Social Capital and Household Welfare in Cameroon: A Multidimensional Analysis

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AERC Research Paper 238
African Economic Research Consortium, Nairobi
August 2011
THIS RESEARCH STUDY was supported by a grant from the African Economic

Research Consortium. The findings, opinions and recommendations are those of the author, however, and do not necessarily reflect the views of the Consortium, its individual members or the AERC Secretariat.

Published by: The African Economic Research Consortium
P.O. Box 62882 - City Square
Nairobi 00200, Kenya

Printed by: Modern Lithographic (K) Ltd
P.O. Box 52810 - City Square
Nairobi 00200, Kenya

ISBN 978-9966-023-10-0

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Abstract

This study uses instrumental variables (IV) to investigate the causal influence of social capital on various welfare measures. The data set consists of a cross sectional data of the 2007 Cameroon Household Survey. Social capital variables are derived by memberships in social and cultural organizations, and five other associations. We found valid instruments for social capital at the aggregate level to determine its causal effect on household poverty as measured by household per capita expenditure, and on children schooling or enrolment. At individual level, the causal effect of social capital on labour force participation is determined. Social capital is found to increase household welfare and reduce poverty as well as raise children enrolment. It was also established that social capital has a beneficial causal influence on individual labour force participation. Estimates also suggest that the impact of social capital on household income and labour force participation are underestimated when correction for omitted variables bias is not taken into account. Generally, our analysis suggests that policy makers interested in improving the living conditions of households may be advised to consider promoting social capital as one relevant ingredient to achieve the Millennium Development Goals of reducing poverty by half.

JEL classification: Z13, I32, I13, J11

Key words: Social capital, poverty, children schooling, labour force participation, endogeneity, Cameroon

Acknowledgements

I wish to extend my gratitude to the African Economic Research Consortium for the technical and financial support for the study and the secretariat for providing the necessary documentation and information. I would also like to extend gratitude to the resource persons for their valuable comments and inputs during the various review stages. I also thank the anonymous external reviewers and others for their comments on the final version of the paper. However, the views expressed in the study are mine, and I remain responsible for any errors in the paper.

1. Introduction

Context

The major economic problem in Africa and Cameroon in particular has always been its underdevelopment and poverty syndromes. This has been confirmed by various studies that have been done on various economies on the continent. The general consensus is that until these major issues of Africa's economy are addressed, the continent will remain excluded from the global economy arena. Poverty is considered an issue of global interest, with halving extreme poverty by 2015 constituting the first and perhaps the most critical goal among the Millennium Development Goals (MDGs). With 2015 less than five years away, it is becoming clear that many countries in the developing world will not be able to meet the target of halving absolute poverty. In fact, many countries in sub-Saharan Africa and several in Asia and Latin America are seriously offtrack in meeting that goal. Indeed, Africa, especially south of the Sahara, is the only region where poverty still stands relatively high in the past three decades. This is in sharp contrast with the world trend, which shows a substantial reduction in the rate of poverty. The poverty headcount ratio in the region, measured as the proportion of the population living on less than US$ 1 per day, rose slightly from 45% in 1990 to 46% in 2000 (World Bank, 2006). This headcount poverty rate barely budged in the region from its value of 42% in 1981 to 41% in 2004[1] (World Bank, 2007).

Against this scenario, this paper focuses on how investment in social capital could be regarded as a strategy to address the perceived weak economies and underdevelopment in Cameroon. There is a growing recognition that differences in economic outcomes, whether at the individual, household or at the level of the state, cannot be explained fully by differences in "traditional" inputs such as labour, land, and physical capital. 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. This paper has attempted to investigate the possible links that exist between social capital and the multi-facet nature of poverty, such as income poverty, education, and labour market outcome.[2] We provide background information on Cameroon and subsequently introduce the concept of social capital before its application in stimulating development is discussed.

Cameroon economic performance

Cameroon, a Central African country, had an estimated 18 million inhabitants with a per capita income of US$ 1,020 in 2007. Almost half of the country's population

is under 15 years. Although the share of agriculture in national output has seen major fluctuations over the past four decades, more than half of the working-age population is still engaged in various agricultural activities. Petroleum products and timber represent major shares in export earnings.

Economic growth in Cameroon has been irregular from 1960-2007. After gaining its independence in 1960, the country experienced, first, a period of modest but balanced economic growth, followed in the period 1977-1985 by more rapid growth, averaging 7% per year, and made possible mainly by increased oil revenues and international borrowing. This period was also characterized by early industrialization based on import substitution. The peace dividend of the first period, combined with favourable exchange rates and other macroeconomic policies, stimulated this growth process. In the early 1980s, per capita income stood at US$ 760, and favourable rates of domestic investment were reported. However, after 1985, deteriorating terms of trade, a sharp decline in oil output, and a major appreciation of real exchange rates exposed the structural weaknesses of the economy and triggered a profound recession. According to the World Bank, Cameroon coped with the unfavourable circumstances by reducing producer prices and public expenditure, including a 50% cut in civil service wages, but the measures did not stimulate growth. By 1993, gross domestic product had halved, and public utility services had declined markedly due to lack of investment and poor performance of state-owned firms. The government reduced basic health and education funding considerably, leading to a major decline in health delivery systems and school enrolment rates.

Economic growth was reignited with exchange rate adjustments and the reform of trade and fiscal policy in 1994. Thus, since the 50% devaluation of the national currency (the CFA Franc) in January 1994 and the concurrent upswing in the world economy, there was a slow return to growth at a rate that has accelerated in recent years to around 5% per year in real terms. However, the period 1986-2001 was not marked by impressive growth performances as GDP grew at 0.53%, characterized by a decline in GDP per capita at -2.1% per annum (Kobou et al., 2008).[3]

However, the dramatic social consequences of the economic and financial crisis, and the subsequent structural adjustment policies (SAPs) were yet to be reversed. According to the 1996 household consumption survey, 51% of households in the country were living below the poverty line, and 23% were living in extreme poverty. Unemployment and underemployment were rampant. Social services had in many instances collapsed. Poverty alleviation, however, became a major policy concern in Cameroon. Concerns about poverty were strengthened in the 1990s as social considerations were gradually appended to the objectives of the initial SAPs. The acknowledgement of this in Cameroon can be traced to when the Enhanced Structural Adjustment Facility (ESAF) (scheduled for 1997-2000) was converted to the Poverty Reduction and Growth Facility (PRGF) in 1999. Between 2000 and 2003, the Government of Cameroon formulated a Poverty Reduction Strategy Paper (PRSP), which documents guidelines for fighting poverty. This was further confirmed when the IMF and World Bank declared the eligibility of Cameroon for the enhanced HIPC initiative in May 2000, and when Cameroon subsequently reached the decision point in October 2000 and the completion point in April 2006.

Subsequent to the relative success in its macroeconomic stabilization effort, Cameroon registered an annual average growth of around 4.5% for the period 1996-2001. Over the

same period, per capita income rose annually at about 2%. There was a remarkable fall in monetary poverty between 1996 and 2001. The proportion of Cameroonians living below the poverty line (approximately US$ 1.5/day) declined from about 53.3% in 1996 to 40.2% in 2001. Unfortunately, despite the fall in levels of poverty, inequality instead rose marginally with a Gini coefficient of 0.406 in 1996 and 0.408 in 2001 (Government of Cameroon, 2003). Social conditions, however, have deteriorated considerably over the past two decades as a result of the economic and social crises, and growth has been neither durable enough nor sufficiently redistributive to reverse these trends. Consequently, by 2001, indicators of public health, education and access to basic services were still alarmingly low, and in some cases worse than they were in the 1980s (Government of Cameroon, 2003).

Cameroon started benefiting partially from debt relief in October 2000 and fully from April 2006. A good portion of the savings emanating from this initiative was intended to be used in the social sector (education, health, basic infrastructure) as enshrined in the Poverty Reduction Strategy Paper (PRSP), which was approved by the IMF and World Bank in July 2003. Government efforts were geared towards achieving higher and sustainable growth, increasing the quality of public expenditure, enhancing the effectiveness of targeted policies, and improving the overall state of governance. In this context, the government intended to significantly reduce poverty in the country in tandem with the Millennium Development Goals. During the implementation phase of the PRSP, the GDP average growth rate stood at 3.32% between 2003 and 2007. This average falls below that of 4.23% recorded during the period 2000-2002 when Cameroon was not implementing any formal programme aimed basically at alleviating poverty. Thus, with a stable macroeconomic framework and far-reaching structural and institutional reforms, real GDP growth was around 3% to 3.4% per annum during 2001-2007, and per capita GDP average annual growth rates of 0.5%-0.7% per annum - a very low rate unlikely to have any positive impact on the livelihood of households. Thus, the income poverty that witnessed a 13-point drop between 1996 and 2001 remained stable over the 2001-2007 period. In fact, the incidence of poverty, which stood at 40.2% in 2001, dropped to 39.9% in 2007. The growth rate recorded during the period did not widen inequalities; on the contrary, inequalities reduced over a long period, as was seen in the drop of the Gini index during the 1996-2007 period. In fact, this index that stood at 0.416 in 1996 dropped to 0.390 in 2007 (Government of Cameroon, 2009). With such growth trends, Cameroon is unlikely to meet the poverty reduction and social development goals fully and, as such, the number of the poor in the country is likely to increase.

Research problem

In its 1998 Human Development Report on Poverty in Cameroon, UNDP considers poverty a complex situation that generally describes the scarcity of resources and deprivation of the possibility of choice and opportunity, which would bring along decent living conditions. Thus, poverty has many facets, the most outstanding of which are poor health or low educational levels, lack of access to knowledge, impossibility of exercising civil rights, absence of dignity and self-confidence, environmental degradation, etc. Cameroonian authorities paid special attention to the Millennium Development Goals

during the PRSP implementation period. In order to assess the progress made in this regard, a national report written in 2008 gives an update on the trends of pursuance of each goal. In general, current trends suggest that it is unlikely that the country will achieve the goals set for 2015 (Government of Cameroon, 2009). Therefore, strategies for meeting the targets of the MDGs still occupy an important place in policy debates.

The fight against poverty should involve ways of increasing access to basic social services such as health and education, which are both variants of human capital to ensure growth, employment and increased labour productivity. The pioneering work on human capital investment by Schultz (1960) made a significant contribution to the literature on the links between human capital investment and economic growth, in addition to the broader subject of improving human welfare. Health is a factor that improves the quality of life and well-being of people and, thus, economists have researched the factors that influence health outcomes of a society. Education is one of the most important factors of human capital development, whereas human capital has been identified as a key determinant of growth and poverty alleviation. The effect of education on health is that education increases technical efficiency: Educated people are able to produce a better health outcome for a given use of health inputs or use fewer inputs for producing the same level of health output. Grossman (1972) and other studies have argued that education influences many decisions (such as a choice of job, ability to select a healthy diet and avoid unhealthy habits, and efficient use of medical care), which have an impact on the quality of life. Berger and Leigh (1989), Rosen and Taubman (1982: 255-71) and others have provided empirical evidence in support of this argument. Thus, better access to education often holds the key to the next generation's ability to escape from poverty.

It would be useful for policy purposes to examine the relationship between social capital and household welfare in terms of education, labour market performance and income poverty, which will in turn improve household health. With increasing evidence on the importance of social capital to economic growth and development, there are pending issues in the modelling of the effects of social capital. The estimation problems stem from two distinct sources: Simultaneous effects, in which social capital effects are overestimated because the outcomes of social capital simultaneously affect each other (i.e. possibility of reverse causality), and correlated unobservables (i.e. measurement error) in which social capital is related to unobserved factors that also affect the outcome variable (Mouw, 2006). Thus, most existing studies have not adequately dealt with the problem that social capital is endogenous. At the individual or household level, it is not completely established whether welfare is the result of social capital or whether social capital is the result of well-being in terms of increased income, and access to education and good health.

Secondly, social capital is seriously shaping the social and economic sphere of African countries. This is particularly important in the rural areas where majority of the population are poor. With the relatively high poverty levels in rural areas, the pertinent question to ask is whether social capital can improve the well-being of households in Cameroon. So far, Cameroon poverty studies have not seriously addressed these problems. Yet, the government is more aware about increasing the welfare of the population. Our concern, therefore is to fill these knowledge gaps in the social capital-welfare nexus.

Research objectives and hypotheses

The main objective of this study is to examine the effects of social capital on household welfare. In order to determine the contribution of social capital to household well-being, the study specifically examines the following objectives:

(i) Determine the link between household social capital and monetary poverty;
(ii) Estimate the relationship between household social capital education; and,
(iii) Determine whether friendship networks or household's relationship with other community residents results to increased labour force participation.

From the above objectives, the hypotheses to be tested are:

(a) Higher level of social capital, as measured by various indicators leads to increased household income, proxy to per capita expenditure.
(b) Social capital is a major factor in the improvement of access to education and hence reduced dropout rates for children.
c) An individual with high social capital is more likely to fare well in labour-market participation.

2. Concept of social capital

Although social capital has been popularized only in the past two decades following studies by Bourdieu (1986), Coleman (1988; 1990) and Putnam (1993; 1995), the concept of social capital has a long intellectual history in social sciences. The sense in which the term is used today dates back to about 100 years when Hanifan (1916) invoked the concept of social capital to explain the importance of community participation in enhancing school performance. After Hanifan's work, the idea of social capital disappeared and was reinvented by a team of Canadian urban sociologists (Seely, Sim and Loosley, 1956) within a research on urban communities' culture, by Homans (1961) for a theory of social interactions, and by Loury (1977) within a study on income distribution.

In his work on local government performance in Italy, Putnam (2000:19) introduces social capital as follows: Whereas physical capital refers to physical objects, and human capital to the properties of individuals, social capital refers to connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them. In that sense, social capital is closely related to what is called "civic virtue". According to Putnam (1993: 19), a society of many virtuous but isolated individuals is not necessarily rich in social capital. The main difference between human and social capital is that social capital calls the attention to the fact that civic virtue is most powerful when embedded in a network of reciprocal social relations. Social capital is like a filter through which human and financial capital flow from the parents and communities to the child, producing better education outcome.

There is no consensus on a precise definition of social capital. However, social capital refers to the quality of human relationship and the opportunities that emanate from them that could be of benefit to the population concerned. It is generally interpreted as the degree of trust, cooperative norms and networks and associations within a society (Coleman, 1988).[4] Putnam (1993: 167) sees social capital as "features of social organization, such as trust, norms and networks that can improve the efficiency of the society" . The World Bank refers to social capital as institutions, relationships and norms that shape the quality and quantity of a society's social interactions. Social capital is not just the sum of the institutions that underpin a society, but more of the glue that holds them together (World Bank, 1998).

