Implications of Access to Microcredit and Social Capital for Female Entrepreneurship in Cameroon

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Abstract

This study investigates the effects of microcredit and social capital on female entrepreneurship in Cameroon. Specifically, we (a) construct a social capital indicator for Cameroon; (b) identify individual and community characteristics that affect female entrepreneurship; and (c) compare welfare outcomes for female entrepreneurs having access to both social capital and credit with those of their counterparts who do not have such access in Cameroon. To achieve these objectives use is made of the 2007 Cameroon household consumption survey undertaken by the National institute of Statistics. The methodologies adopted for this study are the Multiple Correspondence analyses, a Logit model, and poverty and inequality dominance analyses. Results indicate that microcredit and social capital increase the probability of female entrepreneurship in Cameroon. Other variables that increase the probability of being a female entrepreneur are literacy, health, experience, proportion of active household members and access to electricity. On the other hand, variables that reduce this possibility are corruption, unemployment levels, household size, years of schooling and working in the formal sector. In addition, welfare levels among female entrepreneurs with access to both microcredit and social capital dominate that of those with neither access to social capital nor access to credit. The indication is that promoting microcredit access and networking among women would be instrumental in encouraging female entrepreneurship in Cameroon. These together with government efforts at promoting one-stop shops for business facilitation are likely to ameliorate the investment climate, encourage female entrepreneurs to increasingly venture into formal sector activities,, reduce poverty and instigate pro-poor growth.

Keywords: Microcredit, Social capital, Female Entrepreneurship and Cameroon

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1. Introduction

1.1 The concept of Entrepreneurship

Individuals have different ways of accomplishing set purposes as enunciated by teleological theories of human action (Parsons and Shils, 1962). This may explain why some people decide to undertake a business activity (entrepreneurs) and others do not (non-entrepreneurs). In this context, and according to Alvarez and Barney (2006), entrepreneurial action is perceived as any activity entrepreneurs might take—from initially identifying opportunities (McMullen and Shepherd, 2006), to assembling resources to exploit opportunities (Schumpeter, 1939), to generating and appropriating the economic profits created by exploiting opportunities (Alvarez and Barney, 2005), and to producing new products or services (Shane and Venkatraman, 2000; Shane, 2003). Whereas some authors suggest that the objective of entrepreneurs is wealth creation (Ireland et. al, 2001), in our context, wealth creation (and appropriation) can be understood as an activity that enables entrepreneurs to produce new products and services geared at satisfying expressed needs. Some authors, meanwhile, relate entrepreneurship to the functional role of entrepreneurs such as coordination, innovation, uncertainty bearing, capital supply, decision making, ownership and resource allocation (Friijs et al. 2002).

According to Murphy et. al. (2006), the *raison d'être* of entrepreneurship or entrepreneurial discovery (Shane and Venkataraman, 2000), derives from convergences of different kinds of resources (Drucker, 1985). Research in the field of entrepreneurship shows that, over the past two decades, interest has been on a wide variety of phenomena, from the psychological determinants of choices made by entrepreneurs (Busenitz and Barney, 1997) to the economic consequences that sprout from initial public offerings (McBain and Krause, 1989). However, in recent years, though slowly, several studies that go beyond the seminal insights of Knight (1921), Schumpeter (1934), and Kirzner (1973) have been undertaken. Such studies, to build up new theories, have been developed by authors like Shane and Venkataraman (2000) and Shane (2003). In this vein, we can note the Entrepreneurship theory by Shane (2003) also labelled as the "individual-opportunity nexus" approach. This approach is also known as the "Discovery Theory of Entrepreneurship" (Venkataraman, 2003). On another strand, we can identify the "Creation Theory of Entrepreneurship" by Venkatraman (2003). This theory is an alternative general theory of entrepreneurship (Baker and Nelson, 2005; Gartner, 1985).

In this study we hinge our analysis on the entrepreneurship theory of Shane (2003). The empirical implication of the discovery theory or Entrepreneurship theory of Shane (2003) regarding entrepreneurial action, associated to entrepreneurial decision making, business planning, and new venture financing can be explained as follows. According to Alvarez and Barney (2006), regarding decision making, entrepreneurs collect information ex-ante about opportunities and use this to calculate the present value of exploiting opportunities. However, cognitive biases and incremental, iterative, and inductive processes have limited value in this setting. Regarding business planning, the discovery theory assumes that the nature of opportunities may be modified, but seldom abandoned. Within this framework, numerous large changes in a business plan suggest poor planning skills, such as, the inability to collect and analyze available data. As concerns finance, it is suggested that outside sources of capital including banks and venture capital firms are preferred. Moreover, these sources of capital invest in opportunities they can understand.

1.2 The concept of Microcredit

Precisely defining microfinance is not fairly clear (Karland and Golberg, 2007). Generally, microfinance for loans (i.e., microcredit) is the provision of small scale financial services to people who lack access to traditional banking services. The term microfinance usually implies very small loans to low-income clients for self-employment, often with the simultaneous collection of small amounts of savings. Sometimes, the microfinance services include other programmes like stand-alone savings products, remittances and insurance following services offered by financial institutions for the poor. Indeed, it is no longer exclusively institutions for the poor that offer microfinance services.

In less developed counties, financial markets are deficient. In general, the poorest and most vulnerable groups of the society do suffer from access to credit (Khandker, 2001). According to a 2005 UNDP report, 80% of the world's population do not have access to financial services. This translates the importance of accessing microcredit as a means of increasing household welfare, or undertaking a local business which might contribute in increasing the revenue of poor households. For instance, the Grameen Bank experience in Bangladesh has granted microcredit to about six million individuals, and over 95% of them are women. This experience has contributed in pushing issues associated to microfinance top of the agenda when it comes to attaining the millennium development goals. Despite these observations, using microfinance to help the poor has sparked a lot of debate (Khandker, 1998, 2001).

However, by and large, several studies indicate that access to microfinance can help reduce poverty, in general, (Yunus, 1999; and Duflo et al., 2009) and among women in particular (Sikod and Baye, 2010).

1.3 An overview of Microfinance Institutions in Cameroon

An overview of microfinance situation in Cameroon reveal that, more than 50% of MFIs in Cameroon are declared and registered under the framework[2] of associations or cooperative savings and credit. They are respectively under the ambit of law n° 90/053 of 19 December 1990 on freedom of association, and n° 92/006 of 14 August 1992 relative to cooperatives and common initiative groups. Furthermore, many innovations and diversifications took place in Cameroon after the 1990s in the microfinance sector[3].

Regarding access to credit facilities in 2007, only about 9.5% of household heads applied for credit. About 55% of those who applied obtained credit at the national level. This is clear indication that very few Cameroonian households apply for credits and that very few credit applications are granted. Out of the few credit recipients in 2007, 41% are rural households as opposed to 59% in urban areas. Out of the few households who applied and were refused credit, about 37% live in rural areas and close to 63% are urban households (Government of Cameroon, 2007). In addition, out of a limited number of household heads who received microcredit in 2007, only about 25% were female household-heads. Only 5.9% of female household heads in rural areas have access to credit and out of all credit recipients in the rural areas, about 28.8% are female household heads (Government of Cameroon, 2007). The main reasons of credit refusal evoked by households in both urban and rural areas are: first, the lack of sufficient guaranties (54.9%) and second, the lack of support (22.9%).

1.4 The concept of Social Capital

The most popular definition of social capital is derived from Putman's (1993) seminal work. Putman (1993) defines social capital as features of social organizations such as trust, norms and networks that can improve the efficiency of society by facilitating coordinated actions. Chloupkovă and BjØrnskov (2002) indicate that to enable an identification of the real causes

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[2] A survey carried out by COBAC (Commission Bancaire d'Afrique Centrale) in 2000 registered 652 MFIs in Cameroon. This sector accounted for more than 300 000 costumers making about 7 % of the potential market. They mobilised savings of about 35, 9 billion CFA francs, making 6 % of total savings mobilized by the banking sector. A more recent survey carried out by the Ministry of Finance between December 2004 and April 2005 observes a total of 558 Microfinance Institutions (MFIs). In 2002, 52 % of Microfinance Institutions were implanted in urban areas against 48 % in rural areas (see Creusot, 2006).

[3] See Creusot, 2006 for a detailing of these evolutions.

and effects of certain problems, social capital can be decomposed into two elements: (1) a bonding element associated to family, close friends and professional colleagues; and (2) a bridging element associated with knowing people outside our immediate social network (Grootaert, 1998).

