model revealed that businesses involved in R&D activity were the least not to use NBSSI services due to reasons such as ‘external advice not needed’. However, ‘services not located in our area of operation’ could be considered as one of the main reasons for non-use of NBSSI services by businesses involved in the R&D activity. This finding provides support and additional explanation to the bi-variate analysis. For businesses which provided training to their workforce, ‘support not relevant to our needs’ could be the least reason for not wanting to use NBSSI services. To increase the level of service take-up by this category of businesses, NBSSI have to improve on the awareness, accessibility, and time levels of their services. In terms of the businesses located in conurbations, estimates of the logit model demonstrate that they were least likely to report being unaware of NBSSI services and lack of accessibility as reasons for not using these services. Secondly, Table 5 shows that the age and the educational level of the owner-managers were significantly associated with many of the reasons for not using NBSSI services indicated on the list. With regard to the age, the test result suggests that older owner-managers were most likely not to use NBSSI services for most of the reasons indicated, with the exception of ‘time constraint’ and ‘high cost of service fee’. The perception of the older owner-managers, that they had acquired enough experience in life and in business, does therefore appear to influence their decisions in relation to support services. The traditional belief in Africa is that old age is a sign of wisdom. This could also be a possible explanatory factor, as illustrated by the comment of one experienced owner-manager:

*‘I have been in the business long enough to rely on my own ideas’.*

Thirdly, the analysis reveals that owner-managers with secondary school qualifications were the least likely to indicate ‘external advice not needed’ and ‘unaware of services as reasons’ for not engaging NBSSI services. However, the findings also suggest that awareness of NBSSI services was much lower amongst the many small business owner-managers who lacked this level of educational attainment.

### **Conclusion**

This paper has conducted a comparative analysis of business support policies focusing on the reasons for non-use of external support services by small firms in Ghana. In doing so, it has addressed the broader question of how enterprise policy interventions might be enhanced by developing appropriate evaluation techniques, grounded in the relevant literatures. Many of the survey results for the reasons for non-use of NBSSI and Empretec services reflect the findings of studies conducted in other countries (Gorman, Hanlon, and King 1997). The main reasons given for non-use of service, which included a lack of awareness about the existence

of services, the high cost of service fees, and support not relevant to their needs, may appear unsurprising from a developed country perspective. However, it makes an important contribution as one of the first detailed surveys to evaluate this aspect of small business support service provision in an African context. This exercise also encourages critical reflection on the design of enterprise policy evaluation methodologies. It has demonstrated the value of quantitative approaches in countries that still lack detailed, reliable, comprehensive and current small firms' datasets. However, though the survey revealed interesting patterns in the data, the interview evidence in particular indicated the presence of complex influences, which are unlikely to prove amenable to large scale quantitative methods. Surveys should therefore be seen as one element in an evaluation design, which could be more fully integrated with in-depth, ethnographic approaches in order to probe the underlying causal factors. The use of an 'other reasons' category, in combination with the face-to-face interviews, enabled respondents to indicate some of the distinctively Ghanaian influences, ranging from reputational issues and perceptions of government interference in the work of some public support agencies to the fear of losing trained staff. Ghana's geography and transport infrastructure were also significant influences, with businesses located in the small towns being more likely to indicate 'lack of awareness' as major barrier, as compared to their counterparts in conurbations. Education is another area with particular resonances in Ghana, where resources are constrained demand is outstripping capacity.

#### ***Implications for theoretical development***

This study has contributed new insights into the reasons for the low take-up of small business support services in a geographic region that remains largely un-researched. The findings largely support earlier conceptual and empirical work in relation to the major influences on non-use of such services. However, they also indicate the presence of context-specific factors, such as concern over perceived political interference in service delivery, reputational issues arising from previous support initiatives, and obstacles related to the geographic distribution of services and the educational backgrounds of many owner-managers. There is as yet relatively little discussion of such factors in the literature (Buame 1996; Kiggundu 2002). Future studies could usefully examine their relative importance, potential interactions between factors, and the extent to which they are replicated in other parts of Africa.