Social capital is divided roughly into two levels: The macro and the micro. The macro level refers to the institutional context in which organizations operate (see Olson, 1982; North, 1990). This macro level includes formal relationships and structures, such as the rules of law, legal frameworks, the political regime, the level of decentralization and the level of participation in the policy formulation process; in short, state capability and

credibility (Bain and Hicks, 1998). The micro level refers to the potential contribution that horizontal organizations and social networks make to development. Within the micro level, there are two types of social capital: cognitive and structural (Uphoff, 2000). The less tangible side of social capital, which refers to values, beliefs, attitudes, behaviour and social norms is termed as cognitive social capital. These values include the trust, solidarity and reciprocity that are shared among members of a community and that create the conditions under which communities can work together for a common good. *Structural* social capital includes the composition and practices of local level institutions, both formal and informal, which serve as instruments of community development. Thus, aspects of structural social capital include organizational density and characteristics, networks and mutual support organizations, exclusion, collective action, and conflict resolution. Structural social capital is built through horizontal organizations and networks that have collective and transparent decision making processes, accountable leaders, and practices of collective action and mutual responsibility (Bain and Hicks, 1998). Most studies focus on structural and cognitive social capital (precisely, social capital at the micro or household level), and the ways that these types of social capital interact at the community, household, and institutional levels. In this paper, we are limited to forms of structural social capital as defined in the survey data set.

3. Literature review

Social capital and household income

Social capital has been found to have a major impact on the income and welfare of the poor by improving the outcome of activities that affect them. The social capital literature refers to three pathways: the sharing of information among members, the reduction of opportunistic behaviour as a result of social pressure, and the facilitation of collective decision making (see, e.g., the reviews in Grootaert, 1997; Woolcock and Narayan, 2000). The functions of information sharing and collective decision making are certainly part of the mandate of the agrarian syndicates. Studies by Bebbington (1997 and Bebbington and Carroll (2000) have indicated that the syndicates increase the negotiating power of communities and their members, and thus improve access to resources. Each of these effects can readily translate into improved household income and welfare. It can reduce poverty through micro and macro channels by affecting the movement of information useful to the poor, and by improving growth and income redistribution at the national level (Grootaert and Bastelaer, 2002). Several studies have attempted to quantify social capital and its contribution to household income, and thus poverty reduction in African countries.

Narayan and Pritchett (1999) use trust to predict group membership, doing so in an instrumental variables framework. They endogenize group membership in an expenditure function for Tanzania using contemporaneous trust in strangers and government officials as instruments for group membership. Although they do not present the first-stage results, the discussion indicates that the association between the two is positive. However, even though the instrument set passes the test of instrument validity in one case, it should be noted that trust in either strangers of government officials is likely to have an independent effect on expenditure, and hence not a valid instrument (Durlauf, 2002).

Grootaert (1999; 2001) and Grootaert et al. (2004) in their research in Indonesia, Bolivia and Burkina Faso examine poor households' accumulation of social capital and returns from it in terms of whether it provides them with higher returns than other assets, and whether there are differential returns to social capital between the poor and the non-poor, and what variables are responsible for the differences. Both logit and non-logit models were estimated. The results for all three countries indicated that social capital significantly reduces household welfare and poverty or the probability to be poor.

In South Africa, Maluccio, Haddad and May (2000) use survey information on household membership in financial and non-financial groups as a proxy for social capital and find positive and significant effects of this measure of social capital on household welfare. However, Haddad and Maluccio (2003) replicated the methods of the studies and then extended it to assess whether the influence of social capital has changed over

time. Using a panel data set collected in South Africa's largest province, which allows the possibility of controlling for unobserved time-invariant factors at the household and community levels, they find no impact of social capital on per capita expenditure in 1993 but a positive and significant effect in 1998. They concluded that the result conformed to the economic, political and social changes experienced in South Africa. The results also provide evidence that local trust in neighbours and extended family is important for financial group participation, and that groups appear to be the location of social interactions that generate trust in non-local agents, including strangers, the media, and the national government. Furthermore, group membership, both financial and non-financial, is a determinant of per capita income. Treating group membership as a proxy measure for social capital suggests a positive effect for social capital, particularly in the case of non-financial group membership for which there are no explicit financial benefits envisioned. There was no evidence, however, that trust is contemporaneously important for income generation, and they concluded that the findings resonate with a number of themes from the literature.

Chia-Hsin and Ben (2004) found that the relationship between "organizational social capital" and household welfare was not significant in two villages of eastern Uganda. The econometric analysis demonstrates that richer homes in both villages do not show higher levels of investment in the seven dimensions of organizational social capital that were identified in the survey work. The reason they gave is that lack of investment in village level organizations is explained as an outcome of long-established social characteristics, where individualism and egalitarianism make it difficult to establish the hierarchical and collective values needed for the maintenance and efficacy of organizational structures. At the same time, they argue that the social capital present in less institutionalized relationships such as personalized networks, or brokerage positions, has a significant effect on household welfare.

A number of studies have also established the link between social capital and household welfare or poverty in Nigeria (Adeyeye, 2004; Okunmadewa, Yusuf and Omonona, 2007; Yusuf, 2008), whereas in Cameroon the influence of social religious capital on the poverty of households has been determined (Odia et al., 2006). The determinants of religious social capital are identified on the basis of a composite indicator obtained by taking into account the percentage of heads of families who respond affirmatively to the question: "Can you count on the financial support of your religious community, that is, of its leaders or other members, in the form of a loan and/or a gift, in the case of illness, of the death of a family member, of a job loss or when you experience short-term financial difficulties?"

Unlike Chia-Hsin and Ben (2004), Adeyeye (2004), Okunmadewa, Yusuf and Omonona (2007), and Odia et al. (2006), the rest of the other studies tested the extent of two-way causality between social capital and household per capita expenditure by means of instrumental variable estimation. With several dimensions of social capital indexes used in most of the studies, the real challenge was to find a suitable instrument set for this multiple facet of social capital. In order to make this task more feasible, most studies make use of models that use a single or aggregate social capital index. Our concern in this paper is that these variables capture different dimensions of social capital and, even though they may be very good proxies for social capital individually, condensing them

into a single indicator remains a challenge. To the best of our knowledge, Chia-Hsin and Ben (2004) is the only study that applied a suitable methodology in this direction, but failed to test the possibility of reverse causality.

Social capital and child schooling

There are a number of studies on the relationship between social capital and educational achievements, just like the links between social capital and children's enrolment. Parents who feel more connected to others have better access to information and are better able to establish and enforce norms with their children. Secondly, parents' positive social networks offer collective socialization of children. The hypothesis is that social capital is a filter through which human and financial capital flow from parents and community to the child. Even if the parents of a child have large amounts of human and financial capital, if the family's store of social capital in the form of conducive family relationships and links to the community is low, the child will not be able to access the parents' other forms of capital.

A higher involvement of the community and parents in the schools can improve the quality of schooling and reduce dropout rates.[5] Coleman (1988) first made this observation about the role of social capital in the acquisition of human capital in the context of US high schools, and it has proved valid in many other countries as well.

Since then, others have identified that education acts as a key to the creation of social capital and greater educational achievement as an important outcome (Putnam, 2000; Halpern, 1999; Meier, 1999). There are other studies that have explored the association between social capital and educational outcomes (e.g. Teachman, Paasch and Caver, 1996; Israel et al., 2001; Horvat et al., 2003; Ferguson, 2006). However, the majority of the preceding studies use family structure and voting rates, indicators not commonly considered aspects of social capital.

A number of studies in African countries have explored the link between family social capital or community participation in basic education and access and quality of education. Community participation here takes the form of purchase of supplies in schools, and voluntary follow-up of student work, financial contributions or commitments.

A study of Burkina Faso used the village average of the number of times households attend parent-teacher association (PTA) meetings as an education-specific indicator of social capital. After controlling for many household and village characteristics, the study found that increased PTA attendance was associated with a significant increase in the probability that children attended school (Grootaert, G-Taik and Anand, 2002). Households or family social capital has to do with the love and attention children receive from their parents, the security they feel, and the encouragement they get from their parents not only to gain access but also to be successful in school.

N'jie et al. (2002) sought to highlight the tripartite relationship existing among (PTAs), school management and school performance in Lower Basic Schools. It derives a composite set of school and PTA variables that made a significant difference to school performance during the 1997-2000 period, proposes policy guidelines for the creation of a legal framework for developing effective school-PTA partnerships, and suggests perspectives for PTAs in the future of the Gambian educational system. The findings were

that in rural areas, most of the parents on the PTA executive committees were illiterate, while in the urban regions most had primary school education. All committees were male-dominated in rural areas. Most PTAs had their own funds, thanks to parent contributions, donations, and income-generating activities. Activities ranged from infrastructural development and maintenance to sensitization campaigns, development of school plans, registration of pupils and collection of school fees. However, rural and sub-urban regions are disadvantaged as they may be both economically and educationally less able to cope with such developments than urban regions. The net result might be a widening of the urban/sub-urban/rural gaps in school performance.

Koura (2001) reviews a number of similar studies and identifies the factors that influenced primary school abandonment, as well as those that influenced girls to stay in school in 10 rural villages in the region of Segou in Mali. The author concludes that collaboration between the community and the school in rural Mali is essential to the fight against school dropout in general and for girls in particular. Actions not based in community support would be in vain. Other studies on the positive link between community participation and access and quality of schooling include Sangare and Diarra (1997) and ERNWACA (2002). The latter provides a review of research results that appear to address the factors associated with access to schooling and the retention of students within the primary sector in Côte d'Ivoire and Gambia, including the relationships between community participation and access to and quality of education in Benin, Cameroon, Ghana, Mali, and Togo.

Young Lives (2006) hypothesized that social capital at the household and/or community levels might impact on intermediate variables such as parental decisions to invest in a child's education, the amount of resources for investment, and the relative value parents attach to education for both girls and boys. In terms of structural social capital, it is hypothesized that membership of community groups that reinforce traditional conservative values (for example, some religious or kinship networks) might serve as a barrier to children's secular education. On the other hand, involvement in more change-oriented groups might lead to greater endorsement of modern education (Young Lives, 2006). Thus, results on the link between social capital and child schooling status are mixed. Results indicate that in Ethiopia, caregivers' membership in traditional religious groups was associated with reduced child enrolment in school, while cognitive social capital has a positive impact on a range of child well-being outcomes, including eight-year-old enrolment in school in Ethiopia, and being in the appropriate school year for the child's age in Peru (Young Lives, 2006).

Using a multinomial logit technique, Tabi (2009) provides general results that support the view that when household members (e.g. parents) actively participate in associative groups, it is more likely that both their boy and girl children (aged 5 to 17) will be currently enrolled, or must have had some schooling relative to children who have never been to school. The effect is stronger for the case of the mother's membership in the association. Similar effects have been determined in Mali by Koura (2001).

The causal effect of social capital and children's schooling cannot be ascertained until issues of causality are untangled. For example, does group membership contribute to higher child educational outcomes because the members are more exposed to information about the importance of school attendance, or do members who encourage their children's

educational participation tend to be more socially active? Until these causal associations are identified, policy recommendations regarding household social capital and child well-being will remain speculative.

Social capital and labour force participation

Human capital, defined by skills and qualifications, and to a lesser extent personal capital, defined in terms of behavioural characteristics, are considered to be key determinants in gaining employment or progressing in the workplace. In recent years, it has been recognized that an additional determinant – defined as social capital – can also have an important influence. Social capital can be seen as a positive asset for those who are seeking to find work or change jobs within the labour market. It can also be considered in terms of creating opportunities for, or barriers to, career progression and/or job retention. It needs to be recognized, however, that while the benefits of social capital within the labour market can often be seen as a positive asset, they can also be seen to disadvantage other groups or individuals.

The transmission mechanism of the effect of social capital on labour force participation could be based on the definition of social capital by Woolcock and Narayan's (2000). It states: "It's not what you know, it's who you know." According to Woolcock and Narayan (2000: 3), this common aphorism sums up much of the conventional wisdom regarding social capital. "It is wisdom born of our experience that gaining membership to exclusive clubs requires inside contacts, that close competition for jobs and contracts are usually won by those with "friends in high places." When we fall upon hard times, we know it is our friends and family who constitute the final "safety net." Social capital can provide positive networks of contacts or information assisting in successful job searches for people seeking employment, and also help those in employment in terms of progression within the workplace. However, a number of studies have also reported that social capital can be a negative characteristic and may disadvantage some groups within society in general, or individuals within an organization.

In the realm of employment, social capital has been linked with business start-up, earnings, employment, formal labour market participation, and job tenure (Mier and Giloth, 1986; Donato, Durand and Massey, 1992; Aguilera, 1999; Phillips and Massey 1999; Aldrich and Moody, 2000; Valenzuala and Gonzales, 2000; and Aguilera and Massey, 2003. Although social capital theory provides important theoretical explanations of how labour is allocated, few studies apply the concept to labour force participation. Further, studies addressing the relationship between social capital and labour force participation primarily study familial social networks but neglect friendship networks (Donato, Durand and Massey, 1992; Greenwell, Valdez and Da Vanzo, 1997; Caspi et al., 1998). Thus, using friendship networks, Aguilera (2002) found that social capital results in increased labour force participation as represented by employment and hours worked. The mechanism by which network groups affect labour market outcome can be understood from the development as provided below.

Social capital theorists have identified the differential access to job-related information that workers have and recognize that possessing more or superior information may lead to labour market advantages (Coleman, 1990). Workers not utilizing personal networks

may miss job opportunities only available through personal networks. For example, Hagan (1994) documented in her study how Maya men reserved jobs within a retail chain for men within their network. Applicants outside this network never learned about such jobs. Thus, as noted by Uzzi (1999), personal networks provide private information unavailable through formal networks. Workers with limited or deficient personal networks lack knowledge of appropriate employment protocol and/or regional employment practices. For example, Fernandez-Kelley and Patricia (1995) found that black inner-city teenagers often lack information about what employers expect on job interviews because many people within their network are unemployed and cannot provide such information. This lack of information can be harmful to workers' labour market outcomes, which are influenced by an individual's access to employment information (Concoran, Datcher and Ducan, 1974; Holzer, 1996).

