THE EFFECT OF SOCIAL CAPITAL, NEIGHBORHOOD CHARACTERITICS AND PEER GROUP LENDING ON THE PERFORMANCE OF THE SMALL-SCALE SELF-EMPLOYED

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1. INTRODUCTION

"Human capital accumulation is a social activity, involving groups of people in a way that has no counterpart in the accumulation of physical capital." [Lucas (1988)]

The promotion of small-scale enterprise has a long history in the context of developing economies. Among member states of the OECD, however, the idea of generating viable self-employment opportunities as an alternative for those unemployed or on social assistance has only recently garnered substantial political support (OECD, 1995). From a Canadian perspective, several factors precipitated this sea change in public policy. During the nineties, federal and provincial preoccupations with deficit reduction caused a retrenchment in traditional areas of social welfare expenditure. Consequently, at a time when there was an increasing need for labour market assistance, the ability of governments to deliver and support such services declined.

More importantly, perhaps, were labour market trends that reinforced "entrepreneurial" public policies. In the past ten years, growing numbers of workers -- whether by desire or by necessity –turned to self-employment as an alternative to paid work.[2] Of the newly self-employed, almost all (90 percent) were independent workers not employing any paid help (i.e., own account self-employed). Only a decade earlier, individual businesses with paid help (i.e., self-employed employers) accounted for a majority (53 percent) of the growth in self-employment. [3]

Given the growing importance of micro-entrepreneurship in Canada, it is not surprising that increased policy attention has been focused on this area. One policy instrument that has recently attracted considerable attention is the provision of micro-finance (loans under $25,000) to credit constrained entrepreneurs.

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[1] The term "small-scale" is a term designed to capture the own-account incorporated/unincorporated self-employed, but later in the text it also encompasses very small employers with less 2 paid employees. It will be used synonymously in the text with other terms such as micro-enterprise and the low income self-employed.

[2] Presently (1998) the self-employed make up 14 percent of the non-agricultural Canadian labour force. This is up from 10 percent in 1981.

[3] Even more dramatic is the case of Ontario, where almost all private-sector employment growth during the 1990s was due to increases in the number of businesses employing no paid help, i.e., own account self-employed (see Table 1 in Appendix 1).

In Canada, micro-credit provision has been implemented largely through arms-length government agencies and non-profit organisations. Interestingly, unlike many new public policy initiatives, micro-finance has received widespread support from rather disparate constituencies.[4] Nevertheless, beliefs in the effectiveness of micro-credit are often based on unfounded expectations about the viability of small-scale self-employment for the unemployed or economically disadvantaged. Understanding the determinants of success for a sample of micro-credit borrowers could therefore provide insights into the factors that influence policy success in these areas.

Such an understanding, however, is complicated by two principle impediments. The unavailability of data on the small-scale self-employed (let alone data on those receiving micro-credit) poses a significant obstacle for anyone interested in evaluating the social and economic benefits arising from micro-credit provision. But data constraints are not unique to Canada. Aronson (1991) -- whose recent examination of self-employment in the US is one the most detailed-- raises the following caveat to prospective researchers in the area: "they must be willing to face severe problems of data availability and ambiguity."

Specifying the determinants of success for the small-scale self-employed raises a second and perhaps more serious complication. Unlike paid employees and firms - where empirical researchers have a long history of human capital and behavioral models from which to draw from – the study of self-employment has no such body of well-developed theory. As noted by Roy (1997) there are profound differences between the self-employed and other "class of worker" categories.[5] These differences render any attempt to draw inferences from the labour market success of paid workers inappropriate and potentially very misleading.

In a similar fashion, managerial and economic theories of the firm as well as analyses of industrial relations systems are all are equally unsuited to the study of self-employment success, precisely because the study of firm or industrial behavior involves an analysis of groups of workers and managers. Hence, for these theories to make sense, an employment relationship between two or more parties has to exist. The small-scale

[4] The fact that non-profit organizations and arms-length agencies are the major providers of micro-credit is viewed favorably by neo-liberal interests who prefer minimal government intrusion in the economy. Progressive forces also favor such schemes because borrowers are offered an alternative to private banking institutions in acquiring credit.

[5] In Roy's (1997: 1) words "The vast majority of own-account self-employed workers…participate actively in the productive work of their small business, while the same cannot be said of [employers and employees]. Own account self-employed workers therefore only depend on themselves to produce value."

self-employed work (predominantly) for and by themselves. Hence, the working relationships that they encounter do not occur within a formal organizational structure, rather relationships form externally with a community a customers, suppliers and other local small-scale competitors.

Given the dearth of both available data and theoretical knowledge concerning the social and economic processes that affect the performance of micro-entrepreneurs, there is an increasing need for studies that attempt to model and estimate the determinants of self-employment success. The present paper attempts to fill such a void. It uses a self-designed cross-sectional survey conducted in 1998 in combination with client files for nearly 650 small-scale self-employed individuals living and/or working in Metropolitan Toronto to account for earnings differentials among the small-scale self-employed.

The respondents used in this study are all clients of a non-profit micro-finance organization that provides credit to the self-employed. Thus, all the respondents in this sample are by definition credit constrained entrepreneurs. In more precise terms, the data is used to test the link between self-employment success -- as measured by average net monthly earnings -- and three key explanatory variables that are traditionally not incorporated in estimates of earnings differentials among either paid employees or self-employed workers. These variables include (1) the accumulated social capital that an individual possess (e.g., access to social networks and behavioral norms); (2) the effect of peer group lending; and (3) the characteristics of the neighborhood (e.g., average education levels and urban design) where an individual works and/or resides.

The paper is structured as follows: The next section presents a review of the agglomeration and social capital literatures. Section III establishes an informal theoretical framework that links the agglomeration and social capital literatures to small-scale self-employment success. Section IV describes the data. Section V describes the empirical framework and specifies anticipated relations among the dependent variable (net monthly earnings) and key explanatory measures. Section VI presents the results. Finally, Section VII ends with a few concluding comments and suggests avenues for further research.

II LITERATURE REVIEW

A lengthy literature has recently examined the link between social capital and economic performance. The more widely publicized variant of the social capital literature has shown how regional measures of social capital correlate positively with various indices of economic performance.[6] In a similar fashion, though focusing more of its attention at the micro-economic level, the "agglomeration" and urban economic literatures have examined the channels by which cities generate increasing returns for firms and wage premiums for workers.[7] The present paper argues that these ideas may be of particular relevance for studies aimed at determining the differential outcomes of self-employed individuals living and/or working across, as well as within, urban environments.

To date, no published paper has formally integrated the social capital and agglomeration literatures to account for self-employment success. Similarly, only two recent papers [(Honig, 1998) and (Sanders and Nee, 1996)] have measured social capital at the level of the self-employed individual.[8] Most studies, even those that have focused on individual outcomes, employ singular measures of "social capital". In the case of the "ethnic capital" literature, Borjas (1994) links average characteristics of a persons ethnic group with individual human capital accumulation or labour market earnings.

The agglomeration literature has equally left open the question of how characteristics of neighborhoods within cities -- as opposed to between a city and smaller urban environments -- can differentially affect the labour market performance of small-scale entrepreneurs. The following sub-sections offer a more detailed review of both literatures. A theoretical framework that links the social capital and agglomeration literatures to self-employment success follows the literature review.

What is Social Capital?

As suggested by Coleman (1988) -- the originator of the term -- social capital can be more narrowly defined by its function. Like any other form of capital, it is productive

[6] See Putnam (1995) and Helliwell (1996).

[7] See Glaeser (1998) and Quigly (1998) for useful summaries.

[8] This is perhaps too strong a statement. Certainly the work of economists such as Benabou (1996), Borjas (1995), Durlauf (1994), Montgomery (1991), Glaeser (1998), and sociologists like Coleman (1988) have dealt, rather rigorously, with many of the themes raised in the introduction. However, the present paper, because of its unique focus on small-scale self-employment, deals with rather unique aspects not integrated in these other literatures.

in the sense that it facilitates the completion or attainment of certain objectives. However unlike physical capital which is wholly observable in some physical or quantitative form, social capital is much less tangible because it exists in the relations among persons. In more precise terms, social capital is composed of social resources that provide useful 'capital' for individuals. These resources include: (1) trust within a social structure of which an individual is a member; (2) use of information channels drawn form social relations; (3) an adherence and belief in social norms regarding saving and effort; (4) and the number and strength of formal/informal social ties and networks.

