The Social Networks of Entrepreneurs in the Informal Sector: Does the 'Strength of Ties' Augment Microenterprise Performance in Ethiopia?

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Abstract

The objective of this study was to examine the effect of strength of ties on the performance of micro-enterprises in Addis Ababa. The study employed a cross-sectional approach and multistage sampling procedures involving purposive and systematic random-walk techniques to draw samples. Network data were collected through Name Generator and Interpreter surveys. The data were analysed using social network analysis and statistical procedures. By controlling the potential endogeneity problem between strength of ties and enterprise performance, the results revealed that the strength of ties have significant negative effect on microenterprise performance. Strong ties constrain entrepreneurial agency and economic performance but appear to favour the trust and resources required to develop and maintain microenterprises.

Keywords: Networks, strength of ties, microenterprises, informal sector, Ethiopia

1. Introduction

In developing countries, rapid growth in rural-urban migration accompanied by a slow expansion of employment in the formal sector has forced the largest share of the workforce into the informal sector. The informal sector is a marginal economy providing income for the poor (ILO 2013). The workers are poor people who work part-time in various non-farm income-generating activities and self-employed people who produce goods for sale, purchase goods for resale or offer services (Viswanathan 2002). The

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informal sector most often means poor employment conditions and is associated with increasing poverty (Fransen and van Dijk 2008). Informality is important feature of labour markets in the world; millions of workers earn their livelihoods informally (ILO 2013). According to the ILO (2013) estimates, the share of informal employment outside agriculture to the total non-agricultural employment accounts for about half of the global labour force and more than 90 per cent of micro and small enterprises worldwide. In Ethiopia, the informal sector accounts for about 34 per cent of the urban employment and the majority of these informal sector operators earn their livelihoods from microenterprises[1] (MoLSA 2013).

As informal operators work out of the government regulations, they have less access to financial and physical resources from formal institutions (Chen *et al*. 2005). Instead, they depend on their social networks (SNs) to solve their material and non-material problems (Berrou and Combarnous 2011; 2012). In informal sector studies, there has been recognition of the role of ethnic and family networks in the operation of national economy. Scholars have acknowledged the importance of ethnic and religious networks in providing an environment of cohesion and shared norms capable of organising businesses outside the formal system (Meagher 2005). Characterised as informal associations and communal ties, family and co-ethnic are able to respond effectively to the economic and social needs of the poor by substituting state institutions (Sherifat 2011). Evidence drawn from urban studies in developing countries prove that strong family and co-ethnic networks are important resources for the urban poor (Berrou and Combarnous 2011; 2012). In terms of poverty alleviation, it is proved that the poor call on close relations of family and friends as a form of social security. Family and friends offer private solutions to market failures when there is lack of formal institutions to channel information about market opportunities (Nordman 2016).

The existing literature provides evidence on the role of family and ethnic networks on the diffusion of information, new products and technologies (Jackson and Yariv 2007); informal insurance and risk sharing (Fafchamps 2011); joint problem solving, information exchange and resource sharing (Uzzi 1996); and labour arrangements (Munshi 2011; 2014). Family and co-

ethnic friendship ties are particularly critical in the informal sector where they substitute for the limited formal support systems to access factor inputs, such as physical and human capital and other productive infrastructures (Nordman 2016). In the current condition of state failure in Africa, neo-liberal informal sector literature has focused on the potential role of networks in substituting the awkward and inefficient regulatory framework of the formal system (Berrou and Combarnous 2011; 2012). Indeed, these days there is a consensus that exploring the nature of entrepreneurs' SNs and their individual returns is crucial to improve the understanding of African markets and informal institutions (Fafchamps 2011). To ascertain the significance of SNs to economic efficiency in Africa, thus, the focus should be on the informal sector (Meagher 2005). Yet, apart from the works of Berrou and Combarnous (2011; 2012) and Getahun and Odella (2014), quantitative perspectives on returns of SNs in the African informal sector have rarely been the subject of empirical investigation. Even when there are studies, there are problems in establishing the causal relationship between SNs and economic outcomes (Durlauf 2002; Sabatini 2006)

The contribution of this paper is threefold. First, it is based on an original survey of the Ethiopian informal sector where network studies are rarely available. Second, the dependent variable is enterprise profit, rather than labour market outcomes as the immediate and ultimate objective of microenterprise development for informal entrepreneurs is making income. Third, using instrumental variable estimation, the paper examines the causal relationship between SNs and enterprise outcomes and determines relevance of SNs in relation to the Ethiopian institutional and cultural context.

2. Literature Review and Hypothesis

In countries where there are no social welfare systems, family and ethnic ties play more or less a comparable role to social security (Meagher 2005). Migrants to the cities, for example, depend on their kin for shelter but may turn to a wider group of co-ethnic friendship ties in search of employment opportunities. Those who do not have kin members in the city may rely on others of their own tribe or ethnic group as a substitute (Beall 2001). Family and friends are the most important facilitators for microenterprise

capitalisation, start-up and management for migrants. In Ethiopia, the collective cultural outlook in general and the conditions of informal micro-enterprises in particular favour strong family and friendship ties for continued entrepreneurship. Hofstede's (1984) study on national cultures shows that Ethiopia has a collectivistic tradition characterised by an intense and close pledge to members of a group and high level of trust within a group. Collectivist cultures focus on group obligation and interpersonal harmony and foster strong relations where everybody takes responsibility for others in a group (Hofstede 1984).