Employment-related information can be acquired through living in a region for a period of time, and/or through participation in local labour markets. However, this information can also be obtained more rapidly and less expensively through social networks. Those using social networks can acquire labour market information with or without reduced trial and error periods. Hagan (1994) and Aguilera and Massey (2003) suggested that friends and relatives sort through jobs to reserve the better jobs for people within their network. This is an indication that workers can more quickly find jobs more closely matching their skills and preferences. The idea that social networks reduce the job search period was empirically tested by Montgomery (1992), who found that weak-tied networks provide employment offers more frequently.

It is important to note that not all studies indicate that social networks have a salient effect on labour markets. Some studies have challenged researchers who have connected social capital with superior labour market outcomes (Bridges and Villemez, 1986; Mouw, 1999). For example, Mouw (1999) examined the earnings of native workers in the United States utilizing several data sets and found no significant relationship between use of social capital during job search and earnings. Thus, it is important to clarify whether social capital affects labour market outcomes at all.

The few studies that have addressed the relationship between social capital, employment and hours worked have found mostly positive relationships. For example, Caspi et al. (1998) found a relationship between family structure and family conflict and youth unemployment. Specifically, youths born to unwed mothers and youths who had family conflict, such as verbal or physical abuse, were more likely to be unemployed. In these cases, family structure and family conflict represent a lack of social capital. Though the study is helpful in understanding the impact of lack of social capital on youth unemployment, specifically it considers familial social capital while ignoring non-family network structure or community social capital.

Greenwell, Valdez and Da Vanzo (1997) reported that immigrant men, whose mothers remained in their country of origin, were more likely to be employed, but women in the same situation were less likely to be employed. The study is specific to Salvadorean and Filipino immigrants in Los Angeles, and also focuses only on familial networks. Donato, Durand and Massey (1992) found that Mexican migrants who had relatives in the United States worked more hours than those without relatives in the United States, thus establishing the positive relationship between social capital and hours worked for

Mexican migrants, but also specifically relied on familial relations.

As indicated in Aguilera and Massey (2003), all the studies examining the relationship between social capital and employment and hours worked pertain to specific groups. Aguilera and Massey (2003) add to this body of literature by considering Asians, blacks, Latinos, and whites in his analysis. It is important to note that he groups many different ethnic groups into the broad categories, which created larger social processes thereby reducing the risk of missing nuances where studies focusing on specific ethnic groups capture. Thus, they include measures of network structure that specifically address the importance of friends rather than focusing on familial relationships, which have been overemphasized in the literature. Much of the social network literature reports that although familial networks may carry greater obligation, they are more likely to possess redundant information than friendship networks. For example, studies have shown that kin are less likely than non-kin to provide important resources and, thus, concentrating on kin may under-estimate the value of social capital (Marsden, 1990; Moore, 1990; Wellman and Wortley, 1990). If kin provides redundant employment information, this information may be of little consequence to the job applicant.

Stone et al. (2003) report a detailed investigation undertaken in Australia to examine the relationship between social capital and labour market outcomes, including its relationship to job seeking. Key findings indicate that social capital has some role to play in determining labour force status in terms of employment, and that people with high levels of social capital are more likely to be in full-time employment. However, in terms of job searching, the link was found not to be primarily based on trust, but to relate to the networks that exist to assist in job searching.

It should be noted that existing studies consider the social capital of a labour participant, and also failed to observe the bi-causal relationship that may exist between social capital and employment. An individual participation in the labour market is likely to be influenced by the social capital of other members of the household, and indeed a composite measure of ‘‘household social capital’’ may show stronger associations with labour market participation. Tabi (2007) studies the relationship between household social capital and labour force participation (defined as those working and/or looking for jobs) using the 2001 Cameroon Household Survey. The number of memberships, solidarity or network support and active participation in decision making were the key dimensions. Results indicate that household social capital is not endogenous with labour force participation, and that household membership in networks is generally positively related with increased labour force participation.

However, it is likely that an individual in a job may actively participate or join a group that contributes to a person’s social capital and help to build trust and networks, which later may be used as an asset in finding another job or progressing within a job. In this paper, we dwell on individual social capital, which is endogenous to labour market outcome.

4. Methodology

Theoretical models

Social capital and household income

Our approach draws on the existing theories and empirical results that social capital is correlated with income/consumption, and thus poverty. Analysing the contribution of social capital to household income poverty can be done in the context of a simple conceptual framework that views social capital as one class of assets available to households for generating income and making consumption possible. The household has an asset endowment consisting of physical assets, human capital, and social capital. The household combines these assets to engage in productive activities, either in enterprises within the household or in the external labour market. This model can be formalized in a set of structural equations making up a conventional model of household economic behaviour under constrained utility maximization. Based on the Keynesian theory that household consumption behaviour is a function of the level and composition of income, the set of structural equations can be summarized by a reduced-form equation that expresses household consumption directly as a function of the asset endowments and other exogenous characteristics of the household, and of the economic environment in which it makes decisions.

This suggests that poverty measured by household per capita expenditure is a function of social capital at the household level, including other variables as mentioned, such that:

$$Y = f(HSC, Z) \tag{1}$$

Where Y represents per capita household expenditure, HSC is the aggregate social capital indicators of the household, and Z is a vector of other independent variables, including individual characteristics such as age and sex of household head, parental educational level, and some household characteristics such as factor inputs (ownership of land, labour and capital), etc. The above model is specified in line with the common practices in the development literature, i.e. following the standard Mincer (1974) model. Human capital theory and the production function combined indicate the consideration of variables measuring skills (education, age or experience) and standard inputs (land, labour and capital).

Social capital and child schooling

The theoretical approach underlying most empirical studies of schooling attainment is

the human capital model developed by Schultz (1960; 1963), Becker (1965) and Mincer (1974). Education is a trade-off between enhanced future earnings and foregone earnings during enrolment in school. Education is viewed as not only a consumption activity but also an investment good. In this lifetime optimizing framework, an individual evaluates the direct and indirect costs of education and compares such costs with his or her expected return to schooling. Investment in education ceases when the marginal cost and marginal benefit are equal.

In Becker's (1981) model, altruistic parents maximize household utility for which quantity and quality of children, leisure, and market goods are arguments.[6] The decision to send a child to school can be modelled using economic models of household behaviour. Parents consider whether the utility of sending a child to school (U_i) exceeds the utility of keeping the child at home (U_0). If $U_i > U_0$, then parents enrol their child in school and vice versa. The assumptions of the model are: (i) every household has a utility function that depends on the human capital of its children and the consumption of all other goods and services; (ii) Investment in another year of schooling raises a child's human capital at the cost of reduced consumption of other goods and services.

Conditional on deciding to take a child to school, the expected household utility can be denoted as:

$$U_i = U(S_i, C_i) + \varepsilon_i \tag{2}$$

If parents decide not to send their child to school, the household utility is $U_0 = U(S_0, C_0) + \varepsilon_0$, and the budget constraint is $C_i + P_i = C_0 = Y$, where: S_i is increment to a child human capital from another year of education from school, C_i is consumption possible after incurring the cost of schooling, P_i is total cost of sending the child to school, and Y is household disposable income.

Moreover, the model defines that improvement of human capital is a function of individual characteristic (I_i), household characteristic (H_i) and school quality (Q_i), defined as:

$$S_i = S_i(I_i, H_i, Q_i) \tag{3}$$

The utility maximization problem can be written as:

$$U^* = Max(U_0, U_s) \tag{4}$$

And the linear functional form for the utility to send a child to school is:

$$U_i = \alpha_1 S_i + \alpha_2 C_i + \varepsilon_i \tag{5}$$

$$U_i = \alpha_1 S_i + \alpha_2 (Y - P) + \varepsilon_i \quad (6)$$

Adding (3) to (6) produces completed linear functional form for the utility to send a child to school as:

$$U_i = \alpha_0 + \alpha_1 S_i + \alpha_2 H_i + \alpha_3 Q_i + \alpha_4 Y + \alpha_5 P + \varepsilon_i \quad (7)$$

Whereas the linear functional form for the utility not to send child to school is:

$$U_0 = \alpha_2 Y + \varepsilon_0 \quad (8)$$

Finally, parents will send their children to school if $U_i - U_0 > 0$. The decision to send or not to send a child to school is influenced by a group of factors that affect the expected utility of the decision choice.

Social capital and labour force participation

In modeling labour force participation, we use the second-generation static model based on the neoclassical theory of labour supply. The decision to participate in the labour market is generally modelled as the individual's maximization of lifetime utility (happiness) subject to budget and time constraints. According to the theory of allocation of time, expounded by Becker (1965; 1981), Gronau (1977), Heckman (1977) and Killingsworth (1983), labour force participation decision is the result of a joint decision making process of the household. The influence of household composition on the labour supply decision may be incorporated into the household head's utility function, such that when the head optimizes own utility, the utility of the other household members is also optimized (Mincer, 1974). The household maximizes a combined utility function subject to the constraints they face to determine the times allocated to homework, market work and leisure for the individuals. In this framework, the incentive to supply varying amount of labour (i.e. the time allocated to market work) will depend on a number of personal and household characteristics and on the labour market characteristics, or more precisely the price of consumer goods and the offered wage relative to non-wage or transfer income.

Therefore, if the utility derived from the (marginal) expected wage is higher than that derived from the (marginal) hour of non-market work, the individual enters the labour force. The consumer chooses that combination of the market goods and leisure that yields maximum utility, given budget constraint, expressed as:

$$U = F(C, T_L) \quad (10)$$

Subject to the constraint:

$$P_c C = WT_w + A = Y + A \quad (11)$$

Where U = utility
C = units of consumer goods
T_L = number of hours of leisure
P_c = unit price of consumer goods
W = offered wage
T_w = number of hours of labour supply
Y = earned income
A = non-wage or transfer income

The second-generation labour force participation framework is described by three equations:

$$W_i = f(X_i) + u_i$$

$$W_i^r = f(X^r_i) + u^r_i$$

$$T_w = \max\left[0, w(W_i - W_i^r\right]$$

Where:
W_i = offered wage of individual i
W_i^r = reservation wage of individual i
T_{wi} = hours worked by individual i
X_i = vectors of characteristics influencing offered wage
X^r_i = vectors of characteristics influencing reservation wage
U_i = random errors in offered wage equation
U^r_i = random errors in reservation wage equation

It is postulated that an individual i will work only if the offered wage exceeds reservation wage, that is $T_w > 0$ if and only if $W_i > W_i^r$ and given W_i and W^r_i, the hours an individual works are related to the difference between W_i and W_i^r. Therefore, the factors that determine each will equally have an effect on the other, which in turn will influence an individual's desire to work.

The likelihood function that an individual works is estimated using a standard probit equation:

$$P(T_w>0) = P(W_i > W_i^r) \tag{12}$$

While participation is not the same as employment, because the former includes unemployed persons, second-generation models have traditionally taken the view that unemployment is a form of leisure and, therefore, equated participation with employment (Killingsworth, 1983). Ross (1986; 1990), using second-generation static models, equates participation with the decision to work or not to work.

Econometric models

Social capital and household income

The discussion on the theoretical framework of the social capital-income nexus leads to the following estimating equation:

$$lnY_i = \alpha + \beta HSC_i + \delta HC_i + \gamma OA + \eta V + \phi W + \mu_i \tag{13}$$

where Y_i is household expenditure per capita of household i; HSC_i, household endowment of social capital; HC_i, household endowment of human capital; OA_i household endowment of other assets; V_i a vector of household characteristics; Z_i a vector of village/region characteristics; and u_i an error term. This formulation is in line with earlier studies (Grootaert, 1999; Narayan and Pritchett, 1999; Grootaert and Narayan, 2004; and Okunmadewa, Yusuf and Omonona, 2007).

The key feature of the model is the assumption that social capital is truly "capital", i.e. a stock that generates a measurable return (flow of income) to the household. Social capital has many capital features: It requires resources (especially time) to be produced and it is subject to accumulation and destruction.

Much social capital is built during interactions that occur for social, religious, or cultural reasons. The key assumption is that the networks built through these interactions have measurable benefits to the participating individuals and lead, directly or indirectly, to a higher level of well-being. There is an impact assumption that social capital is embodied in the members of the household. This conforms to the position advocated by Portes (1998), which highlights that although the source of social capital is the relationship among a group of individuals, the capital itself is an individual asset. This is in contrast to the position of Putnam (1993), who sees social capital as a collective asset. For the purpose of this study, the position by Portes (1998) is adopted. Therefore, social capital is viewed as an individual household asset.

The main thesis of this study is that social capital is really an input in household's

production function. For instance, income levels can also influence many indicators of social capital. If membership in some associations requires membership fees or monthly/ annual subscriptions, this would suggest that the higher the income levels, the greater the ability to join some of these groups. Secondly, it has been argued that social capital, like human capital, can be in part a consumption good (Grootaert, 1999; Grootaert and Narayan, 2004). This is more so in non-mandatory social groups pursuing leisure activities. Since leisure is a luxury good, demand for leisure increases with income, which leads to a reverse causation from welfare level to social capital. Thus, it becomes imperative to validate the assumption of social capital being truly capital. In order to do this, the study tested for the existence of bi-directional causality with the aid of instrumental variable.

Thus, the procedure for the regression of welfare equations starts with the estimation of the endogenous explanatory variable (social capital) in a first stage OLS reduced form regression, with all the exogenous or control variables from the multivariate equations and instruments to predict a social capital. In the second stage, the predicted values of social capital obtained from this first stage model are considered in corresponding instrumental variables (IV) regressions, along with the rest of the regressors. The first-stage social capital regressions based on OLS take the form:

$$HSC_i = \gamma X_i + \delta l_i + \varepsilon_i \tag{14}$$

where X is a vector of economic, social and demographic variables (i.e. all predetermined variables or the regressors from each of the welfare models and I are variables instrumental to social capital.

The real challenge is to find a suitable instrument set for social capital: Instruments must determine social capital but not household welfare (nor be determined by household welfare). In order to make this task more feasible, we limit our attention to the model, which uses a single social capital index since the literature and survey data identify several indicators of social capital. We argue that the following are conceptually suitable instruments for social capital:

(i) *The level of satisfaction of individuals belonging to institutions at the village or community level.* Clearly, the possibility for a given household to join an association increases as the general level of happiness increases in the community. Though it can be argued that satisfaction is likely to be related to many household unobservables that might affect household welfare (e.g. people that are more positive about everything might have higher household welfare because they invest more, etc), the general level of community happiness is not directly related to individual household welfare.