The recognition that social capital is an input in a household's or a nation's production function has major implications for development policy and project designs (Grooteart, 1998). While there are many definitions and interpretations of the concept of social capital, there is a growing consensus that "social capital stands for the ability of actors to secure benefits by virtue of membership in social networks or other social structures" (Portes, 1998, p. 6). Grootraet (1998) shows that taking a broader view of "other social structures" than social capital is a relevant concept at the micro, meso, and macro levels. At the macro level, social capital includes institutions such as government, the rule of law, civil and political liberties, among others. At the micro and meso levels, social capital refers to the networks and norms that govern interactions among individuals, households and communities. Such networks are often (but not necessarily) given structure through the creation of local associations or local institutions.

In the present endeavour, we focus on the microeconomic perspective. At the microeconomic level, social capital reflects networks and norms that dictate the way individuals, households and the society interact. These networks are generally structured by the creation of local associations and movements, which vary (Putman, 1993; Coleman, 1990). These associations and networks[4] constitute a vital aspect of social capital for start-ups, growing firms and women entrepreneurs, especially in developing countries, where formal social connections that are a source of information for access to micro-finance factors are absent (Olomola, 2002).

1.5 Female Entrepreneurship

Evidence points to the idea that, entrepreneurial studies have not significantly contributed to the understanding of African women and minorities involvement in wealth creation and poverty alleviation. Consequently, there is urgency to understand and to re-emphasize

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[4] Putnam's (1993; 1995) seminal analysis of civic traditions in Italy focuses primarily on "horizontal" associations in which members relate to each other on an equal basis, but Coleman (1988, 1990) has argued that social capital can include "vertical" associations as well, characterized by hierarchical relationships and unequal power distribution among members.

through entrepreneurship research how women and minorities in Africa participate in socio-economic development. According to Delmar (2003), women entrepreneurship is therefore closely related to the general framework conditions for entrepreneurship in a specific economy. However, there is substantial variation between countries. Countries with high female entrepreneurial activity rates also tend to be characterized by high total entrepreneurial activity rates (Verhuel et. al., 2006). According to Verheul et al. (2003), increasingly, female entrepreneurs are important for economic development because (a) they contribute to employment creation and economic growth through their increasing numbers and (b) they also make a contribution to the diversity of entrepreneurship in the economic growth process (Verheul and Thurik, 2001).

Furthermore, female and male entrepreneurs differ with respect to their personal and business profile, they start and run businesses in different sectors, develop different products, pursue different goals and structure their businesses in a different fashion (e.g., Fischer et al., 1993; Chaganti and Parasuraman, 1996; Verheul and Thurik, 2001; Verheul, 2003; Carter et al., 1997). This diversity in terms of products, processes, forms of organization and targeted markets is input for a selection process where customers are at liberty to choose according to their preferences, leading to a higher quality of entrepreneurship. However, despite the economic importance of female entrepreneurs, their number still lags behind that of male entrepreneurs. According to Reynolds et al. (2002), men are about twice more likely to involve in entrepreneurial activity than women.

Ekpe et al. (2010) indicate that despite the crucial role of women entrepreneurs in the economic development of their families and countries; it has, however, been found that women entrepreneurs have low business performance compared to their male counterparts (Akanji, 2006). This finding is attributable, at least in part, to factors which normally affect entrepreneurial performance. Such factors include lack of credit, saving, education or training, and social capital (Shane, 2003). In the same vein, despite the crucial role they play, women are most affected by poverty. Consequently, empowering their entrepreneurship at local levels will help the income of women to increase, ameliorate the performances of their very small activities in both the informal and formal sector as well as local development (FAO (2010)). Though poor women may benefit from microcredit, they are often the most disadvantaged group in a society, and tend to be good credit risks. Nevertheless, increasing women's access to microcredit has wide ranging benefits, not just for their well-being but

also for the welfare of their families, the communities in which they live and for society at large (UNDP, Malaysia, 2008). Therefore microfinance and microenterprises are important vectors that can help the vulnerable groups of the society like poor individuals and unskilled women to participate in economic activities and thus empower themselves.

When faced with such difficulties associated to microcredit, women entrepreneurs usually turn towards local associations and movements, which constitute social capital. By the same token, microcredit helps female entrepreneurs consolidate or constitute social capital. These stocks of social capital may represent one of the main determinants of female entrepreneurship in a country like Cameroon. This is because the socio-cultural setting, especially in rural areas, is largely related to the stock of social capital.

Despite the importance of access to credit and social capital for female entrepreneurship, in accordance with Verheul and Thurik (2003), other determinants of female entrepreneurship include technological development, economic factors, and demographic, institutional and cultural factors. These factors influence either the demand for (female) entrepreneurship, through the number and type of entrepreneurial opportunities available, or the supply of (female) entrepreneurship, through preferences and capabilities of women to become self-employed (Verheul et al., 2002). In this study, we consider as an entrepreneur two groups of individual, the nascent entrepreneurs and owner-managers of new firms. Regarding the former, an individual is considered a 'nascent entrepreneur' under three conditions. First, an individual has taken action to create a new business in the past year. Second, the individual expects to share ownership of the new firm and, third, the firm has not yet paid salaries and wages for more than 3 months (Verhuel et al., 2006).

A manifestation of the precarious nature of poverty in Cameroon has been the rise in the number of women undertaking very small trading activities in the informal sector (NIS, 2004; 2008). These activities are generally carried out to buffer household consumption and revenue, usually, in cases where their husbands do not carry out income generating activities (Epo et. al., 2011). Regarding female entrepreneurship in Cameroon, a substantial number of women, about 70%, carry out petty trading activities in the informal sector. These women generally trade local perishable food crops on the periphery of the market. This type of activity increased between 2001 and 2007, indirectly helping to consolidate fragile household incomes (and expenditures) because the number of active household member's increased and overall household income also increased. The figures for gender disparity reveal that

Cameroon has been very slow to move forward the agenda of women's empowerment. It is thus very important to understand inequality and poverty along with how they relate to gender disparity and discrimination in order to effectively influence policy orientations.

Based on these observations, we can argue that the Cameroonian woman has an enterprising spirit. However, access to microcredit among other factors like education, poor management skills, poor social capital, health, bureaucracy, household factors (household size, age, marital status) and area of residence affect the dynamics of grass root female entrepreneurship in less developed countries like Cameroon. In a similar manner, these women face a lot of difficulties in accessing microcredit than their male counterparts. Likewise, given certain societal and cultural constraints, women may by and large, tend to have weaker social capital that can be transformed in viable assets that can be used to foster entrepreneurship. In Cameroon, for instance, fewer women compared to men own land because of certain socio-economic and cultural constraints, particularly, subordination of women within marriages and inadequate economic power to pay land market prices. In addition, ownership to land inherited by widows is frequently challenged and encroached upon by men in many regions in Cameroon (Baye, 2010). This observation is important because land is an important collateral asset when we want to access credit. Having discussed issues on entrepreneurship, social capital and credit, in the following section we state the research problem, questions and objectives.

1.6 Statement of the Problem, Research Questions and Research Objectives

Ozigbo and Ezeaku (2009) indicate that on the African context, there are very few studies on women entrepreneurs largely due to the lack of indigenous research studies, lack of information, due to limitation in contextual African methodologies, lack of relevant and up-to date and inappropriate instruments (Gelb, 2001). Therefore, it is understood that African societies have had indigenous entrepreneurs but contemporary African entrepreneurship has failed to be a catalyst for socioeconomic development (Starcher, 2003). African women entrepreneurs follow a path that is in most cases different from entrepreneurial activities in the developed countries. In Africa, entrepreneurial activities are gendered in terms of access, control and remuneration (UNIDO, 2004; World Bank, 2005). Studies have shown that the experience of women in business is different from those of men and that there is profound gender differences in both women experiences of business ownership and the performance of women owned enterprises (Starcher, 2003). In many African countries, women still do not

have equal economic rights and access to resources as men. Under these conditions, women are unable to take full advantage of the economic opportunities presented by transition.

Research endeavours that cover women's access to microcredit at local micro, very small and even medium size enterprise levels in Cameroon are rare. Moreover, attempting to relate how social capital constitutes an important input to women entrepreneurship is still embryonic or lacking in Cameroon. Furthermore, how women regroup themselves into associations or share information and management techniques will help increase women entrepreneurship in Cameroon. In this context, it is important to investigate how adhesion to the different associations is established, the degree of participation in these associations and how they relate to social capital, microcredit and entrepreneurship. Since data on these aspects are scares, trying to disentangle this relationship is value added to both the policy and research spheres in Cameroon. Women have an important role in Cameroon and constitute the majority of local entrepreneurs carrying out very small trading activities in the informal sector. Therefore, being able to identify characteristics and relationships that affect female entrepreneurship in Cameroon is important.