Although often attributed to individuals, other actors (e.g., firms, community groups, and organizations) as well as geographic units (e.g., neighborhoods, regions, and countries) can posses social capital. In this paper, social capital will be treated as a resource available to the self-employed individual and present in neighborhoods where these individuals live and/or work.

Social Capital and Economic Performance

Although fashioned much earlier as a sociological concept by Coleman (1988), social capital and its affect on economic performance has recently received much closer attention from economists and political scientists. Studies by Helliwell (1996), Putnam (1995) and Fukuyama (1995) have examined the macro-economic effects of differential levels of trust (their primary measure of social capital) on regional measures of economic performance. The results generally support the notion that greater social capital translates into improved economic performance. The studies, however, leave empirically unspecified the channels by which social capital exerts its influence at the microeconomic level.

Moreover, social capital's multiple dimensions are dropped in aggregate level estimations and instead survey responses regarding perceived levels of trust among the general population are employed. Clearly, trust along with legal institutions and the enforceability of contracts are all essential for ensuring cooperation within larger units – where agents interact with each other infrequently and where there are no repeat players. However, trust becomes less important at the level of the family or neighborhood where reputation matters much more and opportunities for future punishments are higher. In such instances, one can achieve high levels of cooperation with lower "reported" levels of

trust. Second, many of the factors cited by Coleman (1988) as encompassing social capital – access to information channels, use of job networks and an adherence and belief in social norms and effective sanctions -- exert their influence at the sub-national level (e.g., at the individual, organizational and neighborhood level).[9]

Agglomeration, Neighborhood Spillovers and Socioeconomic Segregation

While the best known studies of social capital focus on aggregate measures of performance, a related literature has focused on the differential performance of individuals working and living within cities. The benefits of city dwelling can be seen in the noted wage premium that workers within urban areas receive as compared to their smaller city or small town counterparts. Under competitive neoclassical assumptions, higher wages for similar workers must reflect the higher marginal productivity of those workers. As noted by Glaeser (1998: 142) "This remains true even though the higher wages in cities are completely offset, from the workers point of view, by the higher cost of living in cities."

Glaeser (1998) and others formalize insights found in arguments established much earlier to account for this "productivity" premium. Marshall (1920) argued that there may be geographic boundaries to information flows and knowledge spillovers, particularly in terms of subtle forms of tacit information that can only be conveyed through close proximity and repeated interactions among persons. Closer proximity, repeated interactions and knowledge spillovers are found in greater and thus less costly supply within cities. As a result they are positive forces working in the direction of agglomeration – i.e., greater population and business density. [10]

While more disagregated than the region or nation, a city may still be too "large" to capture the spillover and interaction effects that are of particular relevance for small home-based entrepreneurs. In this regard, Benabou (1996) has demonstrated that the accumulation of human capital, which in turn underlies the evolution of individual income and productivity growth, contains certain essential "inputs" that are local in nature. According to Benabou (1996) "They are determined neither at the level of

[9] Studies by Laporta et al (1997) have used the organizational level to test whether trust has a positive effect on the performance of the firm.

[10] Ciccone and Hall (1996) have found that a doubling of employment density increases average labor productivity by around 6 percent.

individual families nor that of the whole economy, but at the intermediate level of communities, neighborhoods…or social networks."

The economic success of a self-employed individual, especially one working in a home based enterprise, is determined in large part by the set of social relations that he/she possess and that are embedded within the community where he/she works and/or lives. The economic benefits arising from social relations include such things as beneficial behavioral emulation generated by positive role models, personal contacts and peer group effects that provide access to labour market information and improve performance, and social norms that reinforce productive behaviors. Social connections such as these are most readily encountered, and hence should be measured, in the neighborhood or community in which a self-employed person works and/or lives.

A second major theoretical implication of these models is that credit market imperfections impede human capital accumulation and thus make existing inequalities within urban environments secularly self-sustaining *and* inefficient. The idea that inequality can affect personal and area wide economic performance is quite intuitive -- at least if one accepts that credit markets are imperfect.

In a model by Galor and Zeira, (1993) long run growth is assumed to depend on investment in human capital and credit markets are assumed to be imperfect so that borrowing is difficult and/or impossible. Those who do not inherit a large initial endowment of wealth are therefore not able to borrow and invest in improving human capital. Consequently, an unequal distribution of income adversely affects the aggregate amount of investment in human capital. Lower investments in human capital lead to lower growth. The effect that this type of inequality has on the labour market outcomes of self-employed individuals within cities is discussed in the next section of the paper.

Towards a Synthesis: Neighborhood Spillovers and Social Capital

What would the interface between social capital theory and the agglomeration and equity-efficiency literatures look like? In terms of local labour markets, one can think of two otherwise identical neighborhoods within the same city, where industrial composition, population, size, ethnicity are all the same, but where the only observable difference is the social capital available to individuals.[11] Put simply, social capital informs individuals of the positive externalities arising from the sharing of knowledge

and human capital. Therefore, the more "social capital" available to individuals within a community, the less likely it is that knowledge will be hoarded for pecuniary purposes. Under these conditions greater will be the quality, accuracy and speed with which innovative ideas regarding labour and product markets spread.

Theoretically, the agglomeration and social capital literatures could account for the differential labour market outcomes of otherwise similar individuals living and working in different neighborhoods. The channels would be similar to those identified by Ihlanfeldt (1997). In areas with less social capital, a greater proportion of people are employed in the "wrong" occupation or job (i.e., job mismatch is greater) and information about promotional and new job opportunities is more likely to be hoarded and therefore unavailable to a broader pool of potential applicants. In this regard, numerous studies have demonstrated that a significant relationship exists between neighborhood attributes, such as lower levels of social capital, and individual economic success. This remains true even after controlling for family and personal characteristics. Most of this literature focuses of the performance of students and young workers. Corcoran et al. (1989) identify a link between the percentage of "in-tact or two parent" families within a community and the wages of future offspring. Crane (1991) has found a negative correlation between the percentage of professional workers in a community and the school drop-out rate. The theoretical channels for these outcomes are based on psychological aspects of behavioral emulation and a lack of adequate role models.

Another finding emerging from this literature is that cities which are highly economically segregated, performance (as measured by growth, mean per-capita incomes or unemployment) within neighborhoods tends to diverge and is lower in areas of the city with lower reported measures of social capital. Evidence presented by Benabou (1996) also suggests that this kind of intra-city polarization may exert a negative effect on area-wide performance. Within a metropolitan region, the higher the socioeconomic segregation, as measured by the ratio of suburban to central city mean incomes, the lower the area's growth in both per capita income and total employment.

Naturally, no two cities or neighborhoods are identical and chances are that many forms of social capital (e.g., trust, peer group effects, and access to job networks) are not exogenously determined. Rather, they are simultaneously affected by economic performance. It is economic success, arising from either traditional factors such as natural

[11] The question of why social capital would differ across otherwise identical neighborhoods is discussed in section III.

competitive advantages or to unobserved heterogeneity across urban areas, that could possibly be the cause of increased social ties with neighbors, co-workers, managers, and colleagues. Fortunately, the endogeneity problem can be partly mitigated by paying careful attention to regional institutional developments and historical analyses. In empirical specifications, simultaneous equation modeling and other instrumental variable techniques can mitigate the endogeneity problem as well. For the purposes of this section, however, what is more important is that two distinct literatures can be thought of as complimentary and can be integrated into a model designed to account for the differential performance of self-employed individuals within urban environments.

III THEORETICAL FRAMEWORK

What accounts for the differential performance of small-scale self-employed individuals? The present paper argues that along with traditional characteristics found in the human capital literature -- effort, ability, age and education -- social capital and neighborhood characteristics contribute positively to the labour market outcomes of the small-scale self-employed.[12] Several channels by which these variables may exert a significant effect on performance are discussed below.

The Link between Social Capital and Small Scale Self-employment Success

How can social capital aid the micro-entrepreneur and improve net earnings? There are, according to Sanders and Nee (1996), essentially three mechanisms by which social relations positively affect self-employment success. Social relations can offer or provide (1) instrumental support; (2) useful information; (3) and psychological support to a very small businessperson. *Instrumental support* can directly affect performance by providing such things as start up capital to a credit-constrained entrepreneur. Instrumental support also involves the provision of "free" labour, as in the case of a small business where family members or close family friends provide non-paid work, or, provide their services at below market clearing wages. Finally, the provision or "free" lending of capital equipment or other physical resources is yet another source of instrumental support derived from social relations maintained for other purposes.