(ii) An indicator of whether a household member had been a victim of physical violence in the village in the 12 months prior to the survey. The idea is that the more people distrust others as a result of violence between them, and the more they feel that others do not also trust them, the more unlikely cooperative and reciprocal behaviours will arise, thus destroying social capital.

In order to avoid spurious correlations between the dependant variable and the instruments, these instrumental variables are calculated for each household as the mean over all other households in the community. Another estimation problem is the issue of omitted variable bias arising from the fact that it is not possible to capture all of the factors that affect poverty, using the regular household surveys. To some extent, we solve this problem by including as many household, individual and other characteristics.

In the empirical models, social capital is tested in two ways. Firstly, it is considered as a four-dimension additive model. Secondly, all the four dimensions of social capital are summarized into one index variable to determine the joint effect. In the former approach, all social capital dimensions are presumed to act independently of each other; their effects are additive. The second approach, developed by Narayan and Pritchett (1999), is to treat each social capital measure as more or less dependent on the other measures, and social capital is tested as a multiplicative index. The argument for this approach would be that each component of social capital measure reinforces other measures. Thus, our study uses the ordinary least square (OLS) regression that provides estimates involving the additive and multiplicative social capital indexes, whereas the instrumental variable regression involves mainly the multiplicative or aggregate social capital index.

Social capital and child schooling

In the analytical model, school decision making is conceptualized as a function of household characteristics, as well as individual child characteristics based on the theoretical model. The reduced form demand determinants of schooling are given by:

$$S^* = F(W, P_m, P_n, V, X, Z) \tag{15}$$

where S^* is the criterion variable, school status for a member of a particular cohort for his or her lifetime (child's enrolment status in this case); W is a vector of wages for current household members, as well as future expected earnings (conditional on schooling); P_m is a vector of market input prices (which should include the cost of borrowing for investment in human capital) and P_n is a vector of non-market prices such as travel time to school; V is non-earned household income, X describes individual and family-specific characteristics, and Z represents community characteristics other than P_m and P_n.

The theoretical approach provides some guidance for the selection of variables to be included in the analysis of schooling attainment. The individual characteristics included in the analysis are *age* and *age squared,* which control for differences in potential attainment by age as well as changes across birth cohorts, allowing for non-linearities in the relationship between age and schooling. Family characteristics are also important potential determinants of school attainment. If families are credit constrained, current income may influence a family's capacity to invest in child schooling (Becker and Tomes, 1986 Taubman, 1989; Haveman and Wolfe, 1995; Jacoby, 1994; and Lillard and Kilburn, 1995). Since family labour supply choices are determined jointly with child schooling

decisions, current income is endogenous. The value of land and property owned by the household is specified to proxy the permanent income available for education outlays.

Mother's and father's education levels are also included to account for genetic ability of children, as well as the complementary home learning that may reduce the cost of schooling in households with better educated parents. Parent's education may also serve as a predictor of the parent's market earning potential that could be invested in schooling. According to Coleman (1990), human capital encompasses the acquired knowledge, intelligence, common sense, personal abilities and talents housed within a particular person. In research on children's welfare and outcomes, human capital is generally measured at the family level, commonly referring to the parent's educational levels, which can influence the type of cognitive environment within a home. The specific amount of support and aid that children receive from parents in the home environment can either enhance or hinder the children's own learning processes (Coleman, 1988). Furthermore, mothers with more education may have increased bargaining power in the household, and may choose to allocate more resources towards children and their human capital than would their husbands (Thomas, 1994).

Community characteristics also affect the cost and quality of school services available to a child. An urban-rural indicator is included to control for the likelihood that individuals in rural areas have access to fewer schools and less qualified teachers, and may have higher opportunity costs due to farm employment opportunities or child labour needs at home.

This paper focuses on the demand for schooling of children aged 5-17, which corresponds roughly to the primary and secondary level of schooling in Cameroon. Thus, we measure a child's school status, *S*, in terms of enrolment. Based on the preceding discussion, the following control variables, c_i, are included in all of the regression estimates for child school status, as defined in Equation 16: Dummy variables that control for regional (urban or rural) characteristics representing the supply of infrastructure as well as differences that may differentially influence the cost of schooling for boys and girls; parental level of education; and child characteristics (age, age squared, and sex); and a measure of household access to resources — total household per capita consumption expenditures or land holdings and other household assets, *Y,* and household social capital, *HSC*.

$$S_i = \alpha + \beta_1 \chi_i + \beta_3 Y_i + \beta_4 HSC_i \tag{16}$$

Our empirical strategy hinges on the assertion that social capital is an important determinant of child enrolment, and that social capital is hard to measure and thus should be best treated as a latent construct. Social capital is different from other forms of capital in the sense that it is not directly observable. Therefore, our strategy is again to use social capital as a single index composed of different indicators that could act as an individual proxy for different dimensions of social capital based on principal component analysis (PCA). These have been computed as SCI_1 and SCI_2.

Equation 16 is estimated using the OLS and IV techniques. The OLS estimates could be biased because of causality problems. We explore a 2SLS strategy instrumenting social capital with an indicator of trust in government. This is an indicator of whether any

household member paid an irregular amount for any public service. The responses were averaged for the number of services and the reciprocal computed, which is expected to slow down village or community cohesion to the advantage of macro level social capital. Trust in government officials is unlikely to affect enrolment, and is therefore a valid instrument. Social capital is also tested here in two ways - as additive and multiplicative indexes.

Social capital and labour force participation

In this paper, labour force participation measures the proportion of the population over 17 and below 65 years who were either working (employed) or without paid work (those who lost their jobs and new entrants into the labour market, i.e. unemployed) and actively seeking work at the time of the survey.[7] Thus, the choice of variables used in our analysis takes account of the theoretical underpinnings and empirical results from studies of labour force participation behaviour. For instance, it has been determined that individuals in households with pre-school age children are less likely to be in the labour force and employment than others with older children. Secondly, likely married females may be less likely to work than single females because the former shares substantial income with their husbands (Ross, 1986; 1990; Miller and Volker, 1983).

Here, we used a probit model to estimate a model of the following form:

$$P_i^* = X_i\beta + \mu_i$$

$$P_i = 1 \text{ if } P^* > 0$$

$$P_i = 0 \text{ if otherwise}$$

where P_i is a binary response indicator of the *ith* individual determined by the underlying latent variable P_i^* and X_i is a row vector of explanatory variables, while β is a vector of unknown parameters to be estimated, and μ_i is the error term.

The labour force participation model to be estimated is done for the entire sample. Strauss and Thomas (1995) have pointed out that in a reduced form model with no measures of household resources, part of the effect of education will reflect the role of income. This notwithstanding, empirical literature supports the notion that even after controlling for resources, parental education in general and that of mothers in particular has persistent effects. We, therefore, incorporate an asset variable to capture household resources. In estimating our baseline empirical probit model, labour force participation (*LP*) will take the form:

$$LP = (E, A, A2, Rw, Ch, Ad\ Mr, SC) \quad (17)$$

Where *E, A, Rw, Ch, Ad, Mr,* and *Sc* are the individual's level of education, age, age squared (to capture non-linear effects), reservation wage (i.e. household assets plus non-labour income), presence of children, presence of adults, milieu of residence, and individual participation in networks, social capital, respectively.

We acknowledge that social capital is endogenous and would lead to simultaneity bias in the labour force participation model. The principle of social homophily (see McPherson, Smith-Lovin and Cook, 2001) is important here and can be linked to labour force participation. For the most part, individuals choose their friends and the groups they belong and therefore some, if not all, of the positive correlation may simply be due to the fact that similar people tend to associate with one another. Thus, in as much as people may utilize social networks to gather information that can lead to employment and increased labour force participation, the causal link may simply be picking up a spurious effect owing to social homophily.

From the above analysis, social capital becomes endogenous, and its estimated coefficient will be upward biased if the social capital model is not estimated by an instrumental variable regression. Instrumental variables estimation uses the correlation between social capital and another variable (the instrument) to estimate the impact of exogenous shifts in social capital on the outcome indicator. This eliminates the difficulty created by the potentially simultaneous determination of labour participation and social capital. The implementation of IV in the case of a binary dependant variable for health, with endogenous dummy for social participation, requires the use of the following standard bivariate probit regression model (Greene, 2008):

$$LP_i^* = \beta_1' X + \gamma SC_i + \varepsilon_i, \quad LP_i = 1 \text{ if } LP^* > 0, \text{ and } LP_i = 0 \text{ otherwise} \tag{18}$$

$$SC_i^* = \beta_2' X + \varphi Z + \mu_i, \quad SC_i = 1 \text{ if } SC^* > 0 \text{ and } SC_i = 0 \text{ otherwise} \tag{19}$$

where participation (LP_i) of person *i* depends on her participation in social activities (Si) and other socioeconomic variables (X). Equation 19 indicates that social participation (SC_i) is simultaneously determined by the same set of covariates (X) but uniquely depends on a set of instruments (Z). β_1', β_2', γ, and φ' are the coefficients to be estimated by the maximum likelihood method under the assumptions that the residual terms ε_i and μ_i are uncorrelated with the exogenous variables of the model, and they have a joint probability distribution that is bivariate normal, i.e. $E[\varepsilon_i] = E[\mu_i] = 0$, and $V(\varepsilon_i) = V(\mu_i) = 1$. Notice that, as a consequence, the correlation between the errors is given by $\rho_{\varepsilon,\mu} = cov(\varepsilon_i, \mu_i)$.

An IV model is only useful to test for the causal influence of social capital on labour force participation, if the assumption that the social capital variable (SC_i) is exogenous does not hold. An "endogenity test" based on the value of $\rho_{\varepsilon,\mu}$ could help investigate this issue. If the residuals in both equations are not significantly correlated ($\rho = 0$), then

$\gamma\hat{}$ in Equation 18 cannot be assumed to be biased. However, $\rho_{\varepsilon,\mu} \neq 0$ indicates that Equation 18 and Equation 19 should be estimated simultaneously to take into account unobservable individual characteristics influencing both individual's social participation and their probability to be in the labour market. A significant value of rho (i.e. LR test rejects H0) thus indicates that SC_i is endogenous. Another important question in any IV regression is whether the instruments (Z) are valid. The validity of the instruments depends on two conditions: Whether the variables in Z are sufficiently correlated with social participation, and whether they are legitimately excludable from Equation 18. Instruments are considered as valid if, according to a t-test, Z does not influence participation, and it is a good predictor of social participation.

Individual participation or membership in associations is instrumented with the proportion of foreigners in each community. Our argument in this paper is that population heterogeneity may result in circumstances where formal and/or informal institutions are not binding. The proportion of foreigners in a community, which is synonymous with population heterogeneity, is such a factor that may trigger dis-attachment as higher levels of heterogeneity would break closure, reduce acquaintance among residents, and may result in lower trust among members of the community (e.g., Rose and Clear, 1998; Rosenfeld, Messner and Baumer, 2001). Therefore, our argument is more in line with the literature that links heterogeneity to social capital in the wider sense.

5. Data

In this section, we discuss the sources of data, measurement of variables, and descriptive statistics for all the models used in this paper.

Source of data

The data for this study comes from the 2007 Cameroon Household Survey (ECAM3). The data set represents the most recent, obtainable from the National Institute of Statistics. The sample is nationally representative and consists of about 12,000 households and 425,921 individuals from the 10 provinces of the country, divided into 22 strata, including 10 rural and 12 urban regions. The survey was carried out with administered questionnaires and provides information at the household and individual levels on issues of demographic, social, economic, education, health and labour market characteristics of households. The household expenditure variable is made up of four components: Total food consumption expenditure, whether purchased or from home production, total non-food expenditure on durable and non-durable goods, and non-consumption expenditure. Lastly, the survey contains some questions at the household and individual levels that were used to compute the household endowment of social capital as described below. Section 12.3 of the official survey report contains the questionnaire used in measuring social capital.

Measures of social capital

For this study, we construct a quantitative social capital measure that focuses on social capital in groups and associations, including supra-community associations. The effectiveness with which social capital in the form of local associations can fulfill its role depends on many aspects of the association, reflecting its structure, its membership, and its functioning. Following on from Narayan and Pritchett (1999), Grootaert et al. (2004) and other studies, our aggregative measure of organizational social capital can be decomposed into four separate measures, each of which contains an argument concerning the relationship between organizational social capital and household welfare. In this study, the available data set limits us to structural social capital (objective measures of what people ''do'', such as membership of networks) as opposed to cognitive social capital (subjective measures of what people ''feel'', such as notions of trust and reciprocity). The four structural social capital measures are as follows:

- *Density of membership:* This is determined from the question asked as to how many organizations you belong to, which provides the value of social capital at the individual level. At the household level, this is captured by the summation of the total number of associations to which each household belongs. In other words, the membership of associations by individuals in the household is summed up. It is generally assumed that the more memberships a household has, the more possibilities there are for building social networks that promote household welfare. Though the quality, as well as the quantity, of these associations matters, this is captured in one other social capital measure: Participation in decision making.

- *Participation in decision making index:* This is determined from the question: Whether you have a say in the affairs of the organization. In our data set, it corresponds to "whether an individual occupies any post of responsibility". This is not a measure of democracy, per se; rather, it is a measure of whether the household has influence in the decisions taken by the association. This is coded into "very active" or "not very active" and scaled on a 1 and 0 basis, respectively. At the household level, the computation is done by summing up the subjective responses of households on their rating in the participation in the decision making (i.e. total number of those holding posts of responsibility) of entire institutions. The responses were averaged across the groups and multiplied by 100 for each household, whereby 100 meant complete participation in decision making. It is argued that in the structure of a given network, who interacts with whom, how frequently, and on what terms has a major bearing on the flow of resources through that network. Those who occupy key strategic positions in the network, especially those whose ties span important groups, can be said to have more social capital than their peers, precisely because their network position gives them heightened access to more and better resources (Burt, 2000).

- *Social support:* The belief that emotional support and practical help would be provided when needed. This measure is presumed to be more highly correlated to richer households. In other words, a high score indicates a higher amount of that aspect of organizational social capital. In aggregate, these measures act as an indication of the organizational social capital available to the household. The dimension of social support was explored through the following survey question at the household level: Having people from whom you receive practical help when needed. In our survey, these include supports from family, relatives, neighbours, friends, religious associations, non-governmental organizations (NGOs) and others during the past year. At the individual level, it concerns network support (i.e. whether the organization to which one belongs to gives support or aid). The total responses at the household level are summed up and added to the mean response of organizational support, averaged and multiplied by 100. Social support was seen as a sign of close networks and good social relationships.