In this regard, and building on Goheer (2003), we argue that adequately accessing microcredit and harnessing social capital that are suitable for women, as well as the provision of nonfinancial services, would help women grow and professionalize their businesses into more competitive ventures. In the case of a developing country like Cameroon, this is especially important not only for women's empowerment in general, but also for increasing female employment in the formal private sector, where participation within this specific socio-economic group is less than 3%, on average, and more acute in rural than urban areas (NIS, 2008). Consequently, poverty may decrease and pro-poor growth consolidated if female entrepreneurship is encouraged. Likewise, encouraging female entrepreneurship may help increase the middle class firms (SMEs) in Cameroon by developing female enterprises and helping some migrate from informal settings to more formal settings.

This study is underpinned by the Entrepreneurship Theory of Shane (2003). The theory consists of opportunity discovery, evaluation of the opportunity and the decision to exploit the opportunity. Furthermore, issues like self-employment, business operation and performance also constitute key aspects of this theory. The theory highlights four operational measures of performance which are survival, growth, profitability/income, and experiencing initial public offering. Basing ourselves on this theory, a key research question arises: What

are the effects of access to microcredit and social capital on female entrepreneurship in Cameroon? The specific research questions are: (a) what is the nature of social capital in Cameroon? (b) Which individual and community variables also affect female entrepreneurship in Cameroun? (c) Will increasing access to microcredit and social capital or enhancing how microcredit and social capital are redistributed help increase welfare among female entrepreneurs in Cameroon? And (d) which policies can be suggested from this study?

In an attempt to answer the questions indicated above, the main objective of this study is to assess the effects of microcredit and social capital on female entrepreneurship in Cameroon. Specific objectives of the study are: (a) to construct a social capital indicator for Cameroon using the 2007 Cameroon household consumption survey; (b) to identify individual and community characteristics that affect female entrepreneurship overall and by location; (c) to investigate welfare outcomes for female entrepreneurs having both access to social capital and credit against those entrepreneurs who do not have access to social capital and credit in Cameroon; and (d) to formulate policies on the basis of findings emanating from this study.

These research questions and objectives are guided by two hypotheses: holding other things constant, (1) social capital enhances the likelihood of female entrepreneurship in Cameroun; and (2) access to microcredit including savings would improve the probability of female entrepreneurship in Cameroun. . In the next section we discuss the Entrepreneurship or Discovery Theory of Shane (2003).

1.7 A conceptual Analysis of the Entrepreneurship Theory of Shane (2003)

The discovery theory posits that the goal of entrepreneurs is to produce new products or services (Shane and Venkatraman, 2000; Shane, 2003) taking into account opportunity discovery, evaluation of the opportunity and the decision to exploit the opportunity. An opportunity exists whenever competitive imperfections in an industry or market exist (Barney, 1986; Kirzner, 1997; Porter, 1980). Also, competitive imperfections, which are exogenous, are assumed to sprout from changes in technology, politics and regulation, demographics, consumer preferences, or some other attributes of the context within which an industry or market exists (Kirzner, 1973) and may disrupt the competitive equilibrium that existed in a market or industry (Shane, 2003). Since the entrepreneur seeks to identify and exploit the best existing opportunities whenever they arise (Levinthal, 1997), considering

both its direction and duration, the entrepreneurs only become proactive when they begin to exploit an opportunity by bringing "agency to opportunity" (Shane, 2003).

Given that these opportunities exist and can be perceived by entrepreneurs and non-entrepreneurs, the decision to evaluate the realisation of such an opportunity depends on the difference that exist between those willing to exploit this opportunity and those not willing to exploit the opportunity. Shane (2003) cites life experiences (Hayek, 1945), a person's position in a social network (Aldridge and Zimmer, 1986), the nature of the search process a person engages in (Gilad et. al., 1989), absorptive capacity of individual's (Cohen and Levinthal, 1990), intelligence (De Wit and Van Winden, 1989), and cognitive attributes (Busenitz and Barney, 1997) as some of the attributes that dictate why differences exist between entrepreneurs and non-entrepreneurs. Consequently, armed with this information, potential entrepreneurs can apply traditional risk-based decision-making tools, including discounted present value techniques (Brealey and Myers, 1988), real options analysis (Kogut, 1991) and scenario analysis (Schoemaker, 1995) to make decisions about whether or not to exploit an opportunity. These tools all assume that potential entrepreneurs understand their opportunity costs, i.e., the value of the opportunities they forgo by exploiting one opportunity over another (Milgrom and Roberts, 1992). This, of course, is the definition of a risky decision making context (Triola, 2003; Alvarez and Barney, 2005) that is applied in the context of evaluating opportunities present.

Once the opportunity is evaluated, the potential entrepreneur decides on the possibility to exploit it or not, depending on opportunity costs associated with exploiting that particular opportunity. The difference among entrepreneurs to exploit depends on a series of factors. They can be psychological, that is personal characteristics like extraversion (Wooten et al., 1999), need for achievement (Begley and Boyd, 1986), risk taking propensity (Caird, 1991), self-efficacy (Baron and Markman, 1999), and so forth, and cognitive characteristics like over-confidence (Busenitz and Barney, 1997), a willingness to generalize from small samples (Busenitz and Barney, 1997), and intuitiveness (Allison et. al., 2000). These factors can also be non-psychological like age and gender (Long, 1982), career experiences (Shane and Khurana, 2001), and the opportunity costs associated with exploiting an opportunity (Kanbur, 1980). After briefly presenting the discovery theory by Shane (2003), in the next section we review the literature.

2. Review of Literature

Following Verheul and Thurik (2003), literature on female entrepreneurship can be regrouped into three strands. The first strand argues that because entrepreneurship of women and men is different, there may be different factors explaining their prevalence rates. This is acknowledged by Delmar and Davidsson (2000) who find that the factors explaining the nascent entrepreneurship rate of men have limited value in explaining the nascent entrepreneur status of women. In addition, investigating differences in the reasons for firm start-up across country and gender, Shane et al. (1991) find that it is difficult to identify start-up reasons that equally apply to both genders and across countries. Also Verhuel et al. (2006) discovers that for factors like unemployment and life satisfaction, there exist differential impacts on female and male entrepreneurship. They also show that the factors influencing the number of female entrepreneurs may be different from those influencing the share of female entrepreneurs.

A second strand of literature associated to female entrepreneurship is investigations associated to female participation in the labour force. This rate of participation has witnessed some increase over the past decades (OECD, 2002). Since the share of female entrepreneurs in total entrepreneurial activity still lags behind the labour force participation rate of women, it is important also to pay attention to the specific literature on female entrepreneurship. There may be specific gender-related barriers to starting and running a business; and/or women may prefer to be wage-employed rather than self-employed. Hence, women may have specific entrepreneurial capabilities and preferences as compared to their male counterparts.

The third strand on female entrepreneurship consists of studies at the micro level, focusing on the distinctive characteristics of the female entrepreneur (e.g., motivations, personality traits, experience) or the features of the business (e.g., size, goals and strategy, management, performance). Other studies include environmental characteristics, such as financial constraints or other challenges women face in the start-up or development of their businesses. Despite these advancements in literature, Verheul and Thurik (2003) note that, with the exception of Reynolds et al. (2002) and Kovalainen et al. (2002), few studies have attempted to investigated the influence of factors that affect female entrepreneurship performance at a global level.

Going through literature developed elsewhere, the indication is that overall, adequate credit relates positively to entrepreneurship performance (Ojo, 2009; Roslan and Mohd, 2009; Salman, 2009; Tazul, 2007; Peter, 2001). Effects of access to credit on female entrepreneurs, perceived as improving income, output, investment, employment and welfare of the entrepreneurs are explored by Ekpe et al., 2010; Lakwo, 2007; Kuzilwa, 2005; and Peter, 2001, among others. Credit is positively related to business performance of entrepreneurs in Kenya (Peter, 2001), income and wellbeing of women in Uganda (Lakwo, 2007). Credit and training have a positive impact on women entrepreneur's performance in Tanzania (Kuzilwa, 2005). By the same token, savings acts as insurance for credit since women entrepreneurs lack physical collaterals (Akanji, 2006; Mkpado and Arene, 2007). Savings has been found to have positive effect on enterprise productivity in Nigeria (Ojo, 2009). More still, savings and credit were also found to have positive effect on women entrepreneurs' wellbeing in Bangladesh, Indonesia, Ghana and Mexico (Vonderlack and Schreiner, 2001). Equally suggested by literature is the view that credit and training should go together, however little the training may be (Ibru, 2009; Kuzilwa, 2005).