Rural-urban migration to cities is also a matter of not individual decision-making; rather it is a collective responsibility of rural households. Thus, most migrants do not suffer that much from problems of disorientation up on arrival to cities. Family and friendship networks operate in a way that newcomers are provided with accommodation and help in finding urban employment (Baker 1992). Although new migrants are provided with the needed assistance, they are expected to contribute economically to support urban and rural households whenever necessary. The easy means is self-employment in informal street activities, such as selling lottery tickets, electric equipments, kitchenware, used clothes, shoes, cigarettes, newspapers and sundry goods, shoe shining, and porterage (Baker 1992).

For financing microenterprises, migrants have to depend largely on family, friendship and co-ethnic resources rather than loans from government institutions. For example, a survey made by Haftu *et al*. (2009) shows that about 89 per cent of start-up capital for micro entrepreneurs in Ethiopia comes from friends and relatives. A study by Getahun (2015) on informal street activities in Addis Ababa also indicated that about 93 per cent of the respondents obtained start-up capital from their family and friends. There are also many informal financial institutions which meet the financial needs of micro-entrepreneurs. The very important institution is *equb*, which is a rotating saving and credit association which provides an ideal system for cash accumulation for micro-entrepreneurs requiring capital for business start-up and expansion (Bisrat *et al*. 2012). The system operates on the basis of mutual trust and members are mostly of family and co-ethnic who have confidence in each other. *Equb* thus provides an excellent platform for

saving money within the security of family and ethnic networks (Kedir and Ibrahim 2011).

Informal micro entrepreneurs work as independent self-employed with no employees. When needed, they employ members of their extended family and friends. A study by Getahun (2015) on social capital and informal economy in Addis Ababa shows that about 41 per cent of street entrepreneurs in Addis Ababa reported that children and other family members helped them with businesses after school and/or during weekends. Most micro entrepreneurs also employ co-ethnics at long hours and low wages. They do so because returns from microenterprises are very low and hence owners are unable to hire other employees outside the family. Micro entrepreneurs also use family labour in their businesses since the extended family expects to be given jobs as the family has originally helped to start businesses and wants to be rewarded for that effort once the enterprise is operational. Informal entrepreneurs rely on their co-ethnic networks to establish relations of mutual aid and partnership with other entrepreneurs in the process of production, sharing of markets and exchange of customers. They also maintain regular suppliers for the purchase of goods, raw materials and equipments through their family and co-ethnic networks (Getahun 2015).

Such kinds of networks are able to enforce social norms of behaviour, which in turn lower transaction costs in business relationships and reduce risks when systems, such as efficient contract enforcement are not given publicly (Nordman 2016). They are also helpful to penalise opportunistic behaviour, reduce market uncertainties and strengthen relations of trust among actors in a network. Trust is important for entrepreneurs as it speeds up decision-making and conserves ‘cognitive resources’ (Uzzi 1997). Welter and Smallbone (2006) explain that successful entrepreneurs are those who build networks of trust. Trust assists entrepreneurs to create legitimacy in the market and is a basic element for the performance of enterprises in conditions where actors cannot rely on formal institutions (Lyon 2000).

In the context of the Ethiopia informal sector, enterprise performance greatly depends on the presence of strong ties in which entrepreneurs are embedded. These networks affect enterprise performance in various ways

depending on the characteristics of networks. An important question here is which feature of SNs determines enterprise performance? Recent studies (e.g. Nordman 2016) emphasise network size, geographic proximity, resource endowments and the nature of the links between contacts to explain differences in the effects of SNs. Most of the studies focus on the size of SNs, approximated by the number of contacts that an economic agent maintains with other categories of agents (Nordman 2016). However, since the seminal work of Granovetter (1973) on the 'strength of weak ties', it has been widely acknowledged that in counties like Ethiopia where there are strong and dense informal networks, the intensity of ties has become an essential dimension of network studies (Nordman 2016).

According to Granovetter (1973: 1361), the strength of a tie is defined by as 'a (probably linear) combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize the ties'. Strong ties contain great emotional investment and exist among individuals that have frequent emotional contact (Granovetter 1983). In contrast, weak ties tend to exist among individuals who have sporadic and generally non-affective contact. Here, strong ties describe contacts to the immediate family, friends and co-ethnic and refer to rather closed networks; while weak ties go beyond this closed circle. The main premise of this theory is that strong ties create closed networks whereas weak ties enable access to other social circles beyond actors' own direct network. Weak ties then play a crucial role in the circulation of new information (Granovetter 1995). Strong ties seem to have a communication function by conveying information all over the network. They are important for easing access to resources needed to start a business. Conversely, unemployed workers with strong ties in their network may limit their efforts to find a job if these ties serve as a safety net (Nordman and Pasquier-Doumer 2015).