- *Labour contribution:* This is obtained from the question: How many hours did you devote to your association per month? Thus, the total number of hours that household members belonging to institutions claimed to have worked for their institutions is determined. This is also rescaled to 100; that is, the total for each household is divided by the maximum score and multiplied by 100.

- *Aggregate social capital index:* Unlike other studies that obtained the index by the multiplication of various social capital index (e.g., density of membership, heterogeneity index, and decision making index (Narayan and Pritchett, 1999; Grootaert, 1999; Grootaert and Narayan, 2004; Yusuf, 2008), we followed the applications of Chia-Hsin and Ben (2004) based on principal component analysis (PCA)[8] to determine the aggregate or multiplicative social capital index, which avoids assigning equal weights to all the dimensions of social capital. The resultant index is renormalized to maximum value of 100.

Table 1: Principal component loadings for the first component and explained

variance

Variable	SCI_1	SCI_2
Density of membership	0.555	0.576
Participation in decision making	0.514	0.489
Labour contribution	0.652	0.654
Social support	0.024	
Explained variance	30	40
Number of observations	4,751	5,199

Source: Author's calculation based on the 2007 Cameroon Household Survey

As explained in Bjørnskov (2006), PCA indicates whether several elements, for example different social capital dimensions, are in fact manifestations of the same phenomena. First, we performed PCA including density of membership, participation in decision making, labour contribution and social support and saved the first principal component as SCI_1, which explains about 30% of the total variation. This could be said to represent people's extensive involvement in social activities (i.e. social participation and networks or structural social capital), whereas support or solidarity represents a distinct dimension. This is an overall index merging both presence and absence of social capital in one measure. The solution shows that support does not belong with the other dimensions of social capital. The impression is that trying to squeeze the four variables into one component would amount to throwing out a lot of information.

We have, therefore, followed the literature that is critical to Putnam (1993) and treat network activity – the measures on membership, participation and labour contribution – separately from network support or solidarity, which is quite consistent with more recent work (e.g. Bjørnskov, 2006).[9] Then another index is formed in a similar way, $SC1_2$, as the first principal component of the three indicators excluding network support, which explains about 40%. The linear combinations of the variables are presented in Table 1.

Descriptive statistics of sample

Social capital or community level organizations

In this section, we present the organizational memberships according to the type of association respondents are involved in, and their overall activities that form the basis of social capital in Cameroon. It should be understood that we have not taken into account all household members who belong to networks, because it is unlikely that the "social capital" of youngsters is comparable with the one of adults. Thus, the minimum age of a respondent is 21. As observed in Table 2, the majority of memberships, by a considerable margin, are in social and cultural organizations, accounting for 43% of memberships in the country. This high percentage reflects the dominance of clan-based and religious groups, which perform primarily social or cultural functions. Of the remaining 57% of membership, these mostly fall into the "production and employment", and education/ health and training service groups' categories. These organizations are concerned with economic welfare. It should be understood that a majority of these organizations exist outside the formal sector. The rest of the organizations, including rights and environmental

protection, NGOs and other organizations appear less important in Cameroon.

Table 2: Weighted percentage of Cameroonian households participating in local associations by region

	Education/ health and training service groups	Production/ develop-ment and employment groups	Social and cultural groups	Protection of the environment and citizens' rights	NGO/ civic groups	Other groups
Douala	1.5	3.2	8.9	0.1	0.0	1.0
Yaoundé	3.0	4.7	4.2	0.2	0.1	1.6
Adamawa	0.5	1.0	0.6	0.0	0.0	0.0
Centre	1.7	4.2	0.6	0.1	0.0	1.1
East	0.4	0.7	0.4	0.0	0.0	0.0
Far North	3.2	1.7	0.1	0.0	0.0	0.1
Littoral	0.5	2.2	3.5	0.0	0.0	0.5
North	0.3	1.3	0.5	0.1	0.0	0.5
North West	2.0	2.6	7.7	0.1	0.1	1.0
West	6.7	2.9	4.9	0.3	0.0	0.9
South	0.4	1.3	2.5	0.0	0.0	0.2
South West	0.8	1.2	8.9	0.0	0.0	0.4
Cameroon:						
Urban	8.7	11.5	20.4	0.6	0.2	3.9
Semi-urban	1.6	3.1	4.7	0.2	0.0	0.8
Rural	10.7	12.5	17.9	0.2	0.1	2.8
Share of group	21.0	27.1	43.0	1.0	0.3	7.5

Source: Author's calculation based on the 2007 Cameroon Household Survey.

Finally, as concerns the regional distribution of networks, the three most important groups are most concentrated in the two big cities of Douala and Yaoundé, West, North West and the Centre regions. The rural population are slightly more involved in the "production and employment", and education/health and training service groups' categories, whereas the urban areas dominate in social and cultural groups as well as in what could be termed formal groups (i.e. rights and environmental protection and NGOs) groups, respectively. Nevertheless, there is almost a balance in the distribution of social capital in terms of the most important organization in Cameroon.

In Table 3, we present the activities of households in local level institutions. Each household in Cameroon belongs to an average of six associations. However, rural households belong to one more association than their semi-rural and urban households. Urban households, on the average, belong to less number of associations than households in other areas. Each of the household belongs to at least one association. Participation in decision making shows moderate level of activity. The respondents are relatively active in their associations, with index of participation averaging 26.8. Respondents in semi-urban areas are more active than their urban and rural counterparts in their involvement in the associations, both at the household and individual levels.

Table 3: Activities of households in local level institutions

	Rural	Semi-urban	Urban	All

Household level				
Density of memberships				
Average	1	1	1	1
Minimum	0	0	0	0
Maximum	2	2	3	3
Participation in decision making index	28.04	31.76	25.28	26.83
Social support	42.56	41.51	39.87	40.91
Labour contribution	4.93	5.85	5.16	5.18
Individual level				
Membership in association (%)	27.3	36.3	34.9	32.6
Participation in decision making (%)	28.5	31.5	25.9	27.3
Network support (%)	86.1	91.2	91.4	90.0
Labour contribution	6.9	7.7	7.1	7.13
Age of individual	44	41	40	41

Source: Author's calculation based on the 2007 Cameroon Household Survey

See text for variable definitions (at the household level except for density of membership, all others are scaled 0-100).

In terms of support received from informal (family, relatives, neighbours, friends, religious leaders), the rural environment dominates in terms of this cohesive measure of social capital. Thus, solidarity is slightly more observed among rural households. Finally, for an association to be sustainable, it requires the deliberate contributions of its members in terms of labour. It will seem that households in the urban areas are slightly more frequent in contributing to the activities of their associations than households in rural areas, both at the household and individual levels. This trend is equally observed at the individual level, where a majority of households in the urban areas indicated having support from networks.

Socioeconomic characteristics of sampled households

Table 4 provides summary statistics describing the analytic sample population used in the analyses on the relationship between social capital and household monetary poverty. As indicated in the table, average annual household expenditure per capita, which is a proxy for household income, is about 477,105 CFA francs.

Table 4: Descriptive statistics of variables short-listed for regression analysis

Definition of variables	Mean	Std. Deviation
Household income: Refers to annual per capita household expenditure	477,105	503,453
Age of household head in years	42	14.94
Household head sex: refers to the biological difference between male and female. This was a dichotomous variable, female=1, otherwise=0	0.267	0.442
Household size: Refers to the number of people staying/living in the same	4.49	3.06

room/house, as characterized by such things as having the same household head and eating dinner together, among others		
Milieu of resident of household=1, if urban, and 0, if rural	0.56	0.497
Land area cultivated by household	1.91	3.874
Household head sector of activity: formal sector job=1, and 0, otherwise	0.199	0.399
Education of the household head: Refers to the highest level of schooling reached by the household head. The available categories for this variable were: No education (0), primary (1), post-primary (2), secondary education (3) and post-secondary education (4)	1.71	1.36
Instruments for social capital		
Proportion of households in community victims of physical violence	0.755	0.749
Level of satisfaction of community involvement in networks	1.34	1.33

Source: Author's compilation based on the 2007 Cameroon Household Survey.

Regarding demographic and other household characteristics, the results indicate that the average age of a household head is 42 years, which is expectedly supposed to be an enhancing force to the labour intensive nature of economic activities in Cameroon. This is, therefore, an active phase in which people are expected to be responsive to developmental initiatives. However, a majority of these family heads work in the informal sector, as just about 20% of them operate in formal sector jobs. About 73% of households in our sample are headed by men, with about 27% by women. A little more (56%) of the households are urban dwellers. As concerns some of the traditional physical inputs of production such as land, farmland exploited in 2007 was almost two hectare on average. Turning to human capital, the mean level of education attained by a household head lies between primary and post-primary.

Lastly, the results further reveal that Cameroon is a country of relatively large family size of about five individuals, on average, per household.

Selected characteristics at child level

This section focuses on the characteristics of households with primary and secondary school age children with reference to their effects on schooling decision. The final sample for the analysis of enrolment was about 13,918 aged between 5 and 17 (inclusive), which practically corresponds to the primary and secondary school age range in Cameroon.

Table 5 reports the means of the dependent and control variables used in the multivariate analysis of social capital and child schooling. Our analysis is based on

data for about 3,000 children in the 5-17 age group, for whom complete information is available on schooling and household characteristics. The first variable represents the outcome of interest to this section and among the sample; the proportion of children enrolled was 85% in 2007. However, the sample had an almost equal proportion of girls and boys who were either enrolled or not, though the sample had a slightly higher (42.9%) proportion of boys than girls (42.2%) who were enrolled.

Table 5: Descriptive statistics for observations at child level and other household characteristics

Definition of variables	Mean	Std.Deviation
Enrolment refers to whether a child was enrolled (1) in school or not (0)	0.85	0.356
Age of child in years: This was measured in years as a continuous variable. Adding child's age squared (and age squared divided by 1000) did not improve the decision model, though some studies have used it in schooling outcome models	9.5	3.89
Child sex: Refers to the biological difference between male and female. This was a dichotomous variable, female=1, otherwise=0.	0.51	0.499
Female enrolment	0.422	0.355
Male enrolment	0.499	0.357
Under 5: Refers to number of children in household aged below 5	1	0.932
Adults: Refers to the number of persons in household aged 19 years and above	2	1.27
Milieu of resident of household=1, if urban, and 0, if rural	0.54	0.497
Enrolment in urban area	0.488	0.387

continued next page

Table 5 Continued

Definition of variables	Mean	Std.Deviation
Enrolment in rural area	0.363	0.326
School cost ($x10^{-4}$): Refers to amount spent on schooling, including registration, fees, parens- teachers association levy and school-related other expenses all valued in local currency Adding the squared value of cost indicates whether high education cost affects enrolment	2.5274	27.287
Asset[a] ($x10^{-4}$): This is an indicator for household wealth other than income	154.3541	682.9

based on assets. This replaces household income, avoiding the correlation between social capital and the former		
Education of parents: Refers to the highest level of schooling reached. The available categories for this variable were: No education (0), primary (1), secondary education (2) and post-secondary education (3)		
Father's education	1.4	0.897
Mother's education	1.1	0.872
Instrument for social capital		
Trust in government	0.923	0.16

Source: Author's compilation based on the 2007 Cameroon Household Survey
Note:
a. Household asset variable is made up of equipment/tools/machinery, buildings and lands. This is valued in local currency (i.e., ten thousands).

We now provide other features as concerns parental and household characteristics. In the sample, the presence of other children in a household meant that household educational resources have to be shared among the school going children. On the other hand, the presence of adult members in a household may increase learning opportunities in a household, as children may get encouragement from adult members as well as support with their school work. On average, most households had few pre-school age siblings than adults. In 2007, a majority of urban households had their children enrolled (48.8%) as opposed to rural settlements (36.3%), though there was an almost equal representation of both urban and rural settlers in the sample. The average amount of resources spent on child schooling stands at about 26,000 francs, whereas with respect to physical assets, a household has on average 154,000 francs. Finally, turning to parental human capital, mothers of these children are slightly less educated than fathers. Fathers' educational attainment is close to secondary level, whereas most mothers of these children had primary education, on average.

Characteristics of individuals within the labour market

Table 6 provides descriptive statistics for some of the pertinent variables in the data set who either were in the labour market or seeking employment (i.e. labour force participants). Thus, based on our sample, the mean labour force participation rate is about 66%, indicating those who were employed and/or searched for jobs in 2007. Most of these individuals tend to be middle-aged, with the 2007 average age being 33. There is almost gender equality among the sample. However, there are relatively lower participation rates among the females (29.7%) against the males (36.1%). Though the difference between urban and rural dwellers is negligible, the participation rate for the urban population is higher (39.9%), while in the rural areas it stood at 28.8%. Again, most households had fewer pre-school age siblings than adults.

As concerns other resources, the average unearned income that an individual receives

combined with household assets is about 76,000 francs. Lastly, regarding human capital, about 20% of all individuals in the sample in 2007 had no educational qualification, 31% had primary school, 42% had secondary post-primary schooling, and less than 10% had post-secondary level of education.

Table 6: Descriptive statistics for observations of individuals within the labour market

Definition of variables	Mean	Std. Deviation
Labour force participation=1, if employed and or seeking for jobs and 0, otherwise	0.66	0.474
Age of individuals in years: This was measured in years as a continuous variable. We added age squared (squared divided by 1000) in the model	33	11.503
Sex of individual: Refers to the biological difference between male and female. This was a dichotomous variable, female=1, otherwise=0	0.52	0.499
Female participants	0.29	0.245
Male participants	0.36	0.311
Under 5: Refers to number of children in household aged below 5	1	0.932
Adults: Refers to the number of persons in household aged 19 and above	2	1.27
Milieu of resident of household=1, if urban, and 0, if rural	0.56	0.497
Urban labour force participants	0.39	0.286

continued next page

Table 6 Continued

Definition of variables	Mean	Std. Deviation
Rural labour force participants	0.26	0.234
Reservation wage ($x10^{-4}$): This is an indicator for household wealth other than income based on assets plus non-labour income. This replaces household income, avoiding the correlation between social capital and the former	7.6209	12.375
Education of individual: Refers to the highest level of schooling attained relative to no education		

No education	0.19	0.398
Primary	0.31	0.463
Secondary	0.421	0.493
Post-secondary	0.067	0.251
Instrument for social capital		
Proportion of foreigners living in the community	0.02	0.121

Source: Compiled by author from the 2007 Cameroon Household Survey
Note: a. Asset is as defined in Table 5, whereas non-labour income is made of rental income and remittances. This is valued in local currency.