Accessing microfinance and female entrepreneurship has been researched in the literature. For instance, the Australian Government Overseas Aid programme (AusAID) 2008 report (29, 30 and 31) on microfinance indicates that when women from the Solomon Islands in the Province of Maliata received loans that were well managed, their benefits are large. These benefits include opening new market stalls and buying some business inputs. This therefore shows how access to microfinance relates positively to entrepreneurship and that once women are given resources they jump at the chance to realise their economic potential. Still on this front, the UNDP, Malaysia, 2008 report on nurturing women entrepreneurs in Malaysia, indicates that international evidence has shown the tremendous entrepreneurial potential that access to finance can unleash in poor communities. This remark is even more pertinent when we focus on vulnerable groups like women. They conclude that these women who have benefited from microcredit loans, and gained confidence to expand their markets and connect with other entrepreneurs and suppliers, will by and large increase the welfare of these women and their households.

Still on access to microfinance and female entrepreneurship, Niethammer et. al. (2007) finds greater benefits of access to finance for women in Pakistan. However, women entrepreneurs faced more difficulties in mobilizing start-up capital, credit guarantees, investment capital,

and experienced discrimination from bankers (Roomi 2005). This difficulty is also apparent in the ILO (2003) survey carried out in Tanzania, which showed that over 60% of women used their private savings as start-up capital for their enterprises, with only 4 percent accessing formal credit sources. As their businesses grew, 78 percent depended even more on their own savings, 25 percent on micro-finance credit, 10.2 percent on bank credit and 1.6% on money from their spouses. Family and friends, who can be assimilated to social network accounted for 12.5%. Even when, these women access credit, in some cases the micro loan ceiling was too low to be of much value.

Literature on the effect of social capital on entrepreneurship (or enterprises) by some studies reveal the following. For centuries, sociologists have identified that norms and social networks affect economic and social interactions of individuals. Such remarks provoked economists to try to quantify and capture social capital and how this affects economic opportunities. Growing attention is given to the role of "social capital" in affecting the well-being of households and the level of development of communities and nations. Consensus that can be established is that there exist a significant and positive relationship between social indicators and economic growth. More precisely, studies indicate that social capital impacts economic growth *per se* (Knack and Keefer, 1997; Zak and Knack, 2001) and also making economies less vulnerable to shocks (Rodick, 1999; Woolcock, 1999 and Chloupková and BjØrnskov, 2002).

Social capital enables organizational know-how and the adaptation of enterprises to their environment, permitting these enterprises to internationalize themselves via Knowledge sharing and exchange that will grant them the possibility of accessing markets and/or business partners. It can enable the identification of ideas and opportunities, acquisition of capacities, resources and information (Podolny et Page, 1998) as well as the establishment of some form of legitimacy towards other business partners (Aldrich et Fiol, 1994). In addition, these capacities may be developed through networks (Hoang et Antoncic, 2006) or social capital (Adler et Kwon, 2002). Concerning social capital at macro levels, there is overwhelming evidence that such macro level social capital has a measurable impact on national economic performance (Knack, 1999).

Empirical evidence of social network capital effects in Africa entrepreneurship suggests a positive impact on economic outcomes (Fafchamps and Minten, 1999). Using data on agricultural traders in Madagascar, they show that social network capital has a large effect on

firm productivity and better connected traders have significantly larger sales and value added than less connected traders after controlling for physical and human inputs as well as for entrepreneur characteristics.

On other factors like networking, Van Bastelaer (1999) finds out that social capital like self re-enforcing behaviour that mutually check members of the same association is an asset to farmers. Moreover, information gathered and shared among networks can entail significant gains for individuals and communities. These gains can arise for example from better factor utilisation (Weijland, 1999; grosh and Somolekae, 1999) enabling firms to share orders and marketing in an otherwise competitive business environment (Bazan and Schmitz, 1997), accessing foreign companies and markets (Bebbington, 1997) and improving the management of common pool resources (Anderson et. al., 2000). Concurring with this view, Chloupkovă and BjØrnskov (2002) identify that in transition countries like the Czech society, special needs such as updating know-how, better information sharing, access to credit and capital, and accessing foreign markets can be met by being aware and relying on the existing social capital.

Regarding literature on social capital and female entrepreneurship, Olomola (2002) indicates that women entrepreneurs, especially in developing countries, lacked social connections that are a source of credit and market information. Notwithstanding, social capital has been found to have positive impact on the performance of women entrepreneurs (Lawal et al., 2009; Mkpado and Arene, 2007; Olomola, 2002). Social capital may also dictate opportunities for investment by entrepreneurs and therefore boost performances (Allen et al., 2008). Social capital provides opportunity for women entrepreneurs to network so as to access information and resources for business (Tata and Prasad, 2008).

The Women's Entrepreneurship report (2010) summarizes most findings in the literature and identify that the following areas could be targeted to help female entrepreneurship: (a) training for female entrepreneurship, (b) improving access to finance for women entrepreneurs; (c) consolidating national network of women entrepreneurs and (d) establishing of a virtual women's government for greater accountability and identify mechanisms to lobby the government and other relevant bodies to implement the recommendations.

An overview of literature on female entrepreneurship in Cameroon indicates two clear distinctions. First, whereas there is some literature on access to microfinance and female entrepreneurship, studies that try to evaluate the effects of social capital are absent. Secondly, although there exist studies on access to microcredit and well-being in Cameroon (Kobou et al., 2010; Sikod and Baye, 2010), there is virtually no study that attempts to investigate the effects of microcredit on female entrepreneurship, nor the effects of social capital on female entrepreneurship. To the best of our knowledge, there exists no study that attempts to investigate the relationship between access to microcredit and female entrepreneurship. To fill this gap, we do not only attempt to capture the effect of credit on female entrepreneurship, but we associate microcredit and social capital and evaluate how they relate to female entrepreneurship in Cameroon. The next section presents the methodology and also outlines data used for this study.

3. Methodology and Data used for the study

3.1 Methodology

The methodology used in this study is a combination of three frameworks of analysis, each targeting specific objectives. First, we use the multiple correspondence analysis (MCA) approach to construct a synthetic indicator for social capital. Second we adopt a Logit regression framework to identify determinants of female entrepreneurship in Cameroon, focusing on access to credit and social capital. Third, we use standard welfare indices and dominance analysis to study welfare outcomes such as poverty and inequality among female entrepreneurs in Cameroon.

A) *Constructing a Social capital Indicator: The Multiple Correspondence Analyses Approach*

The framework used to construct the social capital indicator is inspired from Asselin (2005), and Epo and Baye (2011). The Multiple Correspondent Analyses (MCA) is obtained by using the standard Correspondence Analysis on an indicator matrix. Adopting the MCA technique requires that (a) we define a unique numerical indicator, C, as a composite of k-primary indicators which are computable for each unit of the population and (b) we specify the MCA process proper. To address the first requirement, let a population E of N-population units E_i be considered. We can describe an indicator by a set of k-primary indicators or variables, I_k, we want to measure with $k > 1$. Defining a composite welfare indicator, C, takes the value C_i

(I_{ik}, k=1) for a given element of the population unit, E_i, we proceed by either the data reduction technique or the principle component analysis (PCA) technique. Consequently, for the population unit E_i, C can be expressed as:

$$C_i = \sum_{k=1}^{K} W^{i,k} I_i^{*k}$$ (1)

where I_i^{*k} are the standardized primary indicators, $W^{i,k}$ the factor scores or coefficients.

Having defined the composite welfare indicator, we next specify the Multiple Correspondence Analyses process. In this regard, let's assume that there exist K-primary indicators (I_k) with J categories that are ordinal (J_k). The total number of categories is $J = \sum_{k=1}^{K} J_k$. Associating to each primary indicator I_k the set of J_k binary variables, corresponding each to a category of the indicator, let's introduce the following notions, $X(N, J)$ the matrix of N observation on the K indicators decomposed into J_k variables. X is an indicator matrix. N_j : the absolute frequency of category j. This is the sum of the column j of the indictor matrix. $N^{\cdot}$: the sum of elements of the indicator matrix. $f_j = \dfrac{N_j}{N^{\cdot}}$: the relative frequency of category j. $f_j^i = X(i,j) \Big/ X(i)$: the conditional frequency of the indicator j, knowing the population unit, i. $X(i)$ is the sum of line, i, in the indicator matrix. The set $f_j^i = \{f_j^i, j = 1, J\}$ is named the profile of observation i.

Asselin (2005) identified the properties of marginalization bias and reciprocal bi-addivity or duality, as key in defining adequate welfare indicators. Regarding the first property, the MCA overweights the smaller categories within each primary indicator. This is important because such a scenario translates societal prioritization in resolving these issues associated to the constructed composite indicator. These weights can be expressed as:

$$W_{j_k}^{\alpha,k} = \frac{N}{N_{j_k}^k} \mathrm{cov}\left(F_\alpha^*, I_{j_k}^k\right)$$ (2)

where $W_{j_k}^{\alpha,k}$ is the score of category j_k on the non-normalized factorial axis α. $I_{j_k}^k$ is the binary variable which takes the value 1 when the population unit has the category j_k. F_α^* is

the normalized score on the factorial axis α. $N_{j_k}^{k}$ is the frequency of the category j_k of indicator k. cov is simply the covariance.