[12] According to Pernes (1992), one should not apply the neo-classical framework to the study of self-employment. In this paper I take a more balanced approach in that I supplement the neoclassical framework with additional theoretical insights drawn from social psychology and sociology.

Second, social relations disseminate useful and productive *information* and therefore act as indirect channels in improving self-employed earnings. Useful information includes the transfer of business acumen from one person to another. Social relations also transfer knowledge about local competitors and trusted local suppliers. That is, a greater number of social ties within a neighborhood increases a micro-entrepreneur's sensitivity to local supply and demand conditions. Finally advertising and "getting the word out" about a particular product or service -- because of limited financial resources -- is difficult for many small-scale enterprises. Social relations can therefore produce valuable customer referrals.

Finally, social relations provide *psychological support* and are sources of *behavior emulation* for a small-scale entrepreneur. There is considerable evidence, drawn from the field of social psychology, that individuals lacking close personal connections are more prone to depression and suffer longer and more numerous unemployment spells (Darity, 1996). Maintaining social relations can therefore prevent business dissolution caused by personal problems and can ensure that effort and motivation are not seriously impaired during times of emotional stress.

The mechanisms by which instrumental help translate into improved earnings for self-employed individuals are fairly straightforward and therefore necessitate no further elaboration. However, social capital's latter two dimensions work indirectly through intermediary processes. As such, they will be explored in more detail so as to formalize the channels by which the informational and psychological benefits arising from social relations, translate into greater earnings for the small-scale self-employed.

Social Capital, Information Spillovers and self-employment Success

Information is sometimes costly to acquire and at a minimum requires time, which is always in scarce supply. Given the "public goods" nature of much information, individuals may freely obtain otherwise costly information from social relations that are maintained for other purposes. Information acquired from social relations is therefore a form of social capital that facilitates action. As noted by Montgomery (1991) economists have long recognized the value of friends and relatives in finding work. It is only recently, however, that they have tried to model and thereby link the pattern of social ties between individuals to the varying labor market outcomes of otherwise similar individuals.

As noted by (Holzer 1988) countless studies have demonstrated that -- given multiple search methods for employment -- individuals are more likely to use friends and relatives as sources of employee job referrals, in part because contacting friends and relatives generates a job offer with relatively high probability. This search method is also relatively inexpensive, at least when compared to employment agencies or cold calling. In such a model, well-connected workers outperform similarly productive but poorly connected workers.

Montgomery (1991) extends the notion of social capital to the paid employment sector, but do social ties also aid in the performance of self-employed individuals? Social ties could improve earnings for self-employed individuals through the costs of acquiring and disseminating useful information. The costs are greater if a person has fewer connections with neighbors, friends, or relatives.

What information may be of use to a small-scale entrepreneur? If they operate out of the home -- as a majority of small-scale operators in fact do -- information about potential competitors offering similar services or products within the neighborhood is extremely beneficial. So is information about local demand conditions and the availability of intermediate suppliers.

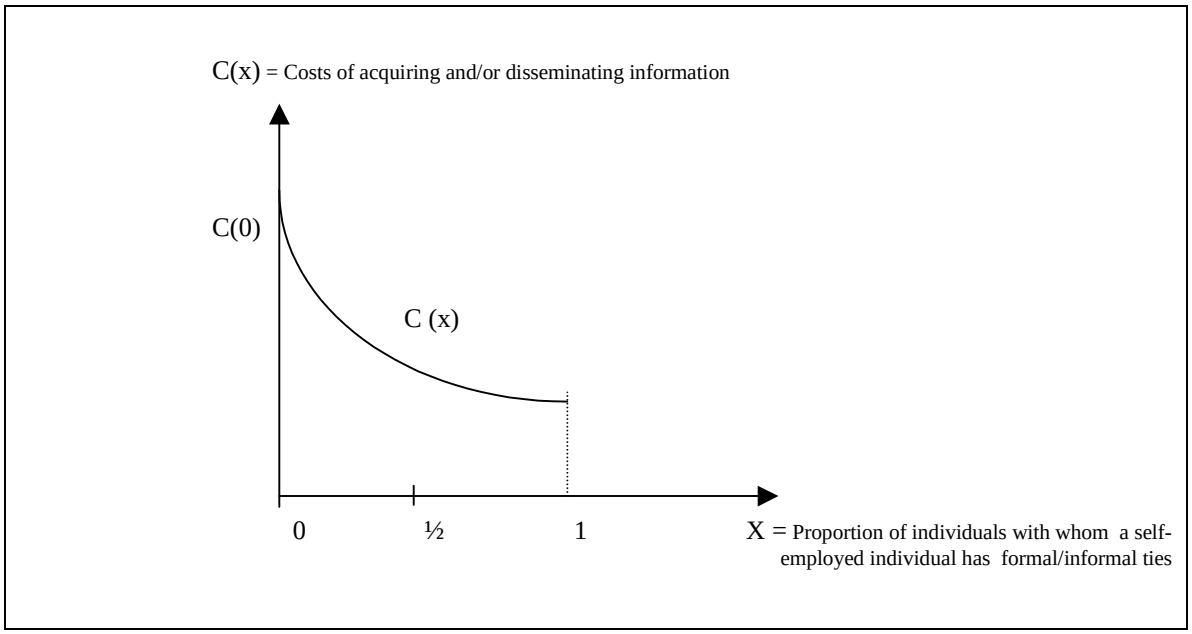
Using friends and relatives as sources of customer referrals is also a less expensive advertising method and may serve as a screening device. The employee referral literature has shown that workers tend to refer others who are similar to them. In a standard adverse selection framework, employers will thus solicit referrals from high ability workers. Such a model could be extended to self-employed individuals that are interested in attracting “high quality” customers (e.g. customers with trusted payment histories and who are loyal). Put simply, small-scale entrepreneurs may use existing customers with trusted payment histories to refer similar individuals, in much the same way that an employer would use a highly productive worker to refer others like him or her.

Based on the above discussion, the first key proposition is that the greater the number of social ties a self-employed individual maintains within a neighborhood, the easier it is to acquire and disseminate information that is of benefit to the small business

(see figure 1 below). This would make earnings, holding effort and ability constant, higher for those individuals with more numerous social ties.[13]

PROPOSITION: The costs of acquiring information (and hence effort required C(x)) decrease with the fraction of x of individuals in the neighborhood with whom a self-employed individual has formal/informal contact with.

Figure 1: The Costs of Acquiring Information



Social Capital and Improved Productivity Arising from Psychological Support

Social capital can improve a self-employed person's productivity, and hence, can increase labour market earnings. Along with human capital, social capital produces knowledge spillovers commonly found in the endogenous growth literature.[14] Useful sources of social capital beyond acquiring mere information include the following: (1) peer group effects that reinforce certain social norms and positive patterns of behavior; (2) also important in this regard is trust within a social structure of which an individual is

[13] The informational benefits arising from social ties can be captured in the following model adapted from Benabou (1996). Utility for a self-employed individual is additively separable in income and effort:

$$(1) \quad U^i = \pi^i - C^i + w^i - r^i$$

Where π^i and C^i are the profits received from the business and effort level chosen by individual i, r^i the rent/mortgage paid and w^i any additional income that might be received from paid employment.

[14] Such an interaction can be captured by writing individual productivity y^i as: {(2) $y(H,S) = H^{\alpha} S^{\beta}$ } where H^i is human capital and S^i are social ties. S captures the channels through which a self-employed individual's productivity is affected by social ties.

a member; and finally, of equal importance is (3) the quality and strength of social ties that can be called upon if the psychological or instrumental need arises.

Maintaining social relations with peers who hold strongly rooted beliefs regarding saving and work may act as a source of emulation and may also restrict an individual's scope for "reckless" action. Such connections may also improve the quality of information available to a micro-enterprise. It is not sufficient to simply "know" more people in order to transmit or acquire information (as was done in fig 1). The strength and quality of these informational networks are also important determinants of self-employment success. Wilson (1987), for example, has argued that people living in "underclass' neighborhoods have poor labour market information because they lack contact or interaction with individuals and institutions that represent mainstream society.

In terms of trust, the less of it available within social structures, the greater the number of resources that are needed in order to monitor behavior and the less likely it is that useful information concerning production techniques or service delivery will be disseminated freely.