Literature on entrepreneurship is not, however, univocal and the importance of weak ties (Hoang and Antoncic 2003) is dependent on social context under study (Granovetter 1983; Krackhardt 1999). While strong or bonding ties are often considered to be socially constraining for the development of entrepreneurs' economic activity (Barr 2002), they may also be essential for

the trust required in economic transactions and activities (Granovetter 2000). Anderson *et al*. (2005) underline the importance of strong ties as a support mechanism chosen by entrepreneurs to obtain help to solve business problems. Jack (2005) also reveals that strong ties are crucial for business activity and used extensively not only to provide knowledge and information but also to preserve, enlarge, and augment business and personal status. In a study of SNs and entrepreneurial outcomes in Burkina Faso, Berrou and Combarnous (2012) found that strong ties have positive effect on entrepreneurs' economic outcomes. Similarly, using data from seven cities of Western Africa, Grimm *et al*. (2013) found that strong ties enhance the use of labour and capital resources to start enterprises.

In contrast, in a study of agricultural traders in Madagascar, Fafchamps and Minten (2001; 2002) found that weak ties are significant in accessing and sharing market information for entrepreneurs. Barr (2002) found that solidarity networks which comprise strong ties hinder economic performance. Fafchamps and Minten (2002) found a negative association between strong ties and value-added among agricultural traders in Madagascar. Likewise, in a study on the Ethiopian footwear industry, Van Staveren and Knorringa (2007) found that strong ties have limited impact on enterprise performance. In a study carried out in Guinea, Lourenço-Lindell (2002) found that while weak ties are more flexible and easily manipulated at the time of crisis, they are more vulnerable to calamity unlike strong ties. In sum, while strong or bonding ties are often considered to be socially constraining for the development of entrepreneurs' economic activity (Barr 2002), they may also be essential for the trust required in economic transactions and activities (Granovetter 2000). The strength of ties is, therefore, a core dimension of entrepreneurs' SNs and its potential effect on economic outcomes needs further examination. As informal entrepreneurs in Ethiopia greatly depend on strong ties for day-to-day business activities, in this study it is hypothesised that strong ties have a significant positive effect on informal microenterprise performance.

3. Data and Methods

3.1. Samples and Sampling Procedure

This study was conducted in Addis Ababa which is the capital city of Ethiopia. With a population of about 3,273,000 in July 2015, Addis Ababa accounts for 25 per cent of the entire urban population of the country (CSA 2013). It is a seat for many international organisations, including the African Union and the Economic Commission for Africa and is also the hub of social and economic infrastructure in the country. With rapid natural population growth and high rate of rural-urban migration, Addis Ababa is one of the fastest growing African cites. This has created unemployment problems and hence migrants are forced to join the informal sector (UN-Habitat 2008).

To obtain network data, the author followed an ego-centred network approach. An 'ego-centered network' is defined as an actor's set of relations with other actors. It is composed of a focal actor ('ego'), the ego's direct contacts ('alters'), and the ties between them (Odella 2006). It conceptualises networks to decouple the social context in which individuals are embedded and is based on 'methodological individualism' (Chung *et al*. 2005). Conversely, in the 'whole network', SNs are investigated from a socio-centered viewpoint that has a pre-defined set of actors (Odella 2006). Since the boundaries of informal entrepreneurs are very difficult to define in urban settings, examining ego-centre network data collection has become the feasible option (Marsden 2005; Carrasco *et al*. 2008). Data were collected from street vendors as they represent the most visible form of informal sector workers. Street vendors are not, however, recorded in the government statistics. This has created a problem when it comes to getting sampling frame for the study. Since there was no list from which samples can be drawn using conventional sampling techniques, a combination of 'time-space' (Muhib *et al*. 2001) and 'random-walk' (Singh 2007) sampling procedures were used.

Multi-stage sampling procedures were applied to draw samples. To gather information about street vendors and their spatial distribution, the author consulted informants in the city. Based on consultation, a two days tour was organised in the ten sub-cities of Addis Ababa to identify street vending

cluster sites. Following the tour, ten cluster sites (one from each sub-city) were identified purposively. This is done to accommodate the geographical distribution of street vending areas. Once cluster sites were identified, the author observed the date and time when vendors get concentrated in these areas. Street vendors were found working in all days of a week and 5pm–8pm is the time for their immense gathering. These specific place and time arrangements form the primary sampling units were used to construct the sampling frame. Since the space-time arrangements are sampled with a known probability, it is possible to make statistical inference about the street vendors in Addis Ababa (Muhib *et al*. 2001).

Once space-time arrangements were set, samples were drawn using systematic random-walk technique. In so doing, specific random procedures were followed depending on the nature of the cluster site. The procedure involves taking the first road right or left of the sample site and then interviewing every 2^{nd}, 5^{th}, 7^{th}, or 10^{th} street vendor or interviewing every vendor after a 2, 5, 7 or 10 feet walk right or left of the road. The application of this procedure and the number of samples drawn has varied from one cluster site to another depending on the pattern, size and density of vendors in each location. Since ethnicity and gender matter in SN formation, the sampling procedure has addressed ethnic and gender variables. Samples were then drawn from the three dominant ethnic groups*: Amhara*, *Oromo*, and *Gurage* as they account for about 84 per cent of the population of the city (CSA 2013). Sampling was conducted in such a way that first vendors from one ethnic group comprising men and women were sampled followed by other ethnic groups using the same procedure. At the time of sampling, if every 2^{nd}, 5^{th}, 7^{th} or 10^{th} vendor was not from the ethnic group or gender that is intended to be sampled, the next person was selected. Finally, considering the extensive nature of the questionnaire and the challenge of collecting data on informal entrepreneurs, a total of 254 street vendors were drawn from the ten cluster sites.