#### ***Implications for research***

The study has highlighted a number of important methodological issues. The evidence presented in the empirical section has indicated the potential value of larger scale, survey-based data collection, particularly in countries such as Ghana where official small firms datasets are still relatively limited. However, while improved quantitative analysis has an important role to play, the study also indicates the need for complementary qualitative approaches to policy evaluation. For example, the absence of strong statistical associations in relation to the influence of business characteristics on service take-up suggests that survey-based methods are not, in themselves, sufficient to unravel the complex influences at work. Future policy evaluation studies in Africa would benefit from the more routine use of multi-method research designs that are capable of addressing the dual requirement for more rigorous data collection and for a more in-depth understanding of context-specific perceptions and practices.

#### ***Implications for policy and practice***

The findings of the study have a number of policy implications for governments, bilateral organisational and practitioners that use tax payers money to provide business support services for small business development. Firstly, it is essential that interventions are designed

to meet the needs of particular types of small business (Rogerson 2001: 120). This requires more comprehensive, rigorous and sophisticated forms of data collection, in order to be better informed about existing provision, and to identify which issues need to be prioritised in the design and implementation of new support programmes. Finally, the study indicates a number of more immediate practical issues for service providers such as NBBSI and Empretec. For example, in order to attract fast growth businesses, it is essential to design training programmes in ways that can be easily integrated into the operating activities of small businesses, thereby reducing opportunity costs, such as time lost as a result of training. Furthermore, while owner-managers with secondary education seem to be aware of NBBSI, the organisation needs to raise its profile amongst those with a more limited educational background. Service providers can also explore the potential of technological innovations such as web-based tools and the use of Open Educational Resources (OERs), which offer new opportunities to address resource constraints and other significant barriers such as geographic coverage (Ivins 2008; Thakrar, Wolfenden, and Zinn 2009). Given the scale and diversity of Africa's micro- and small firm populations, and the intense pressures on public and voluntary sector providers, there is an urgent requirement to develop a new generation of evaluation methodologies that are capable of informing more innovative, context-sensitive interventions.

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## Appendix 1: Definitions of variables used in survey data analysis

|  |   |
|--|---|
| <b>Gender</b>                                | Dummy variable; entrepreneur is male = 1, otherwise = 0   |
| <b>Postgrad/ Prof/ Degree/ 'A' Level</b>     | The entrepreneur has postgraduate qualifications, professional qualifications, a degree or 'A' levels which are equivalent to high school graduation in the US. |
| <b>Technical/ Vocational/ Apprenticeship</b> | The entrepreneur has technical or vocational qualifications or has completed an apprenticeship.   |
| <b>'O' Levels</b>                            | The entrepreneur has 'O' levels which are awarded to 17 year old school pupils.   |
| <b>Age Entrepreneur</b>                      | Age of the entrepreneur in years- Younger entrepreneurs aged 16-39; middle-aged entrepreneurs aged 40-49; Older entrepreneurs aged 50+.                         |
| <b>Previous Experience</b>                   | Previous experience in business – experience as an owner-manager or an employee in a similar business.  |
| <b>Size</b>                                  | Number of employees.  |
| <b>Age of Business</b>                       | Age of business in years- Young firms are aged less than 10 years and old firms are aged 10 years or greater.   |
| <b>Types of Business</b>                     | Micro business < 9 employees; small, 10-19 employees; medium, 20-50 employees.  |
| <b>Growth</b>                                | Employment growth over the period 2002-2005: declining <0%; stable 0%; medium growth >0% and < 40%; fast growth > 40%   |
| <b>R&amp;D</b>                               | Dummy variable; firm spends money on research and development = 1, otherwise = 0.   |
| <b>Family Business</b>                       | Dummy variable; business employs one or more people who are from the family of the entrepreneur =1, otherwise = 0.  |
| <b>Training</b>                              | Dummy variable; business provide training to the workforce = 1, otherwise = 0.  |
| <b>Exporter</b>                              | Dummy variable; business exports goods and services = 1, otherwise = 0.   |
| <b>Innovation</b>                            | Business involvement in incremental or novel innovation.  |
| <b>Manufacturing</b>                         | Dummy variable; firm is from the manufacturing sector.  |
| <b>Services</b>                              | Dummy variable; firm is from the services sector.   |
| <b>Agriculture</b>                           | This is the excluded comparison variable.   |
| <b>Conurbation</b>                           | Conurbations are firms located in Accra (the Capital), Tema and the surrounding area.   |
| <b>Large Town</b>                            | Large towns are settlements with populations of 150,000 to 1,500,000.   |
| <b>Small Town</b>                            | Small towns are settlements with populations of less than 150,000. This is the excluded comparison variable.  |