6. Econometric results

Effects of social capital on household income

This section presents the impact of social capital on poverty within the context of the methodology proposed. Both multiplicative and additive social capital indexes are used to determine the impact of social capital on household income, proxied by per capita expenditure of households. Table 7a presents the effect of social capital on household welfare based on the OLS. In the first column is the model of household welfare behaviour, including the four additive social capital variables. These are: Household memberships in associations, index of participation, social support and labour contribution score. This model shows that about 37% of the variations in per capita expenditure of households are explained by the specified human capital and demographic factors.[10] This disaggregation

shows that membership of households in associations, and active participation in decision making, is associated with higher welfare, although the coefficient of the latter is fairly small. In line with Grootaert, Gi-Taik and Anand (2002), Grootaert and Narayan (2004), Yusuf (2008), additional membership of households in associations and high level of commitment to associations leads to improved welfare. However, social support and labour contribution score mildly dampens poverty.

In the last two columns of the table, the multiplicative social capital variables are introduced. These are SCI_1, which is the most inclusive consisting of all four dimensions of social capital and SCI_2, which excludes social support. Along with the demographic variables, the two aggregate social capital indexes significantly and positively influence household income, though with fairly small coefficients.

In specific terms, there are other household characteristics that also accurately predict household income and, thus, influence poverty. Rural households are more likely to be income poor relative to urban households. Factor endowments such as cultivated farmland, level of education and the tendency for a household head working in the formal sector help generate more household income and, thus, likely to reduce poverty.

The main thesis of this study is that the results presented above could be biased because of causality problems as earlier discussed. We tested for the existence of bi-directional causality with the aid of instrumental variable. Using the aggregate social capital model as indicated in Table 7a, the original social capital index was instrumented. The result of the instrumental variable is presented in Table 7b. As concerns the regression results, the Durbin-Wu-Hausman test indicates that the null of exogeneity of the aggregate social capital indexes (i.e., SCI_1 and SCI_2) can be rejected.

Table 7a: OLS regression results of social capital and household poverty-Dependent variable: well-being (log of household per capita expenditure)

Variables	(1)	(2)	(3)
Intercept	12.21 (12.57)***	12.35(11.70)***	
12.34(18.15)***			
Social capital dimensions			
Density of membership	0.120 (2.92)**		
Participation in decision making	0.002 (6.89)***		
Social support	0.001 (1.32)		
Labour contribution	0.002 (1.22)		
Social capital index			
SCI_1		0.0033(7.29)***	
SCI_2			
0.0034(7.48)***			

Age of household head	0.004 (0.88)	0.004(0.94)	0.005(1.05)
Squared age of household head	0.0001(0.28)	0.0001(0.27)	0.0001(0.25)
Sex of household head	0.018(0.82)	0.015(0.66)	0.019(0.87)
Household size	-0.126(-26.77)***	-0.125(-26.61)***	-0.129(-28.04)***
Urban milieu of resident	0.265(12.61)***	0.264(12.61)***	0.290(14.43)***
Farmland cultivated	0.007(3.01)**	0.007(2.94)**	0.008(3.75)**
Formal sector job	0.331(11.28)***	0.334(11.37)***	0.317(11.14)***
Educational attainment of household head	0.144(15.25)***	0.146(15.44)***	0.151(16.65)***
Number of observations	2611	2611	2927
R-squared	0.37	0.37	0.37
F-statistic	129.59	171.26	195.15

Source: Computed by author using 2007 survey data and STATA 9.2
Notes: (·) implies *t*-ratios. ***, ** and * indicate 1%, 5% and 10% levels of significance, respectively.

Table 7b: Instrumental variable estimation of social capital and household poverty-dependent variable: well-being (log of household per capita expenditures)

Variables	(1) 1st stage SCI_1	(2) 2SLS	(3)1st stage SCI_2	(4)2SLS
Intercept	-6.01(8.48)*	12.36(10.15)***	-8.86(7.51)***	12.47(19.3)***
Social capital index SCI_1		0.025(2.09)**		
SCI_2				0.018(2.31)**
Age of household head	0.620(3.01)***	-0.008(-1.52)	0.617(3.33)***	-0.009(-1.60)*
Squared age of household head	-0.005(-2.88)**	0.0001(2.09)*	-0.005(3.17)***	0.0001(2.19)*
Sex of household head	-3.35(-3.36)***	0.049(1.54)	-3.91(-4.38)***	0.067(1.76)*
Household size	0.362(1.76)*	-0.126(-28.97)**	0.342(1.81)*	-0.126(-29.76)***
Urban milieu of resident	-3.02(-3.28)***	0.379(13.0***	-3.08(-3.70)***	0.383(13.04)***

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Table 7b Continued

Variables	(1) 1st stage SCI_1	(2) 2SLS	(3)1st stage SCI_2	(4)2SLS
Household cultivated 0.006(1.67)	0.424(4.45)***	0.005(1.33)	0.335(3.92)***	
Formal sector job 0.284(9.30)***	2.05(1.58)	0.289(9.69)***	2.20(1.86)*	
Educational 0.089(4.12)*** attainment of household head	2.85(6.92)***	0.086(3.53)***	2.52(6.77)***	
Instrument 1	3.27(3.16)***		2.98(4.08)***	
Instrument 2	-2.96(-4.73)***		-2.15(3.89)***	
Number of observations	2470	2470	2779	2779
R-squared	0.16	0.38	0.17	0.38
Instrumental variables diagnostics				
F-test for the significance of the instrument in the first stage	15.18***		16.51***	
Under-identification tests (Anderson canon. corr. LR statistic Chi-sq(2) [p-value]	10.21(0.044)		10.67(0.044)	
Test of over-identifying restrictions: Chi-sq(1) [p-value]	2.41(0.280)		2.32(0.261)	
Durbin-Wu-Hausman 5.40(0.020) test for exogeneity of education Chi-sq [p-value]		4.91(0.026)		

Source: Computed by author using the 2007 Cameroon Household Survey and STATA 9.2
Notes: (·) implies *t*-ratios. ***, ** and * indicate 1%, 5% and 10% levels of significance, respectively.
Instruments:
(i) The level of satisfaction of individuals belonging to associations at the village or community level.
(ii) The second measure is an indicator of whether a household member had been a victim of physical violence in the village in the 12 months prior to the survey.

The Anderson canonical correlations likelihood ratio test, and the Sargan test of over-identifying restrictions, indicate that the model is identified and that the instruments are valid and have the expected signs, respectively. Note also that the two F-statistics testing the hypothesis that the coefficient on the instruments are all zero in the two first-stage estimates are well above the threshold of 10 indicated by Stock and Staiger (1997), as the rule of thumb criteria to establish instrument weakness (Table 7b). We also added the two variables (instruments) to the main equation and found that none were significant (results not reported). Therefore, they meet the first criterion for being a valid instrument, namely not affecting household welfare. Therefore, for this sample, IV regression will provide consistent estimates of the parameters in the income model.

Evident from the table is the slight improvement in the adjusted R^2 from 0.37 to 0.38, compared with the use of the actual social capital index. Further, in all cases, the instrumental variables method leads to higher coefficients (ranging from 0.018 to 0.025) for the social capital index than in the OLS model (where it was 0.003). A reverse causality could have been accepted if there is no improvement or reduction in R^2, as well as reduction/lack of improvement in the instrumented variable. Since there is improvement on both counts, one can infer the absence of significant reverse causality and thus confirms the exogeneity of social capital. A one unit increase in the level of instrumented social capital leads to a 2% increase in per capita expenditure of households. This is magnified increase in percentage point far higher than the value recorded for the OLS estimation (0.3%).

Effects of social capital on child schooling

This section focuses on the empirical results of the effect of household social capital on child schooling. A probit model is used to model the relationships between the dependent variable (enrolment) and a set of independent variables, including household social capital presumed to affect the schooling decision made by a household head. Estimates of children enrolment using probit and IV probit are presented in Table 8a and Table 8b, respectively. We have limited our attention to the model, which uses a single social capital index in order to avoid the difficulty involved in getting valid instruments. We argue that trust in government is conceptually a suitable instrument for social capital. Nevertheless, validity of the instrumental variables method depends on the test of exogeneity of the social capital measures indicated by the Wald test[11] (i.e., is the social capital actually endogenous?).

As observed in Table 8b, the Wald test of exogeneity is accepted, indicating that household social capital is not endogenous with child schooling. This is obvious as the author did not take into account all household members in the calculation of social capital. It is likely that the "social capital" of youngsters is endogenous with children schooling. Though social capital is exogenous here, note that the two F-statistics of Table 8b in columns one and three testing the hypothesis that the coefficient on the instrument is zero in the two first-stage estimates are fulfilled, an indication that the instruments are valid. We therefore present the results based on the probit estimates (Table 8a).

In the first column, the results reveal that, with the exception of social support, a disaggregation of social capital shows that the probability of a child being enrolled are traceable to membership of households in associations, active participation in decision making, and labour contributions made in associations. Secondly, in column (2), merging together all dimensions of social capital (social support inclusive) facilitates collective coordination and cooperation towards a mutual benefit that could be translated into parental decisions to invest in a child's education.

Table 8a: Probit estimates of social capital and child schooling

Variables	(1)	(2)	(3)
Intercept	0.906(4.56)***	1.12(7.83)***	1.17(8.81)***

Social capital dimensions	
Density of membership	0.213(1.72)*

continued next page

Table 8a Continued

Variables	(1)	(2)	(3)
Participation in decision making	0.001((1.68)*		
Social support	-0.001(-0.45)		
Labour contribution	0.013(1.95)*		
Social capital index			
SCI_1		0.003(2.20)**	
SCI_2			
0.002(1.10)			
Age of child	-0.032(-3.26)***	-0.032(-3.22)***	-0.032(-3.16)***
Child sex	0.052(0.87)	0.046(0.78)	
0.058(1.03)			
Under 5	-0.101(-3.39)***	-0.106(-3.55)***	-0.110(-3.88)***
Adults	0.098(3.24)***	0.102(3.33)***	
0.097(3.72)***			
Urban milieu of resident	0.116(1.94)*	0.116(1.97)*	
0.123(2.16)**			
School cost	0.072(3.11)***	0.073(3.18)***	
0.071(3.31)***			
Squared school cost	0.0001(-3.11)***	.00001(-3.10)***	
0.00001(3.31)***			
Asset	-0.00003(-0.71)	-0.00003(-0.64)	-0.00001(-0.34)
Father's education	0.049(1.04)	0.048(1.03)	
0.051(1.14)			
Mother's education	0.207(3.96)***	0.218(4.18)***	
0.193(3.72)***			
Number of observations	4870	5277	5277
Wald $chi^2(14)$	130.48	124.50	128.92
Prob > chi^2	0.000	0.000	0.000
Log pseudo likelihood	-985.70	-989.31	-1116.47
Pseudo R^2	0.072	0.069	0.064

Source: Computed by the author using the 2007 Cameroon Household Survey data and STATA 9.2
Notes: (·) implies *z-values* or t-ratios. ***, ** and * indicate 1%, 5% and 10% levels of significance, respectively.

In column three of Table 8a, social support is removed from the aggregate social capital index based on PCA. This does appreciably alter the results of the multiplicative social capital or aggregate index, as the effect becomes insignificant.

Table 8b: Instrumental variable probit of social capital and child schooling

Variables	(1) 1st stageSCI_1	(2) 2SLS	(3)1st stageSCI_2	(4)2SLS
Intercept	19.39 (6.26)***	1.01 (2.41)**	17.93 (6.31)***	1.07 (2.75)**
Social capital index				
SCI_1		-0.005(-0.17)		

SCI_2				-0.007(-0.25)
Age of child	0.135 (1.05)	-0.028(-2.54)**	0.151(1.27)	-0.027(-2.51)*
Child sex	-0.580 (-0.61)	0.105(1.35)	-0.446(-0.51)	0.111(1.50)
Under 5	-0.126(-0.25)	-0.124(3.17)***	0.043(0.09)	-0.129(-3.47)***
Adults	1.36(3.61)***	0.074(1.41)	1.35(3.91)***	0.072(1.40)
Urban milieu of resident	-6.13(-5.88)***	0.053(0.26)	-5.94(-6.20)***	0.057(0.29)
School cost	0.019(0.20)	0.07(3.97)***	-0.002(-0.03)	0.068(4.10)***
Squared school cost	-0.00001(-0.05)	-0.0001(2.86)***	0.00002(0.17)	-0.0001(-2.94)**
Asset	0.001(2.43)**	0.086(3.53)***	0.001(1.87)**	-0.00003(-0.56)
Father's education	2.74(3.67)***	-0.027(-0.26)	2.77(4.10)***	-0.024(-0.24)

continued next page

Table 8b Continued

Variables	(1) 1st stageSCI_1	(2) 2SLS	(3)1st stageSCI_2	(4)2SLS
Mother's education	1.09(1.30)	0.265(3.35)***	0.598(0.76)	0.239(3.45)***
Instrument	-3.06 (3.16)***		-3.98(3.78)***	
Number of observations	2945	2945	3001	3001
Wald $chi^2(11)$		66	0.17	71.37
Prob > chi^2				
Log pseudo likelihood				
Pseudo R^2				
R-squared	0.05		0.05	
Instrumental variable diagnostics				
F-test for the significance of the instrument in the first stage	10.89***		12.51***	
Wald test of exogeneity Chi-sq [p-value]		0.06(0.80)		0.08(0.78)

Source: Computed by the author using the 2007 Cameroon Household Survey data and STATA 9.2
Notes: (·) implies *z-values* or t-ratios ***, ** and * indicate 1%, 5% and 10% levels of significance, respectively.
Instrument: average level of trust in government.

By further basing our discussion of the results on the probit estimates, the estimated coefficient of age (always negative) is also very significant. This indicates that as age

increases, the tendency of being currently in primary or secondary schools, compared with never been in school, decreases significantly. The analysis also showed that, overall, the price or cost of schooling has a significant effect on the decisions to enrol. This is explained by the fact that much resource of the households has to be given up in order to make them available to pay for education inputs, including fees, uniform, transport and other related expenses. As this cost increases, the decision to enrol a child in school is reversed. We also found that the probability of a child being enrolled is higher in urban areas relative to rural areas.