3.2. Data Collection Tools

Data were collected using questionnaire. The questionnaire consisted of street vendors' dataset and network dataset. Network data were collected using the Name Generator and Interpreter instrument. Name generators are a

set of questions that egos are asked to draw alters from an ego's network with the aim of identifying members of personal networks (Marsden 2005). Burt (1984) recommends that network surveys should include multiple name generators because they can help to clearly identify relationships and to improve data reliability. Multiple name generators also create opportunities to study the organisation of diverse types of interaction within relationships (Burt 1984). Thus, to define the SNs of street vendors, nine name generator questions were designed on the basis of regular interaction of people related to resources needed for micro entrepreneurs.

Name generators are open-ended in nature and this will lead to extended surveys. Burt and Ronchi (1994) recommend that naming five connections is adequate for analysing the role of SNs in the process of enterprise development. Besides, Yang *et al*. (2009) suggest that listing four to five names is enough to observe the true connections among actors in a network but naming above five names leads to redundancy. Moreover, Merluzzi and Burt (2013) stated that listing five names is the cost-effective number of sociometric citations to record. Thus, to limit the interview time, in this study, the number of alters that an ego can mention to each name generator question were limited to five. Respondents were given a twelve months time frame to recall alters.

After collecting a maximum of five names for each of the nine name generators, respondents were then asked to name the most important persons (from those mentioned on the nine name generators or new ones) who helped them in the various stages of enterprise development and day-to-day business activities. This helps the author to accurately demarcate the *core* networks of street vendors. The core networks were identified with the question, "who were the most important persons in your business in the last 12 months?" For this question, a total of 762 core networks with an average of 3 were mentioned. Once alter names were obtained, respondents were then asked name interpreter questions to obtain information about ego's perception of each alter, i.e. alter attributes (sex, ethnicity, religion, education, marital status, occupation, and income) and the nature of the relationship between an ego and his/her alter, i.e., social role, frequency of contact, duration of acquaintance, intensity, and level of trust).

3.3. Variables and Measurement

a) Dependent Variable: Enterprise Profit

There are various indicators of enterprise performance, such as growth in sales, business turnover, profit, assets, enterprise survival and employment growth (Garoma 2012). Employment growth is one of the most frequently used measures (Bigsten and Gebreeyesus 2007). An enterprise is successful if it increases the number of its employees. The assumption is that growth in employment size is related to enterprise profit (McPherson 1996). In this paper, the use of employment growth was not viable because street businesses are mostly managed by a single person. McPherson (1995) measured performance by enterprise age. The logic is that the longer the age in business, the more successful the business is. Study of business survival, however, requires panel data and hence is not applicable in cross-sectional studies.

Robb and Fairlie (2007) use profit as an indicator of enterprise success. Van Dijk (2005), however, argues that as business owners do not keep complete record of business transactions, they might not realise the true financial values. Despite such limitation, profit is the most widely used measure of enterprise performance (Garoma 2012). This is because the ultimate objective of enterprise formation for street vendors is earning income for their livelihoods and measuring the achievement of this objective is a primary concern. In this paper, thus, profit is used as an indicator of enterprise performance. To establish reliable profit, street vendors were asked a series of questions related to average weekly business expenses and sales volume. Profit was, therefore, calculated by reducing enterprise expenses including wages, rent, repairs, supplies, parts and maintenance. Profit is expressed in Ethiopian currency (Birr) and its logarithm is used to pull outliers from a skewed distribution closer to the bulk of data to be normally distributed. The average enterprise profit was found Birr 764.00 per month (SD= Birr 365.00).

b) Independent Variable: Strength of Ties

Marsden and Campbell (1984; 2012) discovered closeness (intensity of a relationship), duration and interaction frequency (amount of time), and the degree of mutual confiding (intimacy) as measures of tie strength. Marsden

and Campbell (2012) claimed that indicators of tie strength are highly correlated. Therefore, to evade multicollinearity between the measures of tie strength, a quantitative measure based on three dimensions (closeness, contact frequency, and trust closeness) was developed. Duration of acquaintance was excluded from the calculation of tie strength because the benefit of increased duration of acquaintance declines with the length of relationship (Marsden and Campbell 1984). Besides, the length of relationship is contaminated by the age of respondents in that old respondents may have longer period of relationships with alters because of their age than young respondents.

Information on closeness was collected on five point category. Respondents were asked to indicate if each alters named is 'a family and kin' (5), 'a friend' (4), 'a neighbour' (3), 'a workmate' (2), and 'an acquaintance' (1). Frequency of contact was also measured in five order categories with responses ranging from 'rarely' (1) to 'daily' (5). Similarly, mutual trust was measured on a five level scale ranging from 'strongly trust' (5) to 'strongly never trust' (1). For the purpose of summarising the values of the five-scaled variables and calculating average tie strength, the values were transformed into a range from '0' ('the weakest') to '1' ('the strongest') ties. This quantitative measure offers a more inclusive approach than the dichotomised measures of strong or weak ties (Berrou and Combarnous 2012). The average tie strength of respondents was found to be 0.83 (SD=0.23), showing that about 83 per cent of street vendors' business network is made up of strong ties.