Concerning the second property, the concept of duality indicates that the MCA can be applied on the indicator matrix either to observations (row-profiles) or categories (column-profiles).

This property can be expressed as:

$$F_{\alpha}^{i} = \frac{\sum_{k=1}^{K} \sum_{j_k=1}^{J_k} \frac{W_{j_k}^{\alpha,k}}{\lambda_{\alpha}} I_{i,j_k}^{k}}{K} \tag{3}$$

Where, K is the number of categorical indicators, j_k is the number of categories for indicator k. $W_{j_k}^{\alpha,k}$, the score of category j_k on the non-normalized factorial axis α. I_{i,j_k}^{k} the binary variable taking the value 1 when the unit i has the category j_k. F_{α}^{i} the score (non-normalized) of observation i on the factorial axis α. The above expression is for the row-profile of observation i. Reciprocally, the score of a category (column-profile) can be expressed as:

$$W_{j_k}^{\alpha,k} = \frac{\sum_{i=1}^{N_{j_k}} \frac{F_{\alpha}^{i}}{\lambda_{\alpha}}}{N_{j_k}^{k}} \tag{4}$$

This condition is important because when the considered axis meets consistency (first factorial axis) (see Asselin, 2005), we can consider this axis as the composite indicator- $C_i = F_1^i$. The basic idea here is that this axis most inform on the behaviour of the different modalities (indicators) used to undertake this analysis. This relationship can be split into scores of a population unit and weight of a given category of the population units belonging to the corresponding category.

B) *Determinants of Female entrepreneurship in Cameroon: A Logit regression framework*

We assume that the probability of being a local female entrepreneur is determined by an underlying response variable that captures the economic activity undertaken by an individual. In the case of a binary variable (i.e. being a female entrepreneur or not), let the underlying response variable y^*, be defined by the regression relationship:

$$y_i^* = \sum X_i^{'}\beta + u_i \tag{5}$$

where $\beta' = \{\beta_0, \beta_1, \beta_2, ..., \beta_k\}$ and $X_i' = \{1, x_{i,1}, x_{i,2}, ..., x_{i,k}\}$. The betas translate the estimated coefficients and X's the covariates of interest (access to credit, social capital, level of education, health status, age, locality, among others). Let the observable dummy variable, y, which represents the unobserved latten variable, y^*, be expressed by:

$$y = 1 \ if \ y^* > 0, and \ y = 0 \ otherwise \tag{6}$$

From equation (5) and (6) we can derive the following expression:

$$\begin{aligned} \Pr ob(y_i = 1) &= \Pr ob\left(u_i > -\sum X_i' \beta\right) \\ &= 1 - F\left(-\sum X_i' \beta\right) \end{aligned} \tag{7}$$

where F is the cumulative distribution function for u_i, and

$$Prob(y_i = 0/\beta, X_i) = F\left(-\sum X_i' \beta\right).$$

The observed values of y are the realization of the binomial outcome with probabilities given in (7), which vary with X_i. Thus the likelihood function can be given by:

$$L = \prod_{y_i = 0}\left[F\left(-\sum X_i' \beta\right)\right]\prod_{y_i = 1}\left[1 - F\left(-\sum X_i' \beta\right)\right] \tag{8a}$$

which can be written as:

$$L = \prod_{y_i = 1}\left[F\left(-\sum X_i' \beta\right)\right]^{1 - y_i}\left[1 - F\left(-\sum X_i' \beta\right)\right]^{y_i} \tag{8b}.$$

The functional form imposed on F in equation (8)[5] depends on the assumptions made about u_i in equation (5)[6]. Maddala (1983) remarks that the cumulative normal and logistic distributions are almost similar, thus using one or the other will basically lead to the same results. Moreover, according to Amemiya (1981), it is possible to derive the would-be

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[5] The log likelihood function for expressions (8a) and (8b) can be written as:

$$\ell(\beta) = \log L(\beta) = \sum_{i=0}^{n} y_i \log\left(1 - F\left(-\sum X_i' \beta\right)\right) + (1 - y_i)\log F\left(-\sum X_i' \beta\right)$$

[6] This basically forms the distinction between Logit and Probit models.

estimate of a Probit model once we have parameters derived from the Logit model. Following Alemayehu et al, (2005) we adopt a Logit model for this study.

Specifying the Logit model by assuming a logistic cumulative distribution of u_i in F, the relevant logistic expressions are:

$$1 - F\left(-\sum X_i^{'} \beta\right) = \frac{e^{\sum X_i^{'} \beta}}{1 + e^{\sum X_i^{'} \beta}} \tag{9a}$$

And

$$F\left(-\sum X_i^{'} \beta\right) = \frac{e^{-\sum X_i^{'} \beta}}{1 + e^{-\sum X_i^{'} \beta}} = \frac{1}{1 + e^{\sum X_i^{'} \beta}} \tag{9b}$$

Similar to the specification above, X_i are the characteristics that affect local female entrepreneurship in Cameroon and β_i the coefficients of the respective variables in the Logit regression. Using maximum Likelihood (ML) techniques to estimate equations (8), equation (9a) expresses the probability of being a local female entrepreneur $\left[\Pr ob\left(y_i = 1\right)\right]$ and (9b) the probability of not being a local female entrepreneur $\left[\Pr ob\left(y_i = 0\right)\right]$. Lastly, we use the robust command to correct for any potential multicolinearity.

C) Welfare comparisons among Female entrepreneurs in Cameroon

Studying welfare[7] outcomes among female entrepreneurs, we compare the poverty and inequality outcomes of two groups of female entrepreneurs - those who have access to social capital and credit versus those who do not have either access to social capital or to credit. To set the scene, we use the FGT class of poverty measures and the Gini coefficient to generate poverty and inequality outcomes for these two groups using the DASP 2.1 software developed by Araar and Duclos (2009).

To compute these levels, we adopt the following expression for poverty measurement:

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[7] Since we dealing with welfare outcomes, our measure of welfare will be household adult equivalence expenditure reported by the Third Cameroon household consumption survey.

$$\hat{P}(z,\alpha) = \frac{\sum_{i=1}^{n} w_i (z - y_i)_+^{\alpha}}{\sum_{i=1}^{n} w_i} \tag{10}$$

Where z is the poverty line, and $x_+ = \max(x,0)$, α is a policy parameter that can be varied to appropriately reflect poverty "aversion", y_i is the variable of interest for the ith household or individual, and w_i is the product of the sampling weight for the ith individual or household and the size variable.

To implement inequality comparisons among female entrepreneurs, we study inequality levels following Araar and Duclos (2009) and expressed as:

$$\hat{I} = 1 - \frac{\hat{\xi}}{\hat{\mu}}, \text{where } \hat{\xi} = \sum_{i=1}^{n} \left[\frac{(V_i)^2 - (V_{i+1})^2}{(V_i)^2} \right] y_i \text{ and } V_i = \sum_{h=i}^{n} w_h \text{ and } y_1 \geq y_2 \geq \cdots y_{n-1} \geq y_n \text{ and } \hat{\mu} = \frac{\sum_{i=1}^{n} w_i y_i}{\sum_{i=1}^{n} w_i} \tag{11}$$

Studying the benefits associated to social capital within female entrepreneur, we compare the concentration curves of the index with the Lorenz curve. If this curve lies totally above the Lorenz curve given the fact that it is more egalitarian than the total inequality then the indicator is deemed progressive and vice versa. On the other hand, if the Gini values computed for the whole distribution is superior to the given values of the concentration index for the given subgroups of interest, then the distribution is progressive. The reverse of the scenario described above indicate that the distribution is deemed non-progressive. Lastly, undertaking poverty and inequality dominance analysis (see Araar (2006)), we adopt the following expressions:

According to Araar and Duclos (2009), for poverty, distribution 1 dominates distribution 2 at order s, over the range $\left[z^-, z^+ \right]$ if and only if:

$$P_1(\zeta;\alpha) < P_2(\zeta;\alpha) \forall \zeta \in \left[z^-, z^+ \right] \text{ for } \alpha = \text{s-1} \tag{12}$$

where ζ is referred to as the "critical poverty lines". This involves comparing stochastic dominance curves at order s or FGT curves with $\alpha = $ s-1. This application estimates the points at which there is a reversal of the ranking of the curves.