Lastly, another factor that predicts children's schooling is the parental level of education, more importantly the spouse's level of education. Improvements in the education of mothers raise the schooling of children more than the education of fathers. It is also observed that children in urban residential areas are more likely to be enrolled than rural children. The presence of younger children relative to adults in a household is another predictor of children enrolment, with the tendency that children in households with many elder persons are more likely to be enrolled as opposed to households with younger siblings.

Effects of social capital on labour force participation

Table 9a and Table 9b report the univariate probit estimates of the determinants of labour force participation. A binary variable for social capital is derived from the participation (or not) to five social activities or groups. The correlation coefficient between social capital and labour force participation indicates that individuals involved in social activities have a higher tendency to be in the labour market. It could be argued that what is required of an individual to operate in the labour market is information related to employment opportunities, and being a network member enables one to benefit from such valuable labour market information flow. Thus, being a group member or having personal relationships with those who matter in society is positively associated with the likelihood of being employed.

Table 9a: Probit estimates of social capital and labour force participation

Variables	(1)	(2)
Intercept	-4.15 (-7.77)***	-3.62(-27.15)***
Social capital dimensions		
Education/health and training service groups	1.14(2.49)**	
Production/development and employment groups	1.06(2.33)**	
Social and cultural groups	1.08(2.37)**	
Protection of the environment and citizens' rights groups	1.04(2.07)**	
NGO/civic groups	0.817(1.43)	
Other groups	0.958(2.07)**	
Group membership		0.516(19.73)***
Age of individual	0.244(15.59)***	0.227(31.39)***
Squared age	-0.002(-14.45)***	-0.002(-27.34)***
Female individual	-0.784(-16.62)***	-0.737(-33.10)***

Under 5	-0.005(-1.31)	-0.001(-0.68)
Adults	0.002(1.66)*	0.003(0.54)
Urban milieu of resident	-0.121(-2.46)**	0.039(1.70)*
Reservation wage	-0.00002(-0.97)	-0.0005(-5.43)***
Primary school education	0.024(0.29)	0.285(9.49)***
Secondary school education	-0.087(-1.03)	0.115(3.77)***
Post-secondary school education	-0.316(-2.94)***	-0.279(-5.86)***
Number of observations	6490	20004
Log likelihood	-1997.07	9369
Prob > chi^2	0.000	0.000
LR chi2	648.48	4249.85
Pseudo R^2	0.14	0.18

Source: Computed by the author using the 2007 Cameroon Household Survey data and STATA 9.2
Notes: (·) implies *z-values*. ***, ** and * indicate 1%, 5% and 10% levels of significance, respectively.

It should be noted that we included unemployed individuals, who are seeking for jobs in the analysis contrary to other studies that exclude the unemployed as well as under-employed in analysing the relationship between social capital and labour market operation. We based our approach on the arguments of Aguilera (2002). In the words of Aguilera, before workers can earn wages, they must enter the labour market by getting a job. Other groups suffer from persistent underemployment and have difficulty garnering wealth and jobs offering employment benefits. Aguilera (2002) illustrates that the unemployed and underemployed can utilize social networks to gather information that can lead to employment and increased labour force participation.

Table 9b: Instrumental variable probit of social capital and labour force participation

Variables	Social capital (group membership) equation (1)	Labour force participation equation (2)
Intercept	-3.65(-27.08)***	-3.05(-7.64)***
Group membership		1.01(3.81)***
Age of individual	0.164(24.05)***	
		0.196((9.00)***
Squared age	-0.001(-18.87)**	-0.002(-9.61)***
Female individual	-0.126(-6.42)***	
		-0.701(18.50)***
Under 5	0.003(2.30)**	-0.001(-1.00)
Adults	-0.001(-2.03)**	
		0.0005(0.84)
Urban milieu of resident	0.049(2.29)**	
		0.029(1.24)
Reservation wage	-0.00001(-1.02)	-0.00004(-5.20)***
Primary school education	0.845(27.60)***	
		0.157(1.89)*
Secondary school education	0.965(30.56)***	-0.025(-0.30)

Post-secondary school education	1.10(24.41)***	-0.436(-4.48)***
Instrument	-2.08(-5.03)***	
Number of observations	20004	
Wald chi^2	7007.6	
Prob > chi^2	0.000	
Log likelihood	-20487.9	
Instrumental variable diagnostics		
rho	-0.306(0.092)*	
LR test : Chi^2 (p-val.)	2.81(0.093)*	

Source: Computed by author using 2007 survey data and STATA 9.2
Notes: (·) implies *z-values*. ***, ** and * indicate 1%, 5% and 10% levels of significance, respectively.
Instrument: proportion of foreigners living in the community.

Apart from social capital, there are other factors that influence labour force participation, as discussed in the analytical framework. Age is a very powerful predictor in the decline of labour market status, with elderly persons less likely to be in the job market and employment relative to younger persons and, ceteris paribus, respondents with higher levels of reservation wage report lower levels of labour force participation. With fewer younger children to take care of, and more adults in the household, individuals are able to participate in labour market activities, given the relevant enabling environment. However, the presence of children as well as adults appear not to matter as far as labour participation is concerned, but that females are less likely to be in the labour force and employment. The human capital variables (i.e., primary and post-secondary education) are seen to be very significant in determining labour market participation.

The influence of the previous covariates in the IV probit model (Table 9b, column 2) remains comparable with the univariate probit estimates of Table 9a. The same covariates are simultaneously associated with labour force participation and social capital. The only noticeable difference in the two tables deals with the value of social capital (group membership) coefficient. Correction for omitted variables bias seems to increase its value from 0.516 to 1.01. In other words, taking part in social activities could have a more powerful impact on the likelihood of participating in the labour market than one would think, based on univariate analysis.

Gaining confidence in the idea that the effect of social capital on labour force participation is causal first requires that social capital is endogeneous. As detailed in the methodology section, a likelihood ratio, LR, test compares the bivariate and univariate log likelihoods of the two equations in bi-probit models and provides information on the significance level of the coefficient of correlation (rho) between the residuals. In our case, the Chi^2 statistic (2.81; $p<0.01$) supports the hypothesis that social capital is endogenous. Lastly, concerning the tests for instruments validity, by and large, the proportion of foreigners living in a community is a valid instrument for the model specifications. As observed in the first column of Table 9a, this variable affects group membership, and in a labour force participation model (result not reported) the exclusion restrictions is satisfied, as the coefficient of this instrument is insignificant.

7. Conclusion and implications

Cameroon could be considered to have some basic features of social capital as it is characterized by a number of distinct local institutions. We found six broad categories of local associations, with the most important being the social and cultural groups followed by production or development groups. On average, households

belong to at least a group and association.

In this paper, we investigated empirically how poor people's welfare could be linked to their participation in formal and informal institutions. That is, we have determined the impact of household level social capital on household income and child's school status, and also explored the social capital-labour market participation nexus. The number of memberships, active participation in decision making, solidarity or network support and labour contribution score were the key dimensions of social capital used. The data for the analysis is the 2007 Cameroon Household Survey.

After instrumentation to control for the possible endogeneity of social capital, we found that the direct effect of social capital on welfare outweighs the reverse effect in the explanation of the correlation between household income and individual labour force participation. However, we did not find any possibility of a reverse causality between child's school status and household social capital. The study concludes that social capital has a positive influence on welfare, and is an important factor in improving the standard of living of members of local institutions and their households. Thus, there is significant evidence to suggest that policy makers interested in improving household well-being in terms of increasing household income, children access to schooling, and labour market participation, respectively, should be advised to consider promoting social capital as one relevant means to achieve these objectives.

Our findings support a policy by donors and governments to invest in social

capital —either directly or by creating an environment friendly to the emergence of local associations. The positive impact of household social capital variables on children enrolment has a direct implication for social work practice and social welfare policy. Parents are able to gather enormous resources from the relation they have with other parents to promote investments in the schooling of their children. Further, the development of children's school status in terms of academic achievements, which is not tested in the present study, could be enhanced. This may be achieved by the presence of Parent-Teacher Associations (PTAs) and other means of enhancing parental involvement in the school, i.e. teaching assistants and other aids. Lastly, our analysis provides that social capital dimension in terms of group membership is generally positively related with labour market participation. Labour market participation is expressed as employed persons and unemployed individuals who are seeking for jobs. Individuals can utilize social networks to gather information that can lead them to employment and increased labour force participation.

Thus, generally, our analysis suggests that policy makers interested in improving the living conditions of households may be advised to consider promoting social capital as one relevant ingredient to achieve the Millennium Development Goals of reducing poverty by half. It should be recalled that the literature on social capital has hypothesized that social capital affects household welfare through (at least) three mechanisms: Sharing of information among association members, reduction of opportunistic behaviour, and improved collective decision making. These functions are considered as part of the mandate of many local organizations.

The empirical studies, which supported such theoretical and conceptual developments, provide evidence that a wide range of individual and aggregated measures of social capital are correlated with household income and children schooling outcomes. Although existing research has reconciled such analysis, one of the core issues in the modelling of social capital is still pending. Further research should focus on exploring the issue of endogeneity of the impact of social capital at individual level, as we did for the labour market outcome. Instruments at the aggregated scale may bias the results. This helps unfold the direct pathway of influence of social capital.

Notes

1. In Cameroon, for instance, based on the 1983, 1996, 2001 and 2007 household surveys, poverty affected an estimated 53.3% in 1996 (up from 40% in 1983/84), 39.9% in 2007 (down from 40.2% in 2001) of Cameroonians, respectively. With a solid macroeconomic performance or growth, the poverty rate declined by about 13 percentage points over

the period 1995-2007. However, between 1996 and 2001, the decline in poverty was not followed by any narrowing of inequalities, though the latter dropped mildly between 2001 and 2007 (Tabi., 2003; National Institute of Statistics, 2008). It would appear poverty moved closely to the level of growth or economic progress.

2. A somewhat narrow approach to poverty has however long proven insufficient to address current challenges especially in the field of development policies. Instead poverty is to an increasing extent understood as a container for additional forms of non-monetary deprivation such as lack of education, insufficient health care, malnourishment or dying from avoidable diseases, etc. As a result, both the conceptualization as well as the fight against poverty becomes multidimensional. This trend is for example reflected in the Millennium Development Goals (MDGs) which provide guidelines for a broad field of development targets.

3. The period was characterized by a combination of social tension in the post-1984 coup period, and the introduction of press freedom and multiparty politics in 1990. These social events, combined with appreciating exchange rate and other external shocks (e.g., the fluctuations of international price of primary agricultural and mineral products), led to unprecedented collapse in growth.

4. Mayoux (2001) identifies some forms of indigenous social capital in Cameroon peculiar to West Africa. These are: tontines/njangi, money tontines/njangi or rotating savings and credit associations and family meetings. The features of these associations, depending on the case include: Working for cash and/or in rotation on the farmland of each other; contribution of regular amounts with each member taking turns to receive the contribution of the whole group, thus getting a lumpsum from the small contributions; contribute more than this regular amount into a savings fund, which is then loaned out to others at interest; reserving a portion of the savings in a fund that members may access for serious health problems or funerals (sometimes interest free); solidarity, including birth and death celebrations, revolving loans, savings, etc.

5. Community participation here takes the form of purchase of supplies in schools, voluntary follow-up of students' work, and financial contributions or commitments, etc (Tabi, 2009).

6. The household is also faced with two constraints, firstly of scarcity of education resources and, secondly, owing to other competing basic needs for household income, including expenditure on food, health, clothing and water, among others. Under such constraints, tuition-free schooling would be attractive to such a household.

7. We exclude those who report being inactive on the labour market, or who are unemployed but have not looked for a job prior to the survey. Excluding these individuals is in line with the usual definition of the labour force, which counts as unemployed only those who have actively looked for employment. We also remove unpaid trainees, who can be assimilated to students, and those who report attending school full time.

8. Principal or factor component is a linear combination of all variables. Either case is a multivariate statistical technique used to reduce the number of variables in a data set into a

smaller number of "dimensions". In mathematical terms, from an initial set of *n* correlated variables, principal component analysis creates uncorrelated indexes or components, where each component is a linear weighted combination of the initial variables. For example, from a set of variables X_1 through to X_n:

$$PC_1 = \alpha_{11} X_1 + \alpha_{12} X_2 + ... + a_{1n} X_n$$

$$PC_m = \alpha_{m1} X_1 + \alpha_{m2} X_2 + ... + a_{mm} X_n$$

The weights for each principal component are given by the eigenvectors of the correlation matrix, or if the original data were standardized, the co-variance matrix. The components are ordered so that the first component (PC1) explains the largest possible amount of variation in the original data, subject to the constraint that the sum of the squared weights ($a^2_{11}+a^2_{12}+....+a^2_{1n}$) is equal to one (Seema and Kumaranayake, 2006).

9. As a response to the lack of consensus on how to define social capital and recent doubts as to whether social capital can be treated as a unitary concept following groundbreaking work in which Putnam (1993) defined social capital as a combination of trust, norms and networks, Bjørnskov (2006) used principal components analysis to show that the three elements are in fact manifestations of three distinct phenomena.

10. The basic reduced-form model of household welfare, excluding any social capital variables, explains 33% of the variance in household welfare (result not reported).

11. In an IV regression, the residuals of the first stage probit regressions are included as regressors. The Wald test is a test of significance on those residuals' coefficients. If the chi-square value is significant, then social capital measures are jointly endogenous, and IV method is required and preferred, otherwise probit estimates of the function will be more consistent (see Greene, 2008 for details).

References

Adeyeye, V. 2004. "Impact of village level social capital on poverty in South Western Nigeria". Final Report, AERC Nairobi.

Aguilera, M.B. 1999. "The labour market outcomes of undocumented and documented immigrants: A social and human capital comparison." *PhD dissertation.* Stony Brook, New York: Department of Sociology, SUNY, Stony Brook.