c) Control Variables: Enterprise & Entrepreneur-Related Characteristics

Many variables which are expected to influence enterprise performance were controlled. Age of street vendors was controlled assuming that it does have inverse relation with profit. As an entrepreneur grows older, he/she is less likely to invest to expand his/her enterprise and hence less income achieved (Rooks *et al*. 2009). The mean age of respondents was found 30 years (SD = 8 years). Gender dummy (women=1) was included in the model to control for various characteristics, such as trouble to manage business, household duties, networks, restricted mobility, physical strength and discrimination (Khalife and Chalouhi 2013). Human capital was positively

related to profitability. Aspects of human capital that were related to enterprise profit include vocational training, formal education, and previous business experience (Kantor 2005). Formal education was included by respondents' years of schooling. The mean years of schooling for respondents was found to be 5 years (SD=4years). Vocational training was a dummy variable capturing if a respondent has training before or after starting a business (1=yes). Previous experience (1=yes) was a dummy variable examining if a respondent had business experiences before joining street vending.

Age of an enterprise is another factor that was accounted for. The proposition was that with additional age in business, profit increases. The average duration in business was found to be 7 years (SD=). The presence of a spouse may positively influence profit (Bula 2012). The researcher added a dummy variable (married=1) in the model. Indigenous ethnicity was also included in the analysis as different ethnic groups have different business behaviour (Taye 2001). Ethnicity is a dummy variable equal to 1 if *Amhara* or another 1 if *Gurage* in reference to *Oromo as Amharas* and *Gurages* are dominantly involved in the informal sector. Factors of production such as working capital and working age family members have a positive effect on profit; and hence, they were included in the model. The average working capital of respondents was Birr 1121(SD=1399). The average working age family size was 2.10 children (SD=2.01). Location dummy (1=centre) was added to control for differences in business environment across space. Furthermore, the researcher tested interaction terms by adding a term to the model in which two independent variables are multiplied. See Table 1 for the description of variables used in the regression model.

Table 1. Summary and descriptive statistics of variables used in the regression model

Variables	**Variable description**	**Exp.Sign**	**Mean**	**SD**
Enterprise profit	enterprise profit in Birr	NA	764.00	315.00
Strength of ties	the strength of relationship between network ties ranging 0–1	+	0.83	0.23
Gender	gender of the street vendor (dummy), 1 =women	-	0.50	0.50
Marital status	marital status of respondents (dummy), 1=married	+	0.31	0.46
Age of the respondent	age of respondents in years	-	29.94	8.15
Educational level	respondents' years of schooling	+	4.94	4.21
Vocational training	respondents' training before or after starting a business (dummy), 1=yes	+	0.19	0.39
Previous business experience	respondents' business experience before joining street vending (dummy), 1=yes	+	0.57	0.49
Working capital	enterprise current working capital in Birr	+	1120.95	1398.67
Working age family size	respondents working age family size	+	2.10	2.01
Location dummy	the location site of street enterprises (dummy), 1=center	+	0.44	0.49
Age of business	duration of the enterprise in years	+	6.90	4.93
Ethnic Gurage	a respondent who is ethnically Gurage= 1	+/-	0.36	0.48
Ethnic Amhara	a respondent who is ethnically Amhara=1	+/-	0.35	0.47
Gender*marital status	interaction term of respondents' gender and marital status	+/-	0.21	0.41

SOURCE: Field Survey (April–November 2014).

3.4. The Econometric Model

OLS regression model is used to determine the causal relationship between SNs and enterprise profit. The equation is written as:

$$\text{Log (Profit}_i) = \beta_0 + \beta_1 SN_i + \beta_2 HC_i + \beta_3 IC_i + \beta_4 EC_i + \mu_i$$

$$\text{Log (Profit}_i) = \beta_0 + \beta_1 SN_i + \beta_2 HC_i + \beta_3 IC_i + \beta_4 EC_i + \mu_i \quad (1)$$

Where log (Profit $_i$) is the logarithm of profit for a street vendor i; SN_i is the measure of entrepreneur i's endowment of networks measured by average strength of ties; HC_i stands for street vendor's endowment of human capital (education in years, previous business experience and vocational training); IC_i is a vector of entrepreneur characteristics (age in years, gender, working age family size marital status, and ethnic background); EC_i refers to enterprise characteristics (working capital, age of enterprise, and business location); and μ_i= unobserved disturbances and potential measurement errors.

The key assumption of the above OLS model is that networks are part of entrepreneurs' exogenous asset endowment. But in reality, this claim does not usually hold true (Fafchamps and Minten 2002). This is because SN measures might be endogenous to business profit. If SN measures become endogenous to enterprise profit, the estimated coefficients will be upward biased. To truly establish a causal claim of SNs on profit, SNs should be exogenous. The solution is the use of instrumental variables (Wooldridge 2010). In the literature, there are different IVs for network measures. For instance, Narayan and Pritchett (1999) and Glaeser *et al*. (2002) used trust; Adepoju and Oni (2012) employed length of residence in one's location; Fafchamps and Minten (2002) utilised individual's demographic characteristics. In a study of kinship networks and economic behaviour in rural Ethiopia, Werger (2009) instrumented SNs with religion and ethnicity dummies and recommended that religion dummy instruments the network measures better than ethnic dummies.