For inequality, distribution 1 Lorenz-dominates distribution 2 at the second order if and only if:

$$L_1(p) \le L_2(p) \, \forall p \in [0,1] \tag{13}$$

where $L(p)$ is the Lorenz curves for each distribution and expressed as $L(p) = \mu^{-1} \int_0^p Q(q) dq$, and $Q(q)$ is the level below which we find a proportion, p, of the population we are considering and defined as $Q(q) = F^{-1}(p)$.

3.2 Data

Data used for this study is extracted from the third Cameroon household consumption survey carried out in 2007. Use is also made of data obtained from the Ministry of Small and Medium Size Enterprises, Ministry of the Family and Women Affairs, the National Institute of Statistics and some local and international organizations.

The third Cameroon household consumption survey (CHCS III) was carried out between May and July 2007; and comprised 11391 households. Its aim was to upgrade knowledge on poverty and welfare status in Cameroon by providing indicators that capture the living standards of the local population to be able to follow up efforts made towards the implementation of the PRSP and the realization of the MDG objectives. According to the National Institute of Statistics, these data can be used to (1) study all aspects of poverty at national and regional levels (monetary poverty, household poverty in terms of potentials and subjective poverty), as well as establish correlations between these different types of poverty; (2) study changes in poverty between 2001 and 2007, with the aim of evaluating the effects of macro-economic policies of the last five years on household wellbeing; (3) evaluate the demand for education and identify its principal determinants; (4) evaluate internal tourism in Cameroon and; (5) collect data on child labour in Cameroon (National Institute of Statistics, 2007; 2008).

In this research, the criterion for selection of individuals of interest to this study is reported or defined by the nature of the economic situation of the individual (See section 04 of the CHCS III questionnaire). This data is excreted from the third Cameroon household consumption survey (CHCS III). Since we define entrepreneurship as the willingness to create an enterprise or economic structure, the sub-groups working for his/her own account or being an employer are considered as the sub group of interest. However, we focus only on the female

group. The sub-sample is comprised of about 2161 female individuals who either work for own account or are employers. By the same token, in addition to the independent variables (access to credit, education, health, household size, age, locality, etc) chosen for this study, we construct a synthetic-variable for social capital (see section 12.3 of the CHCS III questionnaire).

Variables selected for the analysis include household has savings, household has financial assets, human capital characteristics like being literate, years of schooling, appreciation of health status, household size, household size squared, experience, experience squared, ratio of household size to household employee, the household head working in the formal Sector household has access to water, household has access to electricity, the household head perceives the administrations as being corrupt, the quality of the house captured by the number of rooms in household, own farmland, share of unemployment by region, access to credit and the synthetic variable for social capital constructed via the Multiple Correspondence Analyses. . In terms of geography, urban areas were chosen, excluding rural areas to avoid perfect collinearity. Furthermore, cluster means were generated for potentially endogenous variables (see statistics in Table 1). The idea here is that a given household cannot influence a societal variable (community variable), thus considering the cluster means in each primary sampling unit reduces potential endogeneity (Baye and Epo, 2009; Mwabu, 2009; Epo and Baye, 2012) since the variables because exogenous to any single household. To construct this synthetic variable for social capital we combine the following variables: belonging to an association, type of association, position in the association, motive for belonging to association, receives help from family, receives help from relations, belonging to a religious orientation and being married. These variables were also extracted from the third Cameroon household consumption survey (CHCS III).

Table 1: Descriptive statistics for variables used in the analysis for the subgroup Female Entrepreneurs

Variables	Mean	SD
Dependent variable		
Being a female entrepreneur (1=yes and 0=otherwise)	0.1601	0.3667
Other variables		
Social capital[+++]	1.1188	0.9561
Variables used to construct social capital		
Belonging to an Association (1=yes and 0=otherwise)	1.5156	0.4999
Type of Association (economic=1 and 0=noneconomic)	0.1347	0.3415
Have a position of responsibility in an Association (1=yes and 0=otherwise)	0.1054	0.3072
Principal reason for joining an Association (socioeconomic and financial=1 and 0=other reasons)	0.5240	0.4995
Receives help from family members (1=yes and 0=otherwise)	1.1271	0.3332
Receives help from relationships (1=yes and 0=otherwise)	1.2277	0.4195
Belong to a Religious Orientation (1=yes and 0=otherwise)	0.9756	0.1542
Being Married (1=yes and 0=otherwise)	0.2822	0.4502
Other Independent variables		
Household have access to credit (cluster mean)	0. 9694	0. 0551
Household has savings (cluster mean)	0.2928	0.2259
household has financial assets (cluster mean)	0.0058	0.0247
Household head is literate (1=yes and 0=otherwise)	0.4882	0.4999
Number of schooling years	4.6393	4.5112
Health status of household head (cluster mean)	1.0424	0. 0650
Household Size	5.1302	2.7284
Household Size Squared	33.759	41.007
Experience	36.146	14.273
Experience squared	1510.2	1124.7
Proportion of active household members	0.2729	0.2029
Formal Sector (cluster mean)	0.1126	0.1392
Household has access to water (cluster mean)	0. 6500	0. 3852
Household has access to electricity (cluster mean)	0. 4561	0. 4286
Appreciation of level of corruption (1=yes and 0=otherwise)	0.8398	0.3669
Number of rooms in household (cluster mean)	2.4999	1.2045
Own Farmland (cluster mean)	0.6089	0.3320
Regional level of unemployment	4.4303	4.6249
Geography		
Urban areas	0.2874	0.4526
Rural areas	0.7126	0.4526

Source: Computed by author from the Third Cameroon Household Consumption Survey (CHCS III) using STATA 10. The variable with +++ is synthetic variable obtained by the MCA approach.

4. Empirical Results

4.1 Some Descriptive Statistics

Weighted descriptive statistics for the CHCS III survey indicated that about 2.8 million women reported carrying out some form of micro-income earning activity as outlined in this study. These activities include small market trading, selling by the road side, and having a shop. Some weighted statistics identify that about 71% of these female entrepreneurs live in semi-urban and rural areas and about 30% in urban areas. Averagely, households have five members. Average number of years schooled is four. On average, about a quarter of

household members are active and/or working. Average rate of unemployment, at the regional level, for the group of entrepreneurs is 4.4. Cluster means associated to access to credit was 0.96, to savings was 0.23 and to financial assets was 0.006. To construct the synthetic variables for social capital we used the MCA method. Modalities used to construct these synthetic variables indicate that about 50% of these women join an association for financial gains and economic reasons. Average values associated to help received from friends and family revolved around 1.2. The average value for our social capital index was 1.11. The ordering of the various scores were generated and normalized to treat for the presence of negative values which may cloud the classification of attribute and interpretation of results.

4.2 Drivers of Social Capital

Table 2 indicates result showing how variables used to construct the social capital index by the multiple correspondence analyses method dictate social capital.

Table 2: Synopsis of computed Synthetic varaible for Social Capital of Female Entrepreneurs

Number of Observations: 2161; Percentage share of first axis: 28.85; Percentage share of second axis: 15.59							
	Scores		Correlation		Contributions		Total % Inertia
Variable	First	Second Axis	First Axis	Second Axis	First Axis	Second Axis	
Belonging to an Association					0.199		12.5%
Yes	1.776	0.033	0.855	0.000	0.103	0.000	0.064
No	-1.668	-0.031	0.855	0.000	0.096	0.000	0.061
Type of Association					0.080		12.5%
Economic	2.754	-0.447	0.340	0.005	0.011	0.000	0.108
No Economic	-0.429	0.070	0.340	0.005	0.069	0.001	0.017
Have a position of responsibility in an Association					0.056		12.5%
Yes	2.669	0.751	0.242	0.010	0.006	0.000	0.112
No	-0.315	-0.088	0.242	0.010	0.050	0.003	0.013
Principal reason for joining an Association					0.200		12.5%
Socio-Economic and Financial	1.644	0.098	0.858	0.002	0.105	0.000	0.060
Other reasons	-1.810	-0.108	0.858	0.002	0.095	0.000	0.065
Receives help from Family members					0.000		12.5%
Yes	0.020	-0.745	0.001	0.593	0.000	0.024	0.016
No	-0.140	5.112	0.001	0.593	0.000	0.164	0.109
Receives help from Relationships					0.000		12.5%
Yes	0.021	-1.064	0.000	0.598	0.000	0.043	0.028
No	-0.071	3.607	0.000	0.598	0.000	0.146	0.097
Belonging to a Religious Orientation					0.002		12.5%
Yes	0.026	-0.067	0.008	0.028	0.000	0.000	0.003
No	-1.031	2.685	0.008	0.028	0.002	0.009	0.122
Being Married					0.001		12.5%
Yes	-0.171	0.418	0.003	0.011	0.001	0.002	0.090
No	0.067	-0.164	0.003	0.011	0.000	0.001	0.035
TOTAL					0.538		100%

Source: Computed by author from the Third Cameroon Household Consumption Survey (CHCS III) using STATA 10.