Aguilera, M.B. 2002. "The impact of social capital on labour force participation: Evidence from

the 2000 social capital benchmark survey". *Social Science Quarterly,* 83 (3).
Aguilera, M.B. and D.S. Massey. 2003. "Social capital and the wages of Mexican migrants: New hypotheses and tests". *Social Forces*, 82(2).
Bain, K. and N. Hicks. 1998. "Building social capital and reaching out to excluded groups: The challenge of partnerships." Paper presented at CELAM meeting on *The Struggle against Poverty towards the Turn of the Millennium.* Washington DC.
Bebbington, A. 1997. "Social Capital and Rural Intensification: Local Organizations and Islands of Sustainability in the Rural Andes". *Geographical Journal,* 163(2):189-97.
Bebbington, A. and T. Carroll. 2000. "Induced social capital and federations of the rural poor". In Grootaert, Christian and van Bastelaer, Thierry, eds. *The role of social Capital in Development (An Empirical Assessment).* Cambridge: Cambridge University Press: 234-278.
Becker, G. 1965. "A theory of allocation of time", *Economic Journal*, 75: 493-517.
Becker, G.. 1981. *A treatise on the family*. Cambridge, MA: Harvard University Press.
Berger, M. and J. Leigh. 1989. "Schooling, self-selection, and health". *Journal of Human Resources*, 24:433-55.
Bjørnskov, C. 2006. "The multiple facets of social capital". *European Journal of Political Economy,* 22(2006):22-40.
Bridges, W.P. and W.J. Villemez. 1986. "Informal hiring and income in the labour market". *American Sociological Review,* 51:574-82.
Burt, R. 2000. "The network structure of social capital." In R. Sutton and B. Staw, eds. *Research in Organizational Behaviour*. Greenwich, CT: JAI Press.
Caspi, A., B.R. Wright, T.E. Moffitt, and P.A. Silva. 1998. "Early failure in the labour market: Childhood and adolescent predictors of unemployment in the transition to adulthood". *American Sociological Review,* 63:424-51.
Coleman, J. 1988. "Social capital in the creation of human capital". *American Journal of Sociology*, 94 (Supplement).
Coleman, J. 1990. *The foundation of social theory*. Cambridge: Harvard University Press.
Concoran, M.L., L. Datcher and G.J. Duncan. 1974. "Information and influence networks in labour markets". In G.J. Duncan and J.N. Morgan, eds. *Five thousand American families: Patterns of economic progress*. Ann Arbot, Mich.: Institute for Social Research.
Chia-Hsin Hu and Ben Jones. 2004. "An Investigation into the relationship between household welfare and social capital in Eastern Uganda". Strategies and Analysis for Growth and Access (SAGA) Working Paper.
Davidson, R. and J. G. MacKinnon. 1993. "Estimation and inference in econometrics". New York: Oxford University Press.
Donato, K.M., J. Durand and D.S. Massey. 1992. "Changing conditions in the US labour market: Effects of the Immigration Reform and Control Act of 1986". *Population Research and Policy Review,* 11:93-115.
Durlauf, S. 2002. "On the empirics of social capital." *Economic Journal,* 112(483):459-79.
ERNWACA. 2002. Transnational view of basic education: Issues of access, quality and community participation in West and Central Africa, Educational Research Network for West and Central Africa (ERNWACA) January .
Ferguson K.M. 2006. "Social capital predictors of children's school status in Mexico". *International Journal of Social Welfare,* 15:321-331.
Government of Cameroon. 2003. *The poverty reduction strategy paper.* Ministry of Planning, Programming and Regional Development.
Government of Cameroon. 2009. *Growth and employment strategy paper: Reference framework for government action over the period 2010-2020.* Ministry of Planning, Programming and Regional Development.

Greene, W.H. 2008. *Econometric analysis* (6th International Edition). New Jersey: Pearson Education.

Greenwell, L., R. B. Valdez and J. DaVanzo. 1997. "Social ties, wages, and gender in a study of Salvadorean and Pilipino immigrants in Los Angeles". *Social Science Quarterly,* 78:559-77.

Gronau, R. 1977. "Leisure, home production and work: The theory of the allocation of time revisited". *Journal of Political Economy*, 85:1099-1123.

Grootaert, C. 1997. "Social capital: The missing link?" In *Expanding the measure of wealth indicators of environmentally sustainable Development*. Washington DC: World Bank.

Grootaert, C. 1999. "Social capital, household welfare, and poverty in Indonesia". World Bank Policy Research Working Papers WPS2148, Washington DC: World Bank.

Grootaert, C. 2001. "Does social capital help the poor? A synthesis of findings from the local level institutions studies in Bolivia, Burkina Faso, and Indonesia''. Local Level Institutions Working Paper 10. World Bank, Social Development Department, Washington DC.

Grootaert, C. and D. Narayan. 2004. "Local institutions, poverty and household welfare in Bolivia". *World Development,* 32(7):1179-98.

Grootaert, C, O. Gi-Taik and S. Anand. 2002. "Social capital, education and credit markets: Empirical evidence from Burkina Faso". In J. Isham, T. Kelly and S. Ramaswamy, eds. *Social capital and economic development: Well-being in developing countries*. Cheltenham, UK: Edward Elgar, pp. 85-103.

Grootaert C., D. Narayan, V. Nyhan Jones and M. Woolcock. 2004. "Measuring social capital: An integrated questionnaire". World Bank Working Paper No. 18.

Grootaert, C. and T. van Bastelaer, eds. 2002. "Understanding and measuring social capital: A multidisciplinary tool for practitioners". Washington DC: World Bank.

Grossman, M. 1972. "On the concept of health capital and the demand for health." *The Journal of Political Economy,* 80:223-55.

Haddad, L. and J.A. Maluccio. 2003. "Trust, membership in groups, and household welfare: Evidence from KwaZulu-Natal". *Economic Development and Cultural Change*, 51(3):573-601.

Hagan, J. M. 1994. *Deciding to be legal: A Maya community in Houston, Philadelphia.* Penn: Temple University Press

Halpern, D. 1999. "Social capital: The new golden goose". Faculty of Social and Political Sciences, Cambridge University. Unpublished review.

Hanifan, L.J. 1916. "The rural school community centre". *Annals of the American Academy of Political and Social Sciences*, 67:130-38.

Haveman R. and B. Wolfe. 1995. "The determinants of children attainments: A review of methods and findings". *Journal of Economic Literature*, 33: 1829-78.

Heckman, J. 1978. "A partial survey of recent research on the labor supply of women". *American Economic Review*, 68:200-207.

Holzer, H.J. 1996. "What employers want: Job prospects for less-educated workers". New York: Russell Sage.

Homans, G. 1961. *Social behaviour: Its elementary forms*. New York: Harcourt, Brace and World.

Horvat, E.M., B. Elliot and A.L. Weininger. 2003. "From social ties to social capital: Class differences in the relations between schools and parent networks". *American Educational Research Journal*, 40(2):319-351.

Israel G.D. L.J. Beaulieu and G. Hartless. 2001. "The Influence of family and community social capital on educational achievement". *Rural Sociology*, 66 (1).

Jacoby, H. G.. 1994. "Borrowing constraints and progress through school: Evidence from Peru". *Review of Economics and Statistics*, 76 (1).

Killingsworth, M. 1983. *Labour supply*. Cambridge: Cambridge University Press.

Kobou, G., D. Njinkeu and B.P. Fosso. 2008. "The political economy of Cameroon's post-independence growth experience". In B. J. Ndulu, S.A. O'Connell, J.P., Azam, R.H. Bates, A. K. Fosu, J. W. Gunning and D. Njinkeu, eds. *The political economy of economic growth in*

Africa, 1960-2000, volume 2: Country Case Studies, Cambridge: Cambridge University Press.
Koura D. 2001. "L'influence des facteurs familiaux, scolaires et individuels sur l'abandon scolaire des filles en milieu rural, de la région de Ségou (Mali)" Thèse de Doctorat (Ph.D.) Université de Montréal, Spécialité Sciences de l'Education. http://www.bcltechnologies.com/allpdf/
Lillard, L. and M. R. Kilburn. 1995. "Intergenerational earnings linkages: Sons and daughters in Malaysia", Rand Report No. DRU-1125-NIA.
Maluccio, J., L. Haddad and J. May. 2000. "Social capital and household welfare in South Africa, 1993-98". *Journal of Development Studies,* 36 (6).
Marsden, P.V. 1990. "Network data and measurement". *Annual Review of Sociology,* 16:435-63.
Mayoux, L. 2001. "Tackling the downside: Social capital, women empowerment and micro-finance in Cameroon", *Development and Change*, Vol. 32, pp. 435-64.
McPherson M., Smith-Lovin L., Cook J.M. 2001. "Birds of a feather: Homophily in social networks", *Annual Review of Sociology*, 27:415-44.
Meier, A. 1999. "Social capital and school achievement among adolescents, CDE". Working Paper No. 99-18, University of Wisconsin-Maddison.
Mier, R. and R. Giloth. 1986. "Hispanic employment opportunities: A case of internal labor markets and weak-tied social networks". *Social Science Quarterly,* 66:297-309.
Miller, P.W. and P.A. Volker. 1983. "A cross-section analysis of the labour force participation of married women in Australia". *Economic Record*, 59(1): 28-42.
Mincer, J. 1974. "Schooling, experience and earnings". New York: National Bureau of Economics Research.
Moore, G. 1990. "Structural determinants of men's personal networks". *American Sociological Review,* 55:726-35.
Montgomery, J.D. 1992. "Job search and network composition: Implications of the strengh-of-weak-ties hypothesis". *American Sociological Review,* 57:586-96.
Mouw, T. 2006. "Estimating the causal effect of social capital: A review of recent research". *Annual Review of Sociology,* 32:79-102.
Mouw, T. 1999. "Social networks and job search: Do contacts matter?" Conference paper presented at the 1999 American Sociological Association 94th annual meeting, Chicago, III.
Narayan, D. and Pritchett. 1999. "Cents and sociability: Household income and social capital in rural Tanzania". *Economic Development and Change*, 47 (4).
National Institute of Statistics. 2008. "Trends, profiles and determinants of poverty in Cameroon in 2007: Fact sheet". Ministry of the Economy, Planning and Regional Development. Yaoundé.
N'jie, M., A. Loum, Y. Benet. 2002. "Study of parent-teacher associations at lower basic bchools in the Gambia". Study for Department of State for Education and ACTION AID. In ERNWACA, Educational Research Network for West and Central Africa, Banjul, Gambia.
North, D. 1990. *Institutions, institutional change, and economic performance.* New York: Cambridge University Press.
Okunmadewa, F. Y., S.A. Yusuf and B.T. Omonona. 2007. "Effects of social capital on rural poverty in Nigeria". *Pakistan Journal of Social Sciences* 4(3): 331-39.
Olson, M. 1982. *The rise and decline of nations: Economic growth, stagflation and social rigidities.* New Haven: Yale University Press.
Odia, N., Y.F. Ebene, A. Justine and J. Tegnerowicz. 2006. "Religion, Capital Social et réduction de la pauvreté au Cameroun: Le cas de la Ville de Yaoundé." *Munich Personal RePEc Archive (MPRA) Paper No. 166,*
Phillips, J.A. and D.S. Massey. 1999. "The new labour market: Immigrants and wages after IRCA". *Demography,* 36:233-46.
Portes, A. 1998. "Social capital: Its origins and applications in modern sociology". *Annual Review of Sociology*, 24:1-24.
Putnam, R. D. 1993. "The prosperous community-social capital and public life". *American Prospect* (13): 35-42.

Putnam, R.D. 1995. "Tuning in, tuning out: The strange disappearance of social capital in America". *Political Science and Politics,* 28: 664-83.

Putnam, R.D. 2000. *Bowling alone: The collapse and revival of American community.* New York: Simon and Schuster

Rosen S. and P. Taubman. 1982. "Some socioeconomic determinants of mortality". In J. Van der Gagg, W.B. Neeman and T. Tsukahara, eds. *Economics of health care: 1982.* New York: Preager Publishers.

Rosenfeld R., S.F. Messner and E. P. Baumer. 2001. "Social capital and homicide." *Social Forces, 80*:283-309.

Rose, D.R. and T.R. Clear. 1998. "Incarceration, social capital, and crime: Implications for social disorganization theory". *Criminology*, 36(1), 441-79.

Ross, R. 1986. "Analysis of the 1980 Sydney survey of work patterns of married women: Further results". *Economic Record*, 62(3): 325-37.

Ross, R. 1990. "A probit analysis of the factors influencing labour market success of aborigines in New South Wales". Discussion Paper No. 27. Sydney: Social Policy Research Centre, University of New South Wales.

Rothenberg, T.J. 1983. "Asymptotic properties of some estimators in structural models". In *Studies in econometrics, time series, and multivariate statistics*.

Sangare, S. and I. Diarra. 1997. "Effet de la participation communautaire sur l'accès et la qualité de l'éducation de base : Le cas du Mali". Educational Network for West and Central Africa.

Seeley, J.R., A.R. Sim, E.W. Loosley. 1956. "Crestwood heights: A study of the culture of sub-urban life. New York: Basic Books.

Seeman, T.E. 1996. "Social ties and health: The benefits of social integration". *Annals of Epidemiology,* 6:442-51.

Schultz, T.W. 1960. "Capital formation by education". *Journal of Political Economy,* 68(12):571-583.

Schultz, T.W. 1963. "The economic value of education". New York: Columbia University Press.

Stone, W., M. Gray and J. Hughes. 2003. "Social capital at work: How family, friends and civic ties relate to labour market outcomes". Australian Institute of Family Studies, Research Paper No. 31.

Strauss, J. and D. Thomas. 1995. "Human resources: Empirical modelling of household and family decisions". In ,J. Behrman and T. N. Srinivasan, eds. *Handbook in development economics*, Vol. 3A, Elsevier, Amsterdam.

Tabi, A.J. 2003. "Evaluating the incidence of indirect tax reforms in Cameroon". *African Journal of Economic Policy,* 10 (2).

Tabi, A.J. 2007. "Investigating the causal effect of Household social capital on labour force participation in Cameroon". *African Journal of Economic Policy,* 14(2).

Tabi, A.J. 2009. "Household level social capital in Cameroon and children schooling: A gender analysis". *Journal of Africa Development* (forthcoming).

Taubman, P. 1989. "Role of parental income in educational attainment". *The American Economic Review*, 79: 57-61.

Teachman, J.D., K. Paasch, K. Carver. 1996. "Social capital and dropping out of school early". *Journal of Marriage and the Family,* 58:773-83.

Thomas, D. 1994. "Like father like son, or, like mother like daughter: Parental education and child health". *Journal of Human Resources,* 29 (4): 950-88.

Uphoff, N. 2000. "Understanding social capital: Learning from the analysis and experience of participation". In P. Dasgupta and I. Serageldin, eds, *Social capital: A multifaceted perspective.* Washington DC: World Bank.

Uzzi, B. 1999. "Embeddedness in the making of financial capital: How social relations and networks benefit firms seeking financing". *American Sociological Review,* 64:481-505.

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