In this study, SN measures are instrumented with religion dummies due to various reasons. First, most people in Ethiopia attend religious services either daily or weekly depending on the respective sect of each religion. Churches, mosques, and other houses of worship, thus, provide an

institutional base for 'civic good works' and a learning opportunity for entrepreneurs (Hopkins 2011). Second, regular religious service attendees meet many people daily or weekly, making religious institutions as a prime forum for SN formation. Third, involvement in religious affairs offers opportunities for social interaction between likeminded people, nurtures friendships, and fosters social ties and also provides social support for entrepreneurs (Lim and Putnam 2010). Religion through worshiping places offers an opportunity to entrepreneurs to access resources for enterprise start-up and expansion (Miguel 2004). Fourth, the calculated religion homophily and heterogeneity indices of the respondents were found to be -0.73 and 0.00, respectively. This shows strong religion similarity among street vendors.

The proposal in this paper is that religious affiliation is neither directly affected by enterprise profit nor does it affect enterprise profit directly. However, religion affects the strength of relationships. In fact, in his famous essay, '*The Protestant Sects and the Spirit of Capitalism'*, Weber maintained that the protestant sect was important in the American economic growth. This influence, has, however, developed through participation in voluntary religious associations leading to social capital formation and thereby economic growth (Trigilia 2001). The model fit by IV regression is, therefore, given by:

$$y_i = \mathbf{y}_i\boldsymbol{\beta}_1 + \mathbf{x}_{1i}\boldsymbol{\beta}_2 + u_i \quad (2)$$

$$\mathbf{y}_i = \mathbf{x}_{1i}\boldsymbol{\Pi}_1 + \mathbf{x}_{2i}\boldsymbol{\Pi}_2 + \mathbf{v}_i \quad (3)$$

Where y_i = the dependent variable for ith observation, $\mathbf{y}_i$ represents endogenous regressors (SN measures), $\mathbf{x}_{1i}$ represents included exogenous regressors (endowment of human capital and a vector of individual characteristics and enterprise characteristics); and $\mathbf{x}_{2i}$ represents the excluded exogenous regressors (religion dummy). Variables $\mathbf{x}_{1i}$ and $\mathbf{x}_{2i}$ are collectively called the instruments. u_i and $\mathbf{v}_i$ are zero mean error terms; and the correlations between u_i and the elements of $\mathbf{v}_i$ are apparently non-zero.

4. Results and Discussion

The estimation results of enterprise profit by ordinary least squares and instrumental variables estimation is presented in Table 3. An assessment of variance inflation factors showed no problematic signs of multicollinearity in either model.[2] To check the robustness of estimation results, three IV estimators: Two-Stage Least Squares (2SLS), Limited-Information Maximum Likelihood (LIML), and the Generalised Method of Moments (GMM) were used. After fitting the IV estimators, tests of endogeneity were performed to check if strength of ties supposed to be endogenous in the OLS model can be treated as exogenous or not. The results show that IV estimates of the strength of ties were higher than OLS estimates and that when strength of ties and religion dummies are measured; the instruments pass a standard exogeneity test. The Hausman test, Durbin-score and C-statics values show that the SN measure is exogenous (see Table 2). This has shown that the strength of ties is exogenous and causal inference can be made

Table 2. Regression estimation results of strength of ties predicting profit

		Instrumental Variables Estimation		
Variables	**OLS**	**2SLS**	**LIML**	**GMM**
Strength of ties	-0.00036***	-0.00101**	-0.00102**	-0.00099**
	(2.68)	(2.00)	(2.00)	(1.96)
Education in years	0.00037	0.01603	0.01614	0.01533
	(0.04)	(0.99)	(1.00)	(0.95)
Vocational training(1=yes)	0.06446	0.08846	0.08866	0.08827
	(0.80)	(1.04)	(1.04)	(0.98)
Business experience(1=yes)	0.03954	0.02079	0.02069	0.02307
	(0.63)	(0.32)	(0.31)	(0.33)
Gender (women=1)	-0.30250***	-0.31767***	-0.31772***	-0.31862***
	(3.56)	(3.67)	(3.66)	(3.96)
Marital status (married=1)	0.02483	0.05525	0.05541	0.05362
	(0.21)	(0.45)	(0.45)	(0.46)
Age of respondents	0.00908*	0.00743	0.00743	0.00752
	(1.90)	(1.25)	(1.25)	(1.26)
Working age family members	0.02361	0.00020	0.00005	0.02299
	(1.15)	(0.01)	(0.00)	(0.95)
Working capital	0.00008***	0.00008***	0.00008**	0.00008***
	(2.96)	(2.87)	(2.86)	(3.37)
Business location (1=centre)	0.06915	0.01379	0.01337	0.02012
	(0.98)	(0.16)	(0.15)	(0.22)
Ethnic Gurage	0.28762***	0.21849**	0.21806**	0.22106**
	(3.50)	(2.24)	(2.23)	(2.19)
Ethnic Amhara	0.10334	0.12937	0.12950	0.12937
	(1.21)	(1.46)	(1.46)	(1.51)
Age of business	0.01427	0.00434	0.00434	0.00445
	(0.83)	(0.51)	(0.50)	(0.49)
Gender*marital status	-0.26941*	-0.28897**	-0.28903**	-0.28655*
	(1.86)	(1.95)	(1.95)	(1.85)
Constant	5.82559	5.82542***	5.82439***	5.83081***
	(23.53)	(26.52)	(26.47)	(28.60)
F statistic/Wald Chi ^{2}	7.61***	98.19***	98.02***	123.85***
R^2	0.4338	0.3400	0.3388	0.3457
Hausman test		1.89 (0.17)	-	-
Durbin score		2.08 (0.15)	-	-
C statistics		-	-	2.08 (0.15)

***Note*:** Figures in parenthesis are t-values for OLS and z-values for IV estimators.
*** P<0.01, ** P<0.05, and * P<0.10.