Modalities used to construct the social capital index have ordinal orderings consistent with their contributions in the first factorial axis (Asselin and Anh, 2005). The first factorial axis accounts for about 28% of the total inertia. Results indicate that belonging to an association, type of association, position in the association, motive for belonging to association, receives help from family, receives help from relations, belonging to a religious orientation all contributed in building the social capital of female entrepreneurs in Cameroon. However, regarding the variable being married, it was rather the modality not married that contributed in accounting for social capital. This result indicates that marriage does not contribute favourably in the construction of social capital for female entrepreneurs. A potential explanation may be pointing to a possible trade-off between association membership activities and household duties for married women which decreases efforts put in place by these women in constituting their social capital. This might also be explained by the fact that a single woman is more likely to be creative in ways for making money. However, it should also be noted that the correlations are mostly strong for the variables belonging to an association and economic reasons for joining a socioeconomic/financial association. Regarding the contribution of modalities of the different variables to the first factorial axis, except for the variable - type of association, all other modalities of variables associated to the stock of social capital had higher contributions.

4.3 Determinants of Female entrepreneurship in Cameroon

Table 3 posts results identifying determinants of female entrepreneurship in Cameroon. These variables are captured at individual, household and community levels. Robust estimates that reduce potential endogeneity bias are generated. The overall model is globally significant. The predicted probability for being a female entrepreneur in Cameroon is about 0.11. This indicates that it is difficult for women in general to undertake entrepreneurial activities in Cameroon. This finding corroborates results from studies by Ekpe et al. (2010) and the ILO (2003) report. Where the former identify that women face a lot of difficulty to undertake entrepreneurial activities in Nigeria, the later agree with this observation for the case of female entrepreneurs in Kenya and Tanzania.

Determinants of female entrepreneurship identify that social capital and microcredit relate positively to the probability of being a female entrepreneur (Table 3, column 1). Both variables were significant at the 1% level. Furthermore, regarding the social capital index, a percentage increase in owning and/or accessing some stock of social capital increases the

probability of women to undertake an entrepreneurial activity by 18.2% (Annex Table 3, column 2). Social capita encompasses issues like trust, norms, and safety net mechanisms that are put in place by a given society. These findings are consistent with Giannetti and Simonov (2004) who find, for instance, that by and large, social norms influence entrepreneurial entry in Sweden. Goitom (2006) also observe that social networks play an important role in starting business activities for first generation East African migrants in Seattle, USA.

Microcredit is argued as crucial because despite these entrepreneurs having ideas and being motivated, without financial backing, they never fully develop these ideas (Lakwo, 2007). In this study we identify that microcredit, through the following canals (a) access to credit, (b) having saving and (c) having some form of financial asset, positively relate with the probability of being a female entrepreneur in Cameroon (Table 3, column 1). These three variables are significant at one percent. This indicates that accessing credit increases the probability of being a female entrepreneur by 43%. For having savings and having some financial asset the probabilities are 86.4% and 17.5% respectively (Table 3, column 2). These result points to the important role access to microcredit can play. However, the high elasticity for the variable having some saving highlight the peculiarity of female entrepreneurs in the informal sectors in an African setting. Women have very limited access to credit (NIS, 2008) and consequently, women willing to undertake some form of micro-economic activity usually rely on their savings. They tend to save money with the view of reaching a threshold good enough to undertake some form of petty trading activities. Cheston and Kuhn (2002); Akanji (2006); Brana (2008) and Iganiga (2008) also find similar results.

4.4 Other Personal, Cultural and Community Determinants of Female entrepreneurship in Cameroon

Human capital captured by education and health affects female entrepreneurship. Regarding education, whereas the probability of being a female entrepreneur increases by 11% when a woman is literate, this probability decreases by 14% when the number of years of schooling by the female entrepreneur increases. These results indicate that, whereas just being literate increases the probability of being a female entrepreneur, as these women invest in more years of schooling they tend not to undertake entrepreneurial activities because they may focus more on salaried employment. Regarding health, the probability associated to becoming a female entrepreneurship marginally increased by a percentage point (Table 3, column 1 & 2).

Other variables that related positively to female entrepreneurship were experience, proportion of active household members, access to electricity, the number of rooms and owning farmland. These variables were significant at a percentage point (Table 3, column 1 & 2). Experience, used as a proxy for age and ability to innovate positively affects the probably of female entrepreneurship. Assimilation of knowledge and the ability to efficiently manage her business structure has been identified as crucial in entrepreneurial activities (Cunha, 2007; Jill et al., 2007).

Variables that relate negatively to female entrepreneurship where household size, household size squared, experience squared, working in the formal sector, access to water, evidence of corruption and regional unemployment(Table 3, column 1 & 2). Evidence of corruption and regional unemployment reduces the probability of being a female entrepreneur by 12 and 2.5 percentage points respectively (Table 3, column 2). These two variables used as proxies for appreciation of institutions indicate that corrupt institutions hamper female entrepreneurship in Cameroon. Regarding household size, large household sizes tend to dent household saving and therefore household financial assets that could be mobilized and invested into a business ventures.

In terms of locality, the probability of being a female entrepreneur decreases by 36% when you reside in urban areas. This likely indicates that activities carried out by self-employed female entrepreneurs, who work mostly in the informal sector, are situated in semi-urban and rural areas. Consequently, since these women are phased-out in the urban areas by men carrying out petit trading activities in the informal sector, they tend to thrive in semi-urban and rural areas that act as sources of raw material to urban areas.

4.5 Welfare comparisons between female entrepreneurs with and without access to social capital and credit in Cameroon

In this section we undertake a comparative analysis of welfare of female entrepreneurs with access to both social capital and credit versus those who do not have access to social capital and credit by computing poverty and inequality levels. To compute Lorenz curves for the different groups and the inequality and poverty values we use total expenditures as a proxy for income because data on income was not available as households were reticent on reporting their income. The welfare cut-off point chosen for this study is similar to the poverty line defined by the National Institute of Statistics.

Comparing welfare outcomes for those female entrepreneurs who had access to social capital and credit against those who had neither of the two we obtain the following results (see Table, 4). Inequality among female entrepreneurs was 0.3991. However, inequality within the group of female entrepreneurs who had neither social capital nor access to credit was higher (0.4076) than those female entrepreneurs who had both access to social capital and credit (0.3885). Nevertheless, for both groups, inequality was highest between the 50th to 75th percentiles as posted in Figure 1.

Figure 1: Lorenz curves for female entrepreneurs who had some social capital and access to microcredit against those who had neither social capital nor credit
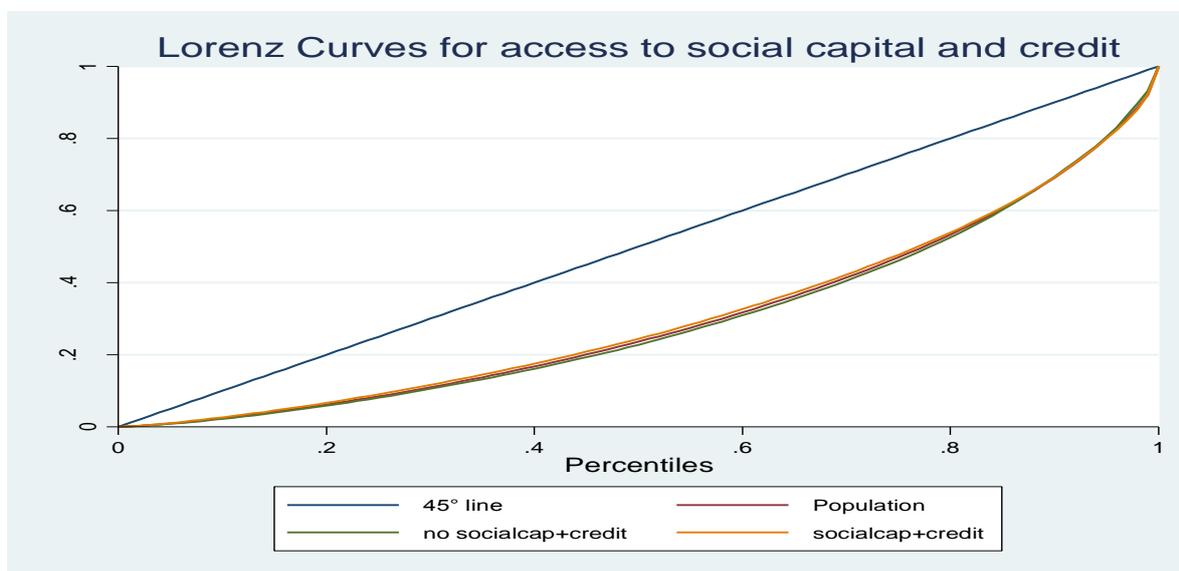
Source: computed by author using the DASP software.