**Table 1: Explaining the non-use of NBSSI and Empretec: most commonly stated reasons**  
 (% of respondents reporting non-use, multiple responses possible)

|  | All  | Did not use NBSSI or Empretec | Used NBSSI but not Empretec | Used Empretec but not NBSSI |
|--|------|-------------------------------|-----------------------------|-----------------------------|
| Unaware about the existence of their external support services | 38.7 | 39.0                          | 46.2                        | 0                           |
| High cost of service fee                                       | 26.5 | 23.3                          | 76.9                        | 50.0                        |
| Support services not located in our area of operation          | 26.5 | 24.2                          | 69.2                        | 25.0                        |
| External advice not needed                                     | 24.1 | 23.7                          | 23.1                        | 50.0                        |
| Time constraint – too busy to seek external support            | 20.9 | 20.3                          | 23.1                        | 50.0                        |
| Support not relevant to our needs                              | 20.2 | 19.1                          | 46.2                        | 0                           |
| Others   | 13.5 | 13.6                          | 15.4                        | 0                           |
| N  | 253  | 236                           | 13                          | 4                           |

**Table 2: Reasons for non-use of NBSSI and Empretec services by firm sector, size and growth trajectory**  
 (% of respondents reporting non-use, multiple responses possible)

|  | All  | Agric.                  | Manuf.                  | Serv.                   | Micro                   | Small                   | Medium                 | Decline                 | Stable                  | Medium growth           | Fast growth             |
|--|------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| External advice not needed                                     | 23.7 | <b>25.5<sup>b</sup></b> | <b>16.1<sup>b</sup></b> | <b>29.6<sup>b</sup></b> | 25.5                    | 18.4                    | 23.3                   | 19.1                    | 26.5                    | 24.7                    | 14.8                    |
| High cost of service fee                                       | 23.3 | <b>19.6<sup>b</sup></b> | <b>31.0<sup>b</sup></b> | <b>18.4<sup>b</sup></b> | <b>25.5<sup>c</sup></b> | <b>26.5<sup>c</sup></b> | <b>6.7<sup>c</sup></b> | <b>19.1<sup>b</sup></b> | <b>20.4<sup>b</sup></b> | <b>33.0<sup>b</sup></b> | <b>11.1<sup>b</sup></b> |
| Support not relevant to our needs                              | 19.1 | <b>9.8<sup>b</sup></b>  | <b>20.7<sup>b</sup></b> | <b>22.4<sup>b</sup></b> | 19.7                    | 14.3                    | 23.3                   | 17.0                    | 16.3                    | 20.6                    | 18.5                    |
| Unaware about the existence of their external support services | 39.0 | <b>43.1<sup>b</sup></b> | <b>46.0<sup>b</sup></b> | <b>30.6<sup>b</sup></b> | 39.5                    | 36.7                    | 40.0                   | 36.2                    | 42.9                    | 36.1                    | 44.4                    |
| Support services not located in our area of operation          | 24.2 | 21.6                    | 25.3                    | 24.5                    | 26.1                    | 18.4                    | 23.3                   | 23.4                    | 26.5                    | 24.7                    | 14.8                    |
| Time constraint – too busy to seek external support            | 20.3 | 15.7                    | 18.4                    | 24.5                    | 19.7                    | 24.5                    | 16.7                   | <b>17.0<sup>b</sup></b> | <b>20.4<sup>b</sup></b> | <b>20.6<sup>b</sup></b> | <b>22.2<sup>b</sup></b> |
| Others   | 13.6 | 19.6                    | 13.8                    | 10.3                    | 11.5                    | 16.3                    | 20.0                   | 14.9                    | 10.2                    | 11.3                    | 23.1                    |
| N  | 236  | 51                      | 87                      | 98                      | 157                     | 49                      | 30                     | 47                      | 49                      | 97                      | 27                      |