The positive effect on individual productivity arising from a reliance on social relations, as sources of both physical and psychological support, can be justified from the oft-mentioned work of psychologist Abraham Maslow. In a hierarchy of needs framework, satisfying internal requirements for emotional attachment is a prerequisite neeeded to make someone motivated enough to achieve business success.[15] In a similar fashion, Darity (1996) has recently summarized empirical and theoretical evidence demonstrating the positive relationship between psychological well-being and individual productivity.

In summary, the emotional and psychological benefits stemming from social relations have an important positive effect on effort and motivation, and thus on labour market earnings. Similarly, social relations provide positive role models that impart behaviors, which can then be emulated. Psychological "spillovers" arising from social relations can therefore improve productivity, and hence earnings, for a micro-entrepreneur.

Neighborhoods and Self-employment Success

Neighborhood attributes and associated spillovers can be separated along physical and socioeconomic lines. [16] The physical characteristics of a neighborhood (e.g. its urban design) can affect the performance of self-employed individuals in a number of ways. For instance, the social capital required to succeed in a small business is more easily formed within high density, highly integrated and economically clustered urban areas. The reason may be as simple as the fact that the chance of interacting and meeting peers who share complimentary business products/services/skills/interests is greater in these areas. Greater proximity promotes spin-off service enterprises, offers valuable opportunities for interaction and acts as a catalyst to small-scale innovation and the sharing of information. Indeed, the literature on neighborhood effects emphasizes the positive (and negative) spillovers that can prevail as individuals cluster, both voluntarily and involuntarily, into particular neighborhoods.[17]

In North America, neighborhoods constructed before the 1960s share certain characteristics that make them more adept at harnessing social capital. Traditional urban environments contain a compact gathering of houses, apartment buildings, corner groceries, main street shops and offices all within walking distance. The classic suburb built after 1960 is less of a community than an agglomeration of houses, shops and offices connected to one another by cars. According to urban planners such as Duany and Plater-Zyberk (1992), all of the elements of the traditional community exist in modern suburbs, but for various historical reasons, they have been improperly assembled. Clusters of housing, office parks, and shopping centers can be found, and although low in population density, these suburban areas generate extraordinary amounts of auto congestion and low pedestrian traffic. The reason is that all these separate activities are linked together by collector streets. Collector streets force individuals to use a car for even the most mundane tasks such as getting a haircut or buying milk.

For these and other reasons, urban design can significantly affect how well a self-employed business performs. In communities built after the advent of so-called "euclidean" zoning – low density zoning that requires the rigid segregation of housing, commerce, and industry – small scale entrepreneurs may have a harder time succeeding.

[15] The noted wage premium for married workers could be a case in point.

[16] The relevant notion of a "neighborhood" is the area within which a neighborhood characteristic effect operates, and thus depends on the externality under consideration. In the empirical portion of the paper, a neighborhood is defined as the area of a federal electoral riding.

This is so because of low pedestrian traffic and the fact most commercial transactions occur in far-flung malls rather than corner stores or in home based enterprises.

Within traditional urban environments, transportation costs are lower and information is more easily spread, both of which make it easier for small-scale owners to inform and retain local customers. In an equilibrium model, these problems would dissipate as self-employed individuals interested in operating a home based business would move to those neighborhoods with more favorable local amenities. However, various informational, discriminatory and credit market imperfections often may make such movements impossible (at least in the short run).

Socioeconomic characteristics of a neighborhood may also exert positive spillover effects for self-employed individuals. According to DiPasquale and Glaeser (1998) homeownership encourages investment in local amenities. It also increases social capital by giving individuals an incentive to improve their community and by reducing the likelihood of outward mobility. To paraphrase Hirschman (1970), "voice" -- in the absence of "exit" -- becomes the predominant means of improving local conditions. Using a standard spillover argument, it may be hypothesized that the greater the proportion of individuals within a neighborhood who own homes the more likely it is that a self-employed individual working and/or living in that neighborhood will be able to interact with and grow to know his neighbors. If the product or service being provided is of value and is in demand then, all things being equal, a self-employed person working in a neighborhood with a greater proportion of home owners, will earn more than an otherwise comparable self-employed individual working in a neighborhood with less home ownership.[18]

General levels of human capital within a neighborhood may exert similar effects on the performance of the small-scale self-employed. Glaeser, Scheinkman, and Shleifer (1993) confirm the importance of a generally well-educated labour force, as opposed to highly skilled elite, in generating improved economic performance. In accounting for differences in economic growth across cities, Glaeser et al (1993) found the proportion of residents with 12 to 15 years of education (high school graduates and some college) to be

[17] Borjas, G (1992), "Ethnic Capital and Intergenerational Mobility". *Quarterly Journal of Economics*, 107: 123-150.

[18] An important caveat should be added in terms of such arguments. According to Durlauf (1994), the identification of various types of neighborhood spillover effects is potentially quite problematic. In particular, it requires strong restrictions on the relationship between those attributes, which define neighborhoods, and those, which directly affect individual economic performance.

more important and significantly associated with growth than the proportion of workers with higher education. Similarly, Borjas (1996) – although interested in separating out ethnic specific effects from those of a neighborhood -- has found that the average skill set of a neighborhood exerts a positive effect on individual skill acquisition. Presumably, one could imagine a similar mechanism at work in the case of small home based entrepreneur. A community that shares a similar level of high skill and education would presumably transfer productive information more easily.

Obviously there are many other factors that affect self-employed earnings (e.g., individual character, geographic location, gender, and technology). The foregoing presentation has instead focused on two concepts that are of particular relevance to small-scale entrepreneurs but that have been very rarely discussed in formal expositions. Moreover, as will be shown in the discussion of data below, the sample that will be used in this study reduces much unobserved heterogeneity that could be a cause differential self-employment success.

IV DATA

The data used in this paper are drawn from a self-designed survey of active and inactive Calmeadow borrowers. Calmeadow is a non-profit organization operating in Metro Toronto, which lends money to self-employed individuals who have been traditionally neglected by banks and other mainstream financial institutions. For example, 30 percent of Calmeadow's client base is composed of start up businesses (defined as businesses with less than one year of operation). This is a group that traditionally would not be served by most banking institutions who require "standard documentation requirements" which imply the need to supply 1-3 years of personal and business financial statements.

The survey data was supplemented by client files where demographic information and information about business characteristics were obtained. The sample excluded observations with missing data on our dependent measures – average monthly business revenues. The original sub-sample consists of 651 individuals. For all of the regressions reported below, the sample was further restricted. The numbers in brackets indicate the sample remaining after each exclusion. In regressions in which the full compliment of social capital and hard to observe "ability" variables were used, the sample dropped by

more than half (270). The reason for such a large drop is due primarily to the difficulty involved in tracking down inactive clients. Specifically, the sampling frame contained information on clients that stretched back to 1994. Roughly 20 percent of the individuals no longer resided at the address and telephone supplied on the sampling frame. This prevented surveys – which included more detailed personal information -- from being undertaken. [19] Including inaccurate sampling frame entries, the survey had a response rate of 57 percent. However, of those with accurate information and who were therefore contacted for the survey (450), the response rate was much higher (82 percent).

Log average monthly net earnings were used as our principal measure of self-employment success. The measure was obtained from client files. A general earnings measure (absent costs) was also used to capture "success". In many respects this was a preferable measure. Until 1996, client files only had revenue data and did not include average monthly business expenses. Second several survey items indicated that revenue growth was the more commonly desired goal after a loan than was profit growth. This suggests that Calmeadow clients, because many are in the early stages of developing their businesses, prefer revenues to net income and should therefore be assessed according this benchmark. As such, results are presented for both measures, but reference in the text is limited to net earnings.

Characteristics of the neighborhood where Calmeadow borrowers reside and/or work -- as in the case of home based businesses which made up approximately 70 percent of the sample -- were obtained by linking postal codes from client files with census information. Three principal indicators of neighborhood quality identified in section III were employed: the percentage of residential/commercial construction built before 1960 (to capture the effect of traditional urban design);[20] the proportion of individuals with less than 13-15 years of education (to capture neighborhood human capital, where the greater the proportion the less human capital), and the percentage of home ownership was used to proxy neighborhood social capital. Neighborhoods are defined, for the purposes of this study, as Canadian federal electoral districts.