***SOURCE*:** Field Survey (April-November 2014).

4.1. The Effect of Strength of Ties

The core business support and discussion networks of respondents are made up of strong kinship and friendship ties with high level of mutual trust and frequent interaction. In terms of the proportion of ties, 71 per cent of street vendors' network was composed of strong ties, while 29 per cent were made up of weak ties. These results suggest that informal entrepreneurs in Addis Ababa are mostly embedded in 'bonding ties,' which confirms the prevalence of strong ties ongoing in urban areas of Ethiopia. These strong ties provide emotional and material support for street vendors. The emotional support from family and close friendship ties is important and presents a huge psychological comfort. Street vendors are often supported in terms of obtaining finance by members of their families and their close friends to survive from economic hardships. These strong ties provide a shortcut means in search for business knowledge and access to essential resources. They are more approachable, more reliable, and guarantee the transfer of both tangible and intangible resources (Granovetter 1973). They are useful for street vendors who are characterised by high levels of uncertainty and insecurity. In this regard, Uzzi (1996; 1997) notes that networks based on strong ties promote the development of trust and the transfer of quality information, as well as business success.

Despite the fact that strong ties are sources of emotional and material support for street entrepreneurs, the coefficient of strong ties is negative and has significant impact on enterprise success (see Table 2). The stronger the ties, the lower the enterprise profit, and vice versa. The result on strength of ties provides substantial evidence against the hypothesis of the study, but corroborates Granovetter's strength of weak ties argument. Given the high uncertainty and volatility of markets in the informal economy, it is surprising that strong ties appear to be inefficient for the performance of micro entrepreneurs in Addis Ababa. For vulnerable street vendors, strong ties appear to reveal a strong social constraint hindering entrepreneurial agency and economic performance. Previous research also suggests that strong social networks do not only facilitate but also hinder the behaviour of individuals due to family and kinship pressure and normative expectations (Krackhardt 1999). Where groups have strong social identities, it has been argued that strong ties are not likely to generate benefits (Podolny and

Baron 1997). The trust, length and regularity of contact of street vendors strong ties do not enable a more efficient circulation of resources (facilitate access to information, financial support, business partnership, e.t.c.). This is perhaps related to different probable causes. The first probable reason is related to the limitations inbuilt on strong ties. One of the shortcomings is that individuals may depend on strong bond support and become satisfied with what they have. This may damage individuals struggle to be successful in businesses as much as they would if they had no support from strong ties.

As argued by Elfring and Hulsink (2003), strong ties have the 'risk of over-embeddedness'. Recent empirical studies (e.g. Aral and Van Alstyne 2007; Ferriani *et al*. 2009; Molina-Morales and Martinez Fernandez 2009) also gave attention to the problem of being 'over-embedded' or too central in networks. The result of these studies shows that excessive group cohesion hinders knowledge and information accessibility among actors in the network. They showed evidence of diminishing marginal returns associated with being well connected in knowledge and information-sharing networks. This is because the group's closure may reduce the opportunities to find new and diverse information outside a given group. With more strong social relationships, there come increasing coordination costs, as more time and energy is devoted to maintain them (Ferriani *et al*. 2009). Since time and energy are exhaustible resources, increasing the intensity of social ties beyond a certain point is likely to result in diminishing returns (McFadyen and Cannella 2004). Moreover, as actors become more central in networks, they are faced with larger inflows of information and bear greater cognitive pressures associated with processing it (Dodds *et al*. 2003), potentially resulting in 'information overload' (Ferriani *et al*. 2009; Schneider 1987). In economic settings, actors suffering from information overload can have difficulty of sorting between relevant and irrelevant information, ultimately resulting in poor decision-making and thus poor enterprise performance (Schneider 1987).

Street vendors lack business ties that ensure a dynamic and flexible insertion in the local markets. Indeed, informal markets are characterised by the presence of excessive competition and instability that does not favour the presence of strong family ties. Weak business ties are likely to be more

flexible and reactive in such context. This type of 'instrumental tie', which is more easily manipulated and replaceable, is missing in street vendors' network configuration (Lourenco-Lindell 2002). Strong ties are also vulnerable to external shocks and this may prohibit commitments to obtain information that exists beyond strong bonds (Elfring and Hulsink 2003). Granovetter (1983) also argues that heavy dependence on strong ties has the impact of fragmenting entrepreneurs into encircled networks of the same actors that have little or no connections with acquaintances. Indeed, micro-entrepreneurs who are part of strong family and kinship network and who achieve economic success are often called on to share their success with less successful network members. Adverse incentives arise if concerns about moral pressure for jobs, housing, credit, or free business services by family and kinship network members discourage entrepreneurs from dealing or trading with people in these networks and from developing their economic activity (Nordman 2016).