**Table 3: Reasons for non-use of NBSSI and Empretec services by business location, family business, R&D and training**  
(% of respondents reporting non-use, multiple responses possible)

|  | Conurbation             | Large town              | Small town              | Non-family business | Family business | No R&D                  | R&D                     | No training             | Training                |
|--|-------------------------|-------------------------|-------------------------|---------------------|-----------------|-------------------------|-------------------------|-------------------------|-------------------------|
| External advice not needed                                     | 25.0                    | 17.0                    | 27.3                    | 29.6                | 21.2            | <b>27.6<sup>a</sup></b> | <b>10.0<sup>a</sup></b> | 25.0                    | 22.7                    |
| High cost of service fee                                       | 25.0                    | 18.9                    | 23.6                    | 22.5                | 23.6            | 22.2                    | 28.0                    | <b>29.8<sup>b</sup></b> | <b>18.2<sup>b</sup></b> |
| Support not relevant to our needs                              | 19.5                    | 13.2                    | 23.6                    | 23.9                | 17.0            | 20.5                    | 12.0                    | <b>26.0<sup>b</sup></b> | <b>13.6<sup>b</sup></b> |
| Unaware about the existence of their external support services | <b>31.3<sup>b</sup></b> | <b>45.3<sup>b</sup></b> | <b>50.9<sup>b</sup></b> | 38.0                | 39.4            | 36.8                    | 48.0                    | 34.6                    | 42.4                    |
| Support services not located in our area of operation          | <b>17.2<sup>a</sup></b> | <b>11.3<sup>a</sup></b> | <b>52.7<sup>a</sup></b> | 26.8                | 23.0            | <b>21.6<sup>a</sup></b> | <b>34.0<sup>a</sup></b> | 24.0                    | 24.2                    |
| Time constraint – too busy to seek external support            | 21.9                    | 17.0                    | 20.0                    | 23.9                | 18.8            | 22.2                    | 14.0                    | 25.0                    | 16.7                    |
| Others   | <b>17.3<sup>c</sup></b> | <b>13.2<sup>c</sup></b> | <b>5.5</b>              | 11.3                | 14.6            | 13.0                    | 16.3                    | 13.6                    | 13.6                    |
| N  | 128                     | 53                      | 55                      | 71                  | 165             | 185                     | 50                      | 104                     | 132                     |

**Table 4: Reasons for non-use of NBSSI and Empretec services by gender, age and educational level of the owner-manager**  
(% of respondents reporting non-use, multiple responses possible)