The use of this data set confers several advantages. First, the data is drawn from a sample of self-employed individuals receiving micro-credit in the form of peer group

[19] This opens up a potential problem with the survey and data collected. The survey may have systematically missed those who had moved. It may be that "movers" were associated with a key independent variable such as lack of social ties and the sample would have misrepresented the "true ' distribution of factors like social capital.

loans. [21] Lacking working capital, the only collateral available to many "small-scale entrepreneurs" is human and social capital. Consequently, something known as "peer group lending" - which was first pioneered at the Grameen Bank in Bangladesh - has been adopted by a number of non-profit lending institutions in advanced economies. Many organizations currently apply this same technique alongside traditional individual loan programs. Specifically, peer group lending involves the dispensing of loans to a group of applicants who enter into a contract to monitor and support each member of the group. In most cases, lending institutions ask that these groups be self-formed. In some instances, for those new to an area, the institution forms the group from other single clients. In the absence of large start-up financial capital or traditional sources of finance, micro-credit (and the peer group process in particular) places a greater premium on social capital – capital developed through social ties and individual connections to family, friends and acquaintances. This data set, because it is composed almost entirely of small-scale self-employed individuals receiving micro-credit, is uniquely placed to test the theory that social capital exerts a significant and important positive effect on the labour market performance of small-scale self-employed individuals.

A second advantage conferred by this data set is that by personally designing and administering the survey, I was able to employ a number of questions that are rarely if ever asked in larger employment surveys. Questions concerning social ties were added in order to fully capture the multiple dimensions of a concept such as social capital. Much of the literature often uses singular measures to test the link between social capital and some observable outcome. But social capital is a complex entity that is best captured using several variables.

Third, the data set links postal codes with each individual. Postal codes can be used in combination with census data to obtain information on detailed neighborhood characteristics. Such characteristics are often excluded in similar studies exploring the effect of agglomeration and spillover effects on performance.

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[20] This variable was used to capture the difference between traditional and suburban environments. A dummy variable taking the value "1" if a majority of residential property was constructed before 1960 was also used.

[21] Although well established in many parts of the third world, "micro-credit" is less prevalent within high-income economies. Various terms are synonymous with micro-credit including self-employment business credit, micro-loans, micro-finance, micro-business lending, and working capital. For the purposes of this study these terms are essentially interchangeable and are generic terms related to the practice of granting small loans to the self-employed and small-scale entrepreneurs. The question of how great an effect micro-finance can make on a self-employment venture is a hotly debated one and research in the area is still in its infancy. According to Morduch (1998) "While strong claims are made for the ability of micro-finance to reduce poverty, only a handful studies use sizeable samples and appropriate treatment/control frameworks to answer the question."

Fourth, by using micro-data, the paper controls for individual characteristics often excluded in regional and aggregate level studies that attempt to link greater levels of social capital with improved economic performance. The survey also contains a section where information on conventionally unobserved personal characteristics such as motivational predispositions and adherence to moral codes were collected. This section was added to the survey in order to account for unobserved heterogeneity that is typically controlled for in panel data sets by the use of first difference techniques and/or fixed-effects estimators.[22]

Table A-1 in the appendix provides summary statistics for variables used in the principal regression. Figures 2 and 3 below summarize characteristics for the entire population of Calmeadow borrowers.

Figure 2: Personal Borrower Characteristics

- 52 % of the clients are single, 32 % are married, and the rest are divorced or widowed.
- The age of distribution is normally distributed, with 12% of clients between the ages 21-30; 34% between 31-40; 34% between 41-50; 16% between 51-60, and 3.2% 61+.
- Education levels are also fairly evenly distributed. A minority of Calmeadow clients have less than a high school diploma (4%); a majority have a high school diploma (32%); another 34% have completed technical or community college education; and 26 % have a university level education.
- Roughly 35 % have taken a technical course related to their business and 42 % have taken a self-employment-training course.
- 65 % are immigrants. Of this 65%, most foreign-born clients are from Central and South America (18.2%); Caribbean (14%); Africa (13%); Western and Southern Europe (6%); Eastern Europe (3%); South East Asia (3%) and the Middle East (1%).
- Most clients are recent immigrants to Canada (50 % entered Canada after 1981; 31% between 1971-80; and the rest (15%) entered Canada before 1970.
- A majority of Calmeadow borrowers rent their home or apartments (80%).
- Non-business monthly household income is $1,680.00.
- Average number of dependents per client is 1.88.
- Most borrowers (51%) reside within the "old" city of Toronto. After that, Scarborough (12.7%); York (8.9%); Etobicoke (8.7%); and North York (6.3%) follow.

[22] In recognition of the endogenous nature of cross-sectional data, several measures were expressly added to the survey as a means of producing valid "instruments". Although not undertaken in the present version of the paper, the use of instrumental variables – which simultaneously account for unexplained variation in key explanatory variables but do not affect the dependent measure -- is crucial if one wishes to establish causal channels linking social capital and neighborhood characteristics with self-employment success. See Imbens and Rubin (1994) "Causal Inference with Instrumental Variables", Discussion Paper 1676, *Harvard Institute of Economic Research*, highlight some of these techniques in their paper.

Figure 3: Business Characteristics

- Distribution of businesses by type is the following: 38.5 % are personal services, 17.1 % are in business services, 22% are in retail trade; 4.7 % in wholesale trade; and 17.9% in manufacturing.
- 75% of businesses are home based.
- 32% of businesses are start-ups (less than 12 months in business). The average business is 21 months old.
- Average monthly business revenues are $2,457 and net revenues are $1,249.
- 86 % of businesses are own account self-employed (no paid employees).
- 32% of businesses use word of mouth as a source of business promotion, 62 % advertise externally, and 5% use a combination of both.
- 10% of businesses rely on family and friends as principle sources of customers. 27% service or supply business, government or other organizations. And 63% rely on the general public.
- 38% of individuals rely on self-employment business revenue as their principle source of income. 62% use it to supplement income.
- 68% of borrowers rely exclusively on Calmeadow Metrofund for business credit.

V EMPIRICAL FRAMEWORK

The following section describes the empirical methodology employed as well as the measures used to estimate the determinants of net earnings differentials among our sample of small-scale self-employed individuals. In terms of the empirical approach, a standard earnings equation is used to estimate the returns to social capital and neighborhood characteristics. Two separate estimations were run using alternative measures of success – log average gross and log net average earnings. For the sake of simplifying the presentation of results, all specifications discussed in the text refer to net earnings as presented in Table 3. [23]

Estimating The Effect of Human Capital on net Earnings

Before asking what effect social capital, peer group lending and neighborhood characteristics have on small-scale self-employment performance, it may be useful to examine whether the data is consistent with traditional estimates drawn from the human capital literature. In particular, it would be interesting to see if net earnings are greater for those with higher levels of education and experience. Such an approach is complicated, however, by the fact that little is known about the micro-level processes that influence

[23] Table 2 replicates the model using gross earnings.

success for small entrepreneurs. As commented by Honig (1998) we simply do not know whether "education [is] important, or [whether] practical experience is more helpful?"

Human capital theory has been empirically verified using wage rate data for paid workers employed in the formal sector. Standard human capital equations control for other sources of wage variation by including race, gender, experience, industry, and occasionally socioeconomic background (to control for unobserved ability) in wage regression equations. Unfortunately, a major weakness characterizes this methodology. Most notable is that wages may not be reflective of individual productivity and thus the estimated returns to education (human capital) may reflect credentialing theory (Dore,1976) or may be a signal of other characteristics such as loyalty to the firm (Spence, 1974). These theories suggest that the positive association between education and wages for paid employees may not be the result of increased productivity, but rather may be due to arbitrarily set managerial criteria employed to ration the most highly paid jobs. Because small-scale self-employed workers depend only on themselves to produce value, the aforementioned methodological complications in measuring the returns to education for paid workers are avoided.

In this paper human capital is measured using two educational variables. The first education variable used is a four-category measure of educational attainment. Four categories were used to capture non-linear relations between level of educational attainment and earnings. The excluded reference category includes those persons who have completed a university degree. The second human capital measure is a dummy variable coded 1 and 0 otherwise, if individuals had taken a technical course related to their business. The expectation, based on standard human capital theory, is that the more educated tend to earn more, holding other observable characteristics constant. A lengthy list of personal and business characteristics were also added as controls. These are clearly labeled in the regression tables and any comments regarding their anticipated effects will be deferred to the discussion of results.