A comparison of welfare levels indicate that for the incidence, depth and severity of welfare, for female entrepreneurs was 5.7, 1.5 and less than one percentage points respectively (Table 4). In addition, those female entrepreneurs who had neither some form of social capital nor accessed credit were less well-off than their corresponding counterpart.

Table 4: A comparative analysis of welfare of female entrepreneurs have access to social capital and credit versus those who do not have access to social capital and credit

Female entrepreneurs having both social capital and access to credit	Female entrepreneurs having neither social capital nor access to credit
Inequality (Gini values)	
0.3885[a]	0.4076[a]
(0.0254)	(0.0222)
Total Inequality: 0.3991[a]	
(0.0173)	
Poverty values (incidence, depth and severity of welfare)	
Incidence of Welfare	
0.0314[a]	0.0986[a]
(0.0053)	(0.0180)
Total incidence of welfare: 0.0571[a]	
(0.0085)	
Depth of Welfare	
0.0073[a]	0.0282[a]
(0.0015)	(0.0065)
Total depth of welfare: 0.0153[a]	
(0.0032)	
Severity of Welfare	
0.0029[a]	0.0120[a]
(0.0008)	(0.0031)
Total severity of welfare: 0.0064[a]	
(0.0016)	

Source: computed by author. Figures in parentheses represent standard errors. a, b and c indicate significance at the 1%, 5% and 10% levels respectively.

For the incidence of welfare, on average, the latter had three times as more less well-off than the former (9.8% against 3.1%). Concerning the depth of welfare we had 2.8% against 0.7%, respectively. Regarding the severity, we had 1.2% against 0.2%, respectively (Table 4). These results indicate that social capital and access to credit aid female entrepreneurs enhance their entrepreneurial activities and also help them have relatively higher levels of welfare than those female entrepreneurs who did not have both some social capital and access to credit, though on average this cohort of women were better-off than the rest of the women.

Furthering the analysis of welfare, we use the DASP 2.1 software (Araar and Duclos, 2009) to compute the dominance curves for inequality and poverty when female entrepreneurs have access to social capital and access to credit against female entrepreneurs who have only access to credit (see Table, 5).

Table 5: Inequality and Poverty dominance analysis for female entrepreneurs who had access to social capital and credit versus female entrepreneurs who only access to credit

Inequality Dominance Analysis		
Number of Intersections	Critical percentile	Case
1	0.963	B
2	0.981	A
3	0.997	B
4	0.997	A
Poverty Dominance Analysis		
Number of Intersections	Critical Poverty line	Case
1	7,182,054 CFA	A
2	10,909,544 CFA	B

Source: Computed by author.
Notes:
For inequality dominance analysis; (a) Case A indicates that curve 1 is below curve_2 before the intersection; and (b) Case B indicates that curve 1 is above curve 2 before the intersection.
For poverty dominance analysis: (a) Case A indicates that before, intersection, distribution 2 dominates distribution 1; and (b) Case B indicates that before this intersection, distribution 1 dominates distribution 2.

For the inequality dominance, the distribution of female entrepreneurs who had access to social capital and credit was above those who had only access to credit till the 96th percentile, dips below the later and the increased till the 98th percentile, after which they equated themselves from the 99th percentile. Concerning the poverty dominance analysis, the distribution for the adult equivalence expenditure associated to female entrepreneurs who have only access to credit dominated those female entrepreneurs who had access to social capital and access to credit till the point A. After point A, we note the reverse (that is till point B). This indicated that as female entrepreneurs who enjoy higher levels of welfare, are those who had access to social capital and credit, and they were well-off than those who only had access to credit (Table 5).

5. Conclusion

In this study, we attempted to investigate the implications of microcredit and social capital on female entrepreneurship in Cameroon. Specifically, we (a) constructed a social capital indicator; (b) identified individual and community characteristics that affect female entrepreneurship; and (c) investigated welfare outcomes for female entrepreneurs having both access to social capital and credit against those entrepreneurs who do not have access to social capital and credit in Cameroon. The methodologies adopted for this endeavour were the Multiple Correspondence Analyses, the Logit regression, and the Foster-Greer-Thorbeck poverty indices and Gini coefficient to measure poverty and inequality outcomes.

Results showed that access to microcredit and the acquisition of social capital both contribute towards increasing the probability of female entrepreneurship in Cameroon. Results from the

MCA indicate that that belonging to an association, type of association, position in the association, motive for belonging to association, receives help from family, receives help from relations, belonging to a religious orientation all contributed in building the social capital of female entrepreneurs in Cameroon.

As per determinants of drivers of female entrepreneurship we found that in addition to social capital and microcredit, education, health, experience, proportion of active household members, access to electricity, the number of rooms and owning farmland also enhanced the probability of being a female entrepreneur. On the other hand, variables that relate negatively to female entrepreneurship where household size, household size squared, experience squared, working in the formal sector, access to water, evidence of corruption, regional unemployment and residing in urban areas.

Lastly, study welfare outcomes between female entrepreneurs with access to both social capital and credit and those who do not have access to social capital and credit for poverty and inequality we noted that inequality and poverty for the former had lower than the latter. Dominance analysis corroborate the fact that female entrepreneurs who enjoy higher levels of welfare, are those who had access to social capital and credit, and they were well-off than those who only had access to credit.

This study derives its policy relevance from the 2009 Cameroon Growth and employment Strategy Paper (GESP) which indicates the important role of creating enterprises that will employ individuals and reduce unemployment for sustainable growth. The implications of our findings are that promoting networking and access to microcredit among women would be instrumental in encouraging female entrepreneurship in Cameroon. These, together with government efforts at adopting one-stop shops for business facilitation and legislation for guaranteed group-lending are likely to ameliorate the investment climate, encourage female entrepreneurs to increasingly venture into formal sector activities, reduce poverty and inequality, and provide the basis for more sustainable growth.

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Annex

Table 3: Robust Logit Estimates of Determinants of Female Entrepreneurship in Cameroon

Variables	Logit	Elasticities after Logit
	Estimated Coefs	**Ey/dx**
Independent variables		
Social capital[+++]	0.2077***	0.1829***
	(272.5)	(271.5)
Household have access to credit (cluster mean)	0.4887***	0.4305***
	(38.40)	(38.40)
Household has savings (cluster mean)	0.9811***	0.8643***
	(303.4)	(302.1)
Household has financial assets (cluster mean)	0.1983***	0.1747***
	(7.540)	(7.540)
Household head is literate (1=yes and 0=otherwise)	0.1340***	0.1181***
	(46.93)	(46.95)
Number of schooling years	-0.1631***	-0.1436***
	(-589.4)	(-581.3)
Health status of household head (cluster mean)*100	0.0188***	0.0165***
	(177.8)	(177.6)
Household Size	-0.1143***	-0.1007***
	(-76.79)	(-77.20)
Household Size Squared	-0.0035***	-0.0031***
	(-36.43)	(-36.33)
Experience	0.0786***	0.0693***
	(309.6)	(308.6)
Experience squared	-0.0009***	-0.0008***
	(-302.1)	(-301.5)
Proportion of active household members	0.9097***	0.8014***
	(164.6)	(163.2)
Formal Sector (cluster mean)	-0.6878***	-0.6059***
	(-124.7)	(-124.6)
Household has access to water (cluster mean)	-0.1856***	-0.1635***
	(-78.4)	(-78.32)
Household has access to electricity (cluster mean)*100	0.0135***	0.0119***
	(413.6)	(411.3)
Appreciation of level of corruption (1=yes and 0=otherwise)	-0.1330***	-0.1172***
	(-67.57)	(-67.54)
Number of rooms in household (cluster mean)	0.0163***	0.0144***
	(26.77)	(26.78)
Own Farmland (cluster mean)	0.0620***	0.0546***
	(15.35)	(15.35)
Regional level of unemployment	-0.0274***	-0.0242***
	(-136.1)	(-136.14)
Geography		
Urban areas	-0.4163***	-0.3668***
	(-156.8)	(-156.4)
Predicted value for probability of being a Female Entrepreneur		0.1190
Total number of observations for Female entrepreneurs	2.8 million	
Wald Test	1606357	
Probability > chi2	0.000	
Pseudo R-Squared	0.1304	

Source: Computed by authors using STATA 10. The variable with +++ is synthetic variable obtained by the MCA approach. The values in brackets are Z-scores. ***, ** and * for 1%, 5% and 10%, significance, respectively.