|  | Female | Male | Age: 16-39              | Age: 40-49              | Age: 50+                | Postgraduate/<br>Professional/<br>Degree/<br>GCE 'A'<br>Level | Technical/<br>Vocational/<br>Apprenticeship | Secondary<br>School<br>Certificate/<br>GCE 'O'<br>Level | Junior<br>School<br>Certificate |
|--|--------|------|-------------------------|-------------------------|-------------------------|---|---|---|---------------------------------|
| External advice not needed                                     | 25.9   | 23.4 | <b>19.2<sup>b</sup></b> | <b>25.0<sup>b</sup></b> | <b>29.0<sup>b</sup></b> | <b>32.4<sup>b</sup></b>                                       | <b>28.9<sup>b</sup></b>                     | <b>19.0<sup>b</sup></b>                                 | <b>16.0<sup>b</sup></b>         |
| High cost of service fee                                       | 29.6   | 22.5 | 30.8                    | 13.8                    | 23.2                    | 19.1  | 33.3  | 19.0  | 23.5                            |
| Support not relevant to our needs                              | 22.2   | 18.7 | <b>19.2<sup>b</sup></b> | <b>15.0<sup>b</sup></b> | <b>24.6<sup>b</sup></b> | 23.5  | 22.2  | 11.9  | 17.3                            |
| Unaware about the existence of their external support services | 33.3   | 39.7 | <b>35.9<sup>b</sup></b> | <b>36.3<sup>b</sup></b> | <b>42.0<sup>b</sup></b> | <b>20.6<sup>a</sup></b>                                       | <b>42.2<sup>a</sup></b>                     | <b>33.3<sup>a</sup></b>                                 | <b>55.6<sup>a</sup></b>         |
| Support services not located in our area of operation          | 29.6   | 23.4 | <b>21.8<sup>b</sup></b> | <b>20.0<sup>b</sup></b> | <b>30.4<sup>b</sup></b> | 19.1  | 28.9  | 23.8  | 25.9                            |
| Time constraint – too busy to seek external support            | 14.8   | 21.1 | 23.1                    | 15.0                    | 21.7                    | 20.6  | 17.8  | 21.4  | 21.0                            |
| Others   | 11.5   | 13.9 | 13.0                    | 17.5                    | 11.6                    | <b>13.4<sup>c</sup></b>                                       | <b>13.3<sup>c</sup></b>                     | <b>26.2<sup>c</sup></b>                                 | <b>13.6<sup>c</sup></b>         |
| N  | 27     | 209  | 78                      | 80                      | 69                      | 68  | 45  | 42  | 81                              |

<sup>a</sup> Significant at 1% level, <sup>b</sup> Significant at 5%, and <sup>c</sup> Significant at 10%.

**Table 5: Estimates of a logit model of the expectation of not wanting business advice from NBSSI**

(estimates given by reason provided)