The Effect of Peer Group Loans on Performance

Peer group borrowing is a technique employed by micro-loan organizations in order to alleviate the high costs of making small loans. Borrowers are made to form their own group of 4-7 members with similar business interests. As a group they are trained to

assess and approve each other's loans. From the micro-lender's perspective, this approach alleviates the high costs of staff-intensive loan approval and monitoring procedures used by conventional lending institutions. More importantly, at least from the borrower's standpoint, is that peer group lending places a premium on social networks and ties. It forces those with little or no financial collateral to invest time in establishing business connections.

Interestingly, Calmeadow also dispenses individual loans typically found in mainstream banking institutions. Individual loans are larger and the requirements are more stringent, in the sense that they are on par with "standard" banking requirements. Not surprisingly, self-employed individuals who receive an individual loan typically run larger operations (they are more likely to be employers rather than be independently self-employed) and thus generate greater net earnings. However, two types of clients make up the individual loan category. First, there is the "pure" individual borrower who receives an individual loan without graduating from the peer group-lending stream. Second, there is the peer group graduate. This is a borrower who started in the peer group process and who later applied and was accepted for a larger individual loan.

Based on the positive instrumental, informational and psychological effects arising from social relations, peer group graduates should have an advantage over otherwise similar individual loan counterparts. The social capital gained in terms of knowledge spillovers from peers who share similar business interests and the creation of business connections should make peer group graduates more successful. To capture the peer group effect, a three-category variable was added to the regression. The excluded reference category was the individual loan candidate that had graduated from the peer group process. The pure individual loan candidate and the peer group loan candidate were the two comparitor groups.

Social Capital and Self-employment Success

As discussed in section II, most studies that estimate the relationship between social capital and economic performance employ macro-data where regions or countries are the units of analysis. While useful, such a strategy contains certain drawbacks such as aggregation effects, which swamp differences occurring at the micro-level. Using individual micro-data, on the other hand, allows one to more accurately control for a host of individual characteristics such as human capital and ability. Under conventional neo-

classical assumptions, measures of human capital such as experience and education should account for the bulk of variation in net earnings observed across self-employed individuals.

The first problem one encounters in estimating the link between social capital and net earnings is how to measure social capital. Social capital is a multi-dimensional concept and is less tangible than human or physical capital. Therefore, a host of self-reported survey response items could potentially be used as proxies. The measures ultimately chosen in this study were closely related to the dimensions originally highlighted by Coleman (1988). They include the following: (1) the strength of social ties as measured by a survey question asking respondents whether they could always depend on friends or relatives for help; (2) a dummy variable indicating whether the respondent was an active member of any groups/organizations/clubs/teams; and (3) the use of informational channels as proxied by the importance of contacts in generating business opportunities. The expected effect of each of these variables on net earnings is positive.

Simultaneity and Hard to Observe Ability

Any positive correlation between social capital and small-scale self-employed net earnings hinges upon the assumption that individual ability or inherent productivity has been properly accounted for. With repeated observations across individuals (panel data) one could control for fixed effects -- unobservable individual traits that may simultaneously affect business success and social capital positively, thus biasing upward, or downward, the effect of social capital on net earnings -- by appropriate estimating techniques such as first differencing or fixed effects estimators.

In the absence of panel data, several "sociological" components of the survey were exploited in order to provide measures of inherent ability and unobserved effort. A dummy variable called "confidence" -- coded 1 if respondents agreed with the statement that they were very confident at the time they started their businesses that it would succeed – was employed and anticipated to be positively and significantly associated with greater net earnings. Making the question retrospective in nature, was a way (albeit an imperfect one) of controlling for reverse causality.

A second measure captured whether someone was "pushed" or "pulled" into self-employment. The survey asked respondents whether they would prefer to work, holding other things constant, in a paid job as opposed to being self-employed. The variable was

coded 1 if they did and zero otherwise. A priori, there could be two forces working in opposite directions that would make predicting the sign of the co-efficient rather difficult. Someone who prefers to be self-employed may have certain skills and business acumen that translate into greater economic success. However, someone pushed into small-scale self-employment because of job loss, may exert extra effort in order to maintain a certain lifestyle that he/she has grown accustomed to.

A seven-point scale rating how important computer knowledge was felt to be for business success was used to capture the effect of technological skill differentials on net earnings. The expectation would be that those self-employed individuals who believed that a greater deal of computer knowledge was necessary for business success should also generate greater net earnings.

The Effect of Neighborhood Characteristics on Net Earnings

In this paper a neighborhood is defined as a federal electoral riding. There were 27 different ridings in the sample. Three principal indicators of neighborhood quality identified in section III were employed: the percentage of residential/commercial construction built before 1960 (to capture the effect of traditional urban design);[24] the proportion of individuals with less than 13-15 years of education (to capture neighborhood human capital, where the greater the proportion the less human capital), and the percentage of home ownership was used to proxy neighborhood social capital.

Empirical Specification

If one adds social capital, unobserved ability and neighborhood characteristics to a basic human capital type earnings equation, the empirical relationship between social capital and self-employment success can be illustrated as follows:

$$(3) \qquad \ln R_{it} = \alpha_0 + \alpha_1 S_{it} + \alpha_2 H_{it} + \alpha_3 X_{it} + \alpha 4\, P_{it} + \alpha 5\, N_{it} + u_{it}$$

where log monthly net average earnings *lnR* in period *t* for self-employed individual *i* are regressed against a vector of social capital variables S_{it}, a vector of human capital variables H_{it}, a host of other personal and business characteristics X_{it} , unobserved ability

[24] This variable was used to capture the difference between traditional and suburban environments. A dummy variable taking the value "1" if a majority of residential property was constructed before 1960 was also used.

and effort $P_{it,}$ and a vector of neighborhood characteristics, $N_{it.}$ It is this equation that forms the basis of the results discussed in section V below.

VI RESULTS

The Effect of Human Capital

Table 3 presents results from the regression equation highlighted above. As expected, the coefficients in column 2 generally follow the pattern predicted by standard human capital theory. Focusing on our measures of human capital, the four-category educational attainment variable indicates that individual net earnings are lower for those with less than a high school degree. However, the effect is not a statistically significant one. Self-employed individuals with less than a high-school degree earn 33 percent less on average than university graduates do. However, those with a high school or college degree earn appreciably no more or less (2 percent more but this result is not significant) than university graduates.

Self-employed individuals who have taken a technical course related to their business outperform otherwise similar counterparts by 3 percent. One should be cautious about treating the reported co-efficient as an indicator of the returns to technical training. Apart from the low significance level and small effect size, the cross-sectional nature of the data does not rule out the possibility that there are unobserved individual characteristics (ability, effort, intelligence) which make one more likely to enter a training course and simultaneously become successful in a business endeavor. Problems in ascribing causal inferences are partially mitigated in this regression by the addition of measures that control for ability and motivation and that are typically unavailable in larger labour force surveys.

Personal and Business Characteristics

In terms of personal characteristics, immigrant net earnings do not appear significantly different from native born respondents. Immigrant status is broken up by period of entry and indicates that more recently landed immigrants earn less on average than all other groups. For example, recent immigrants in the sample (those who entered Canada between 1981-1990) earned 30 percent less than those who entered Canada prior to 1961.

Business characteristics such as whether the micro-enterprise employed paid workers, its location or base of operation, and whether the business was intended to supplement income from other sources, all exerted intuitively consistent effects on net earnings. Having at least one paid worker on the payroll was associated with 65 percent greater net earnings; home based enterprises earned 37 percent less on average than those based out of a store, market or industrial park; and holding on to a paid job that supplemented income from a business was associated with 21 percent less net earnings.

The Peer Group Effect

The "type of borrower" variable was used to capture the positive effects of having participated in a peer group lending circle. As predicted, self-employed individuals who received an individual loan, because their operations tended to be larger, earn more on average than those in a peer group. However, both individual and peer group loan candidates earn less than those individual loan candidates who graduated from the peer group process. Specifically, while the co-efficient was not significant, comparable individual peer group graduates earned 21 more in profits than pure individual borrowers.

Is Social Capital Associated Positively with Net Earnings?

In terms of social capital, individuals who reported having a very strong connection with family and friends earned significantly more than otherwise similar individuals (net earnings were 13 percent higher). Once again, attributing cause and effect is difficult. It could be that by virtue of earning higher net earnings, a self-employed individual has an easier time establishing stronger social relationships. Or similarly, there may be unobserved characteristics that make individuals more predisposed to do well in the labour market while simultaneously being able to form stronger and more numerous relationships with friends and family.