Furthermore, the effects of strength of ties may vary according to outcome variables measured (Hoang and Antoncic 2003). For instance, Brüderl and Preisendörfer (1998) analysed the effect of strong bonds on survival and financial performance of firms and they found that strong ties had a significant positive influence on business survival but not on sales growth. In this study, enterprise success was measured by profit and strength of ties failed to predict profit significantly. At this juncture, it is possible to deduce that strong ties are vital in providing resources for business start-up and other day-to-day business-related activities of street vendors. However, tie strength was found to have significant effect on enterprise success. This result is consistent with other findings. In their study of Ethiopian footwear industry, Van Staveren and Knorringa (2007) found that strength of ties has a limited impact on enterprise performance. In contrast, Berrou and Combarnous (2012) found that strong ties have a significant positive impact on economic outcomes in the informal economy of Burkina Faso.

4.2. The Effect of Control Variables

As shown in Table 2, some results match the expectations and some others failed to go with the expected sign and strength. Human capital was one of the inputs hypothesised to influence the success of enterprises. Uneducated

people might struggle to be successful in business as it is extremely difficult for them to keep track of the flows of income in their enterprise. Even, they cannot have access to information from the print media. Therefore, human resource development should be considered as important factor to determine enterprise success (Ozturk 2001). On the human capital side, contrary to what is expected, the estimation results show that education, vocational training, and previous business experience are not significant predictors of profit. This is probably because those engaged in street vending are characterised by limited skills, low education levels, and low status. They are also engaged in micro-businesses that do not need any training and further educational background. This situation might make human capital variables to be less significant in influencing enterprise performance.

Gender had the expected negative sign and was significant at 1 per cent level. The coefficient for gender indicates that average monthly profit was 31 per cent lower for women than for men. This might be attributed to many probable causes. To start with, women do have double responsibility in taking care of household duties and managing street businesses. Most women are also working in permanent places and their businesses are located near their homes where they cannot get many customers. In addition, women start their business with low amount of capital than men. Moreover, women are engaged in very small businesses which are extensions of their reproductive role, including merchandising cooked and non-cooked food stuffs. These businesses demand low capital and generate lower income.

Ethnicity was presumed to be a factor that influences enterprise performance. As shown in Table 3, being ethnic *Gurage* was positively correlated with profit and the correlation was significant at 1 per cent level. Being *Gurage* was associated with increase of profit by 21 per cent compared with being *Oromo*. But being a member of the *Amhara* ethnic group does not have a significant effect on profit compared to being *Oromo*. This finding is consistent with other studies. For example, a study by Taye (2001) has shown that enterprises owned by the *Gurages,* despite their low educational level, perform better than those owned by members of other ethnic groups, such as the *Amharas,* who have relatively higher level of

education. This is probably because the *Gurages* are known for their hard-work and business skills. By tradition, *Gurages* also get a kind of business training from their families.

The coefficient of the interaction term between gender and marital status was negative and significant at 5 per cent level. This result implies that being married women reduces profit by 28 per cent compared to unmarried men or unmarried women. This reflects that having a spouse makes women to be in an unfavourable position because usually they are not the sole decision-makers of their businesses. According to the norm in the Ethiopian society, it is usually the husband who makes decisions in the household. Even when women are involved in some household discussions, the final decision is made by husbands. The variable working capital has a positive and significant effect on enterprise performance.

5. Conclusion

Social networks constitute an important form of social regulation in the informal sector. Informal entrepreneurs in Addis Ababa are supported by their strong family and kinship ties to start and carry out micro-enterprises. The value of being well-connected in networks is that it provides increased opportunities to capitalise resources to enterprise start-up and get information on employment opportunities. A central question in this paper was to what extent entrepreneurs' reliance on strong ties improves their economic performance. The results of the study provide evidence that strong ties are significantly less productive and do have a negative effect on entrepreneurial outcomes of street vendors. Strong ties provide benefits through risk-sharing and lower transaction costs; but, excessive dependence on strong bonds reduces enterprise performance. This corroborates the strength of weak ties theory propounded by Granovetter. Policies aiming at improving the economic situation of vulnerable entrepreneurs should, thus, take into account the fact that entrepreneurial behaviour is often heavily influenced by the decisions of family and relatives. This happens not only through learning and complementarities but also through social norms and pressure to redistribute earnings.

In actual fact, measuring and explaining the effects of social networks on the performance of micro-enterprises is not an easy task. Analysis is hampered by methodological challenges, including sampling of the hidden population, collection of network data and the measurements of social network variables. The random-walk sampling strategy employed in this study is not widely applied in other urban-based studies in Ethiopia. Instead of heavily relying on the commonly applied snow-ball sampling techniques, studies that involve hidden populations can experiment and use the random-walk procedure and improve its validity and application in a wider scale. In addition, name generator and interpreter instruments are newly developed and applied in the Ethiopian informal economy context. Therefore, it is advisable to revisit these instruments and improve their quality and reliability for wider application of network studies in Ethiopia. As networks are endogenous phenomenon, they vary from place to place and from sector to sector. Thus, to establish the importance of networks in the urban informal economy, it is essential to conduct further research in a broader scope, including other urban areas and other informal activities.

Endnotes

[1]A working definition of microenterprises in the Ethiopian context is that they are the smallest, usually informally organised businesses engaged in diverse activities, including trade, services, and handicrafts. They are typically operated by the owner and immediate family (usually unpaid labor) and the income from the microenterprises is in most cases the sole source of income for the family (Desta 2010).

[2]The mean variance inflation factor (VIF) for the ordinary least square regression model is 1.54.

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