|                                       | External advice not needed                  | High cost of service fee                    | Support not relevant to our needs           | Unaware of services                         | Services not located in their area          | Time constraint                            |
|---------------------------------------|---|---|---|---|---|--|
| Growth                                | 0.003<br>(0.009)                            | -0.001<br>(0.009)                           | 0.004<br>(0.010)                            | -0.009<br>(0.008)                           | -0.015<br>(0.011)                           | <b>0.015<sup>a</sup></b><br><b>(0.009)</b> |
| Manufacturing                         | -0.425<br>(0.500)                           | 0.518<br>(0.485)                            | 0.938<br>(0.598)                            | -0.101<br>(0.430)                           | 0.836<br>(0.559)                            | 0.110<br>(0.525)                           |
| Services                              | 0.263<br>(0.466)                            | -0.133<br>(0.507)                           | 0.978<br>(0.596)                            | -0.446<br>(0.427)                           | 0.890<br>(0.557)                            | 0.533<br>(0.505)                           |
| Size (Log)                            | -0.153<br>(0.519)                           | -0.709<br>(0.541)                           | 0.292<br>(0.590)                            | -0.039<br>(0.471)                           | -0.475<br>(0.613)                           | -0.167<br>(0.562)                          |
| Exporter                              | 0.366<br>(0.449)                            | 0.201<br>(0.465)                            | 0.725<br>(0.472)                            | -0.282<br>(0.439)                           | -0.941<br>(0.600)                           | -0.380<br>(0.535)                          |
| Innovator                             | 0.467<br>(0.423)                            | 1.019<br>(0.444)                            | <b>0.845<sup>c</sup></b><br><b>(0.492)</b>  | -0.254<br>(0.362)                           | 0.660<br>(0.454)                            | 0.314<br>(0.436)                           |
| R&D                                   | <b>-1.567<sup>a</sup></b><br><b>(0.562)</b> | 0.647<br>(0.443)                            | -0.705<br>(0.535)                           | 0.779<br>(0.405)                            | <b>1.066<sup>b</sup></b><br><b>(0.478)</b>  | -0.200<br>(0.505)                          |
| Training                              | -0.231<br>(0.380)                           | <b>-0.730<sup>c</sup></b><br><b>(0.389)</b> | <b>-0.884<sup>b</sup></b><br><b>(0.429)</b> | 0.523<br>(0.351)                            | -0.265<br>(0.431)                           | -0.501<br>(0.396)                          |
| Family Business                       | -0.500<br>(0.400)                           | 0.009<br>(0.407)                            | -0.317<br>(0.438)                           | 0.264<br>(0.374)                            | -0.306<br>(0.447)                           | -0.583<br>(0.415)                          |
| Gender                                | 0.155<br>(0.613)                            | 0.344<br>(0.627)                            | -0.559<br>(0.579)                           | 0.417<br>(0.555)                            | 0.440<br>(0.639)                            | 0.706<br>(0.694)                           |
| Age Owner-manager                     | <b>3.403<sup>b</sup></b><br><b>(1.693)</b>  | -2.568<br>(1.662)                           | <b>3.158<sup>b</sup></b><br><b>(1.363)</b>  | <b>0.183<sup>b</sup></b>                    | <b>0.996<sup>b</sup></b><br><b>(0.430)</b>  | -0.288<br>(1.654)                          |
|                                       | External advice not needed                  | High cost of service fee                    | Support not relevant to our needs           | Unaware of services                         | Services not located in their area          | Time constraint                            |
| Postgrad/Prof/ Degree/ 'A'Level       | <b>0.783<sup>b</sup></b><br><b>(0.340)</b>  | -0.462<br>(0.509)                           | -0.039<br>(0.520)                           | <b>-1.504<sup>a</sup></b><br><b>(0.469)</b> | -0.832<br>(0.571)                           | -0.261<br>(0.511)                          |
| Technical/ Vocational/ Apprenticeship | <b>0.977<sup>b</sup></b><br><b>(0.423)</b>  | 0.311<br>(0.493)                            | -0.182<br>(0.579)                           | <b>-0.784<sup>b</sup></b><br><b>(0.339)</b> | -0.174<br>(0.512)                           | -0.081<br>(0.544)                          |
| Secondary School Cert                 | <b>-0.086<sup>b</sup></b><br><b>(0.036)</b> | -0.572<br>(0.567)                           | -0.820<br>(0.666)                           | <b>-0.908<sup>b</sup></b><br><b>(0.394)</b> | -0.303<br>(0.584)                           | -0.248<br>(0.545)                          |
| Conurbation                           | -0.059<br>(0.461)                           | -0.244<br>(0.447)                           | -0.066<br>(0.496)                           | <b>-0.764<sup>b</sup></b><br><b>(0.329)</b> | <b>-2.112<sup>a</sup></b><br><b>(0.466)</b> | -0.175<br>(0.467)                          |
| Large Town                            | -0.518<br>(0.574)                           | <b>-1.033<sup>c</sup></b><br><b>(0.583)</b> | -0.583<br>(0.615)                           | -0.025<br>(0.481)                           | <b>-2.906<sup>a</sup></b><br><b>(0.670)</b> | -0.911<br>(0.606)                          |
| Constant                              | -6.707<br>(2.982)                           | 3.081<br>(0.291)                            | <b>-6.851<sup>b</sup></b><br><b>(3.273)</b> | 0.329<br>(2.520)                            | 1.486<br>(3.101)                            | -0.852<br>(2.928)                          |
| -2 Log likelihood                     | 202.177                                     | 203.869                                     | 177.381                                     | 244.063                                     | 181.928                                     | 196.950                                    |
| % correctly classified                | 76.3  | 76.8  | 81.0  | 72.5  | 81.0  | 76.3                                       |
| N                                     | 211   | 211   | 211   | 211   | 211   | 211  |

<sup>a</sup> Significant at 1% level, <sup>b</sup> Significant at 5%, and <sup>c</sup> Significant at 10%.