Being a member of a club, team, association or organization that meets fairly regularly was positively associated with business success. On average, active members earned 41 percent more than non-members lending indirect support to the notion that the number of social contacts gained through participation in civil society, may play a role in business success. In this regard, individuals who stated that connections or contacts were helpful in terms of generating greater revenues for their business, earned twice more than

those who believed that contacts or connections were not important determinants of business success.

Unobserved Inherent Ability and Effort

Inherent ability and effort were measured using three proxies. The variable capturing whether someone was pushed into self-employment had a predicted ambiguous sign. This is apparently borne out in the estimated co-efficient. Individuals who preferred a paid job to being self-employed earned 21 percent less. However, the t-statistic of -1.10 is insignificant at conventional levels. Knowledge of computers was associated with significantly greater net earnings. Specifically, a one point movement in the knowledge scale was associated with a 13 percent increase in net earnings. Finally, having a very confident attitude regarding business success at the outset of a businesses' inception, was strongly and significantly correlated with greater net earnings.

It should be noted -- in results not reported here -- that the inclusion of these unobserved ability/effort variables had no appreciable effect on the signs and significance levels of our measures of social capital.

Neighborhoods Characteristics

It would be premature to search for the characteristics of neighborhoods that influence self-employment revenues without first determining whether revenues significantly differ between self-employed individuals who reside in different neighborhoods, holding constant personal and business characteristics.

Taking our original eq (3) and conducting an *F* test of this model against the same model with dummy variables for eight metropolitan regions rejected the null hypothesis of equality among the subset of neighborhood coefficients. Thus, it appears that neighborhoods do account for the differential performance self-employed individuals. Estimates for the effects of three characteristics of neighborhoods that influence net earnings are reported below.

A neighborhood is defined as a federal electoral riding. There were 27 different ridings in the sample. The measures used are the proportion of occupied private dwellings owned, the proportion of population age 15+ with less than high school, and a dummy variable indicating whether the neighborhood is a "traditional" urban environment. This

variable was constructed by assigning the value 1 to those neighborhoods with more than 60 percent of occupied dwellings constructed prior to 1961.

Only one of the three neighborhood characteristics is significantly related to net earnings. The basic problem resides in the lack of variation in the data. The sample is far too small to detect the spillover effects arising form average neighborhood characteristics. In the above regressions there are 5 to 15 observations on revenues for each observation on neighborhood characteristics. It may be that these variables are in fact capturing unobserved qualities of self-employed individuals who reside in a given neighborhood. As it stands, it appears that individuals who reside and/or work in neighborhoods where there is a greater proportion of people with education levels greater than a high school diploma, earned significantly more than otherwise similar individuals.

VII CONCLUSION

The present study analyzed the determinants of success for what is increasingly becoming a growing feature of the Canadian economy. Small-scale self-employment -- defined here as businesses, which are predominantly own account and with annual revenues generally not exceeding $100,000 – has accounted for a large portion of private sector employment growth throughout the nineties. Whether this turns out to be a permanent feature of the labour market, is still subject to debate. The fact that micro-finance institutions like Calmeadow-Metrofund - which have been common in low-income economies for several decades - are now operating within highly advanced urban centres lends indirect support to the notion put forth by several writers who link the rise in small-scale self-employment to the emergence of a new tertiary economy and a fundamental change in the overall occupational structure in which the self-employed workforce takes on greater importance as compared to wage earners (Roy, 1997).

As demonstrated in the empirical analysis, it appears that otherwise similar individuals (e.g. individuals with the same observable levels of education) do not profit equally from the provision of micro credit. Other factors, which are less observable to lenders -- such as connection to friends and family, use of information channels and for home based enterprises, attachment to their community – all contribute to self-employment success. Although the present study was unable to significantly link specific neighborhood characteristics with self-employment success, it still may be the case that only certain urban environments are amenable to small-scale self-employment

opportunities. It is towards addressing these policy concerns that future empirical research should be geared.

Attempting to model and estimate the factors that contribute to the viability and economic success of these small-scale entrepreneurs is one way for governments to design efficient social policies. If credit market constraints make it difficult for the small scale self-employed to start up a business, it may be necessary to subsidize the provision of micro-credit. The cost of providing an extremely small loan is large, and may require subsidies form various public and private actors. The present study has shown that individuals with little or no financial collateral may benefit from increased levels of social capital and technical training. Although the present study was unable to confirm in an empirically satisfactory manner the impact of "place" on performance, there are strong theoretical reasons and empirical evidence produced elsewhere, that neighborhood characteristics influence individual labour market performance. Extending the agglomeration and neighborhood spillover literatures to the peculiar nature of small-scale self-employment should be another future task for researchers in the area.

Not surprisingly, given the growing importance of self-employment and small business entrepreneurship, increased policy attention has been given to these areas. There has always been a concern with the potential "bias" (given the potential moral hazard problems) in unemployment insurance systems that the self-employed are not covered. However, increased attention has been given to self-employment and small business entrepreneurship as potential avenues out of unemployment. Support in such areas was provided, for example, under the Innovations and the Community Futures component of the former Canadian Job Strategy Program that was consolidated in 1995 under Part II of the new Employment Insurance legislation. The self-employment program is designed to provide support for unemployed persons to make the transition into self-employment and small business entrepreneurship. This is why understanding the determinants of success for micro-credit borrowers can provide insights into the factors that may influence success in these areas under employment insurance or other income support programs.

A further policy application centers on the potential use of worker sponsored solidarity funds. [25] Given the shifting nature of work and the growth of non-standard

[25] Specifically, the ILO reports that "In Canada a variety of new financial instruments, ranging from regional development funds to private risk or venture capital, have emerged over the past decade. These funds are based in many cases on new partnerships between Government, the private sector and social partners. Of particular interest to the ILO is the trade union involvement in Québec. A

employment this would appear to be one function that unions and union federations could adopt for members who have lost traditional employment. Perhaps workers who are no longer certified and have lost paid employment opportunities could join a union (as an associate member perhaps). This association or membership could make one eligible for some type of self-employment credit provision. Existing members, who wished to start up a self-employment opportunity as a means of supplementing income, would also be eligible for such small-scale loans.

study on Fonds de Développement Local et Régional au Québec conducted by the Inter-university Research Group (PROFONDS) and commissioned by the Federal Office of Regional Development (1996) showed 284 funds in Quebec with a capital of over Can$ 3.1 billion. The main investors are the Federal and Local Government (53%), followed by the trade unions through "Fonds de Solidarité des Travailleurs" (17%) cooperatives (Desjardins and Caisses Populaires) (10%) , traditional banks and private enterprises (10%) and others (citizen groups, religious organizations etc) (10%). Priority of the funds is to target start-up business (96%). Loans for business development and expansion is equally favoured (respectively 82% and 73%). 10% of the funds explicitly focus on the very small, micro-business and independent workers, while another 30% focus on entrepreneurs who are part of a target clientele, such as single mothers, refugees, welfare recipients, young people etc. Most funds offers very small investments per project; seven out of ten funds invest less than Can$ 10,000 and nearly two out of three funds invest for a minimum period of two years." http://www.ilo.org/public/english/65entrep/finance/

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Table 1: Employment in Ontario: 1976-1997

	Total Employment	Employees	Self Employed				
Year	(000)	(000)	Total (000)	Employers Incorporated (000)	Own Account Incorporated (000)	Employers Unincorporated (000)	Own Account Unincorporated (000)
1976	3745.4	3359.8	385.5	65.9	12.4	98.1	174.6
1977	3823.3	3393.5	429.8	75.9	11.2	110.6	194.7
1978	3962.4	3495.9	466.6	84.5	13.2	109.7	217.6
1979	4136.4	3656.5	479.9	84.1	15.6	110.1	225.4
1980	4203.5	3714.8	488.7	103.5	15	103	231.6
1981	4338	3831.8	506.3	114.4	19.2	103.5	232.3
1982	4243.6	3728.6	514.9	123.2	22.2	118.1	219.5
1983	4278.2	3740.1	538.1	136.1	25	120.1	226.6
1984	4443.6	3897.2	546.5	130.8	23.4	113.4	251.8
1985	4608.1	4037.7	570.4	140.7	23	128.2	253
1986	4771.7	4213.6	558.1	146.1	25.1	122.7	241.1
1987	4951.2	4368.6	582.6	157.4	31.2	125.5	246.2
1988	5136	4506.5	629.5	181.8	32.7	119.5	275.7
1989	5240.8	4605.3	635.5	164.6	41.4	129.9	283
1990	5225.5	4556.3	669.2	183	44.6	123	301.8
1991	5043.6	4377.1	666.5	181.9	50	128.9	288.6
1992	5000.8	4321.5	679.3	173.8	54.7	125	308.9
1993	5088.6	4353.4	735.3	180.1	53.7	124.1	353
1994	5160	4397.2	762.8	167.5	61	139.3	379.1
1995	5231.3	4495.9	735.4	170.3	60.3	118.7	371
1996	5310.7	4515.1	795.7	172.1	67.8	122.9	416.8
1997	5412.9	4498.6	914.3	195.4	94.8	116.2	482.7

Source: Labour Force Survey (LFS), Statistics Canada, Annual Averages.

Table 2: Regression of Log Monthly Gross Earnings on Human Capital, Personal and Business Characteristics, Type of Loan, Hard to Observe Ability, Social Capital, and Neighborhood Characteristics.

Variable	**Regression**		
	Mean	**Coefficient**	**t**
Constant	-	8.017	9.209
Personal Characteristics			
[Age 21-30]			
Age 31-40	.345	.230	1.177
Age 41-50	.335	.261	1.307
Age 51-60	.156	.525	2.073
Age 61 +	.031	-.173	-.348
Male Dummy	.444	.169	1.190
Married Dummy	.319	.180	1.063
[Native Born]			
Immigrated < 1961	.015	.617	.819
Immigrated 1961-70	.116	.018	.041
Immigrated 1971-80	.319	.090	-.310
Immigrated 1981-90	.335	-.250	-811
Immigrated 1991-96	.183	-.500	-1.297
Business Characteristics			
Start up Business Dummy	.320	.335	2.247
[Own Account]	.189	.320	1.878
Employer			
[Store, Market, Industrial Park]			
Home Based	.744	-.733	-3.754
[Business Major Source of Income]			
Business Supplements Income	.605	-.454	-3.094
[Multiple Methods of Promotion]			
Word Of Mouth	.328	-480	-756
Advertising	.633	-409	-.652
Other	.026	-580	-.770
Human Capital			
[University Degree]			
College Degree	.224	-147	-746
High School Diploma	.231	.045	.224
Less than High School	.030	-564	-1.271
[No Training]			
Technical Training	.362	.102	.640
Type of Loan			
[Individual Loan]			
Peer Group Loan	.930	-737	-2.210
Individual/Peer Group Loan	.044	-.338	-.527
Social Capital			
Member of Club/Organization/Association	.487	.239	1.706
[Business Not Contacts Not Helpful]			
Business Contacts Helpful	.889	.987	1.750
[Connection with Friends & Family Not Strong]			
Very Strong Connection with Friends & Family	.339	.393	2.677
[Little Knowledge of Neighbors * Home Based]	.318	.239	1.099
Knowledge of Neighbors * Home Based			

Hard to Observe Ability			
Knowledge of Computers (7pt scale)	5.439	.064	1.337
[Not Confident]			
Very Confident About Business Success	.789	.401	2.384
Prefers Paid Work to self-employment	.296	.093	-.602
Neighborhood Characteristics			
[Suburban Environment]			
Traditional Urban Environment	.548	-202	-1.054
Ratio of Dwellings Owned	.468	-.663	-1.077
Proportion 15+ Less than High School	.342	.476	.635
R^2	.204		
Adjusted R^2	.126		
No. Observations	270		

Excluded reference categories in [ ]. Numbers in ( ) are t-statistics. Method of estimation OLS.

Table 3: Regression of Log Monthly Net Earnings on Human Capital, Personal and Business Characteristics, Type of Loan, Hard to Observe Ability, Social Capital, and Neighborhood Characteristics.

Variable	**Regression**		
	Mean	**Coefficient**	**t**
Constant	-	7.292	6.810
Personal Characteristics			
[Age 21-30]			
Age 31-40	.345	.080	.335
Age 41-50	.335	.157	. 640
Age 51-60	.156	.486	1.565
Age 61 +	.031	-.697	-1.145
Male Dummy	.444	.313	1.801
Married Dummy	.319	.164	.795
[Native Born]			
Immigrated < 1961	.015	.161	.175
Immigrated 1961-70	.116	-.438	-.799
Immigrated 1971-80	.319	-.080	-.221
Immigrated 1981-90	.335	-299	-.792
Immigrated 1991-96	.183	-.018	-.040
Business Characteristics			
Start up Business Dummy	.320	.162	.885
[Own Account]	.189	.650	2.606
Employer			
[Store, Market, Industrial Park]			
Home based	.744	-.375	-1.917
[Business Major Source of Income]			
Business Supplements Income	.605	-.215	-1.187
[Multiple Methods of Promotion]			
Word Of Mouth	.328	-1.044	-1.341
Advertising	.633	-1.066	-1.383
Other	.026	-1.061	-1.149
Human Capital			
[University Degree]			
College Degree	.224	.007	.029
High School Diploma	.231	.019	.081
Less than High School	.030	-.339	-.627
[No Training]			
Technical Training	.362	-.028	-.143
Type of Loan			
[Individual / Peer Loan]			
Peer Group Loan	.930	-.320	-.783
Individual Loan	.044	-.211	-.264
Social Capital			
Member of Club/Organization/Association	.487	.415	2.401
[Business Contacts Helpful]			
Business Contacts Not Helpful	.019	-1.00	-1.457
[Connection with Friends & Family Not Strong]			
Very Strong Connection with Friends & Family	.339	.127	1.705
[Little Knowledge of Neighbors * Home Based]	.318	-.402	-1.927
Knowledge of Neighbors * Home Based			

Hard to Observe Ability			
Knowledge of Computers (7pt scale)	5.439	.132	2.219
[Not Confident]			
Very Confident About Business Success	.789	.378	1.832
Prefers Paid Work to self-employment	.296	-.210	-1.102
Neighborhood Characteristics			
[Suburban Environment]			
Traditional Urban Environment	.548	-.006	-.026
Ratio of Dwellings Owned	.468	-.305	-.403
Proportion 15+ Less than High School	.342	-1.777	-1.912
R^2	.209		
Adjusted R^2	.156		
No. Observations	224		

Excluded reference categories in [ ]. Numbers in ( ) are t-statistics. Method of estimation OLS.

Appendix A-1

Table A-1: Descriptive Statistics for Principle Regressors

	Mean	Std. Deviation	N
Log Monthly Revenues	7.2484	1.1846	525
Age 61>	.0319	.1759	658
Age 51-60	.1565	.3636	658
Age 41-50	.3359	.4727	658
Age 31-40	.3450	.4757	658
Male	.4448	.4973	652
Immigrated Between 1961-1970	.1168	.3219	297
Immigrated Between 1971-1980	.3198	.4676	297
Immigated Between 1981-1990	.3350	.4732	297
Immigrated Between 1991-96	.1827	.3874	297
College Degree	.2249	.4178	658
High Scholl Diploma	.2310	.4218	658
Less Than High Scholl	.0304	.1718	658
Technical Training	.3625	.4811	640
Start up Business	.3203	.4670	640
Married	.3191	.4665	658
Employer	.1848	.3884	617
Business Supplements Income	.6059	.4895	307
Word of Mouth	.3289	.4703	532
Advertising	.6335	.4823	532
Other forms	.0263	.1602	532
Home Based Business	.7440	.4367	629
Memeber of club/organization/association	.4872	.5006	312
Individual Loan	.0243	.1541	658
Peer Group Loan	.9311	.2535	653
Connections Not Helpful at all	.0192	.1373	313
Very Strong Connection with Friends and family	.3399	.4745	303
Knowledge of neigbours and Home based	.3189	.4666	392
Prefers Paid Work to self-employment	.2968	.4576	310
knowledge of computers - as a quality needed to succeed in small business [7 pt scale]	5.4391	1.4422	312
Very Confident That Business will Succeed	.7896	.4082	309
Traditional Urban Environment	.5486	.4981	587
Percentage of Dwellings Owned	46.8092	15.5623	587
Proportion of Workers with less than high school	.3428	.0949	587