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Jean-Philippe Berrou, François Combarrous

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Testing Lin’s social capital theory in an informal African urban economy

Abstract

In order to test Lin’s social capital theory in an informal African urban economy, this paper outlines an approach articulated around the notion of ‘ego-centred network’. We used an original dataset collected in Bobo-Dioulasso (Burkina Faso) to evaluate how member attributes in entrepreneurs’ networks tend to influence their economic outcomes. The instrument of multiple name generators provides a vast amount of information that can be used to compute quantitative measures of the composition of networks. We show that the proportion of members with a high social status have no significant positive impact on economic outcomes, contrary to more approachable individuals.

1. Introduction

Though social capital refers to a variety of social dimensions (norms, trust, networks), it may be more fruitful for empirical analysis to ‘step back from grandiose approaches’ and focus instead on the specific social components of social capital, such as social networks (Durlauf and Fafchamps, 2004: 46, 57). Actually, the role of social networks in markets and economic action, outcomes and institutions is widely acknowledged and has been studied for decades by social scientists, particularly sociologists (Granovetter, 1985; Coleman, 1988). Economists have also recently begun to address this issue, in particular by demonstrating the role of social networks in market efficiency (reduction of transaction costs, enforcement of contract; Greif, 1993, Kranton, 1996).

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3 In the current framework of states and modern institutional failure in Africa, social networks
4 and personal relations inevitably play an important part in structuring economic activities,
5 particularly for micro and small-enterprises (MSE) within informal economies. They may
6 facilitate access to a range of useful resources for entrepreneurs, for example information,
7 ideas and knowledge (about markets, activities, and skills) or financial and material support
8 (particularly in times of crisis). This is of particular significance in the case of MSE insofar as
9 it tends to compensate for the weakness of the internal resources of small firms.

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20 There are two interrelated perspectives in studies of contemporary social networks in African
21 urban informal economies and MSE (Barr, 2002; Knorringa and van Staveren, 2006). The
22 first relates to the analysis of interfirm networks in industrial sectors or clusters in developing
23 countries (McCormick, 1999; Brautigam, 1997, Meagher, 2007). The second is based on
24 literature in the field of social capital and focuses on the social networks in which
25 entrepreneurs are engaged. It attempts to evaluate their nature, role and impact on
26 entrepreneurial success and economic performance. Yet surprisingly, this perspective remains
27 relatively undeveloped since most of the empirical literature that studies individual social
28 capital in developing countries focuses on households rather than entrepreneurs, particularly
29 in rural areas (see Durlauf and Fafchamps, 2004). There is a common distinction in social
30 capital literature between bonding, bridging and linking social capital (Woolcock, 2001).
31 Bonding ties refers to relations between community members and close friends (generally
32 strong ties, such as those developed in family or ethnic groups), whereas bridging ones refers
33 to generalized social relationships across groups (and so generally weak ties). Linking social
34 capital serves to describe the ties that connect individuals to people or groups in position of
35 political and financial power. This last dimension of social networks is directly inspired from
36 the 'social resources' or 'social capital theory' elaborated by Nan Lin (1999, 2001). Lin
37 argues that the social status of network members is a predictor of the quality of resources
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conveyed by social relations. His theory covers both the access to social capital and the individual return of social capital. Regarding the last point, Lin considers that access to high social status through a network enables more efficient instrumental action.

There have as yet been very few investigations that focus on the role of this dimension of social capital in the performance of African MSEs. This paper aims to fill this gap by analyzing and evaluating its economic impact on MSEs in the informal economy of Bobo-Dioulasso (the second largest city of Burkina Faso). We suggest an approach based on the notion of ‘ego-centred network’ derived from the Social Network Analysis (SNA) research tradition (Wasserman and Faust, 1994). An ‘ego-centred’ (or ‘personal’) network is defined as one actor’s set of connections with others (Wellman, 2007). This perspective is particularly relevant to the study of informal entrepreneurs’ social networks that are often composed of a mixture of business, friendship and kinship ties. A network is thus defined as entrepreneurs’ regular social relations conveying essential resources for the current exploitation of their activity. This approach implies a description of the configuration of social networks according to three salient dimensions: network structure (size, density), the content of ties (strength, social role, exchanged resources), and obviously the attributes of members (sociodemographic, social status, professional occupation). Since this requires specific data concerning personal networks (Wellman, 2007), we conducted an original survey of a representative sample of 317 entrepreneurs between February and July 2007. In addition to sociodemographic and economic data, personal networks data were collected for a sub-sample of 278 entrepreneurs. This part of the questionnaire is based on an adaptation of the multiple names generators method (Fischer, 1982; Burt, 1984; Campbell and Lee, 1991; Marsden, 2005). The explanatory power of this approach derives from its ability to produce rich statistical information about the complex nature of informal entrepreneurs’ networks, especially with regard to the attributes of network members. Thanks to this approach,

quantitative measures of networks composition and content can be computed. From these, descriptive statistics and earning functions can be used to discuss Lin's hypothesis about access to social capital and to assess and discuss Lin's prominent social capital proposition about its individual return.

The remainder of the paper is organized as follows. Following a brief overview of entrepreneur's social networks in African MSE, section two provides a definition of the ego-centred network framework. Section three reviews Lin's social capital theory and its relevance to an African urban informal economy. Data and survey methodology, particularly the multiple name generators instrument, are discussed in section four. Section five explores the configuration of members' attributes in entrepreneurs' networks, and tests its potential effects on economic outcomes. Finally, a discussion is presented in section six.

2. Entrepreneurs' social networks in African MSE: an 'ego-centred network' framework

Interfirm networks in industrial clusters

Studies of inter-firms networks aim to analyze the role of industrial clusters in African industrialization and development, and the determinants of their success or failure (McCormick 1999). The core idea is that industrial inter-firms networks tend to favour different clustering gains called collective efficiency (Schmitz 1995). Nadvi and Schmitz (1994) argue that dense cooperative networks embedded in local socio-cultural relations favour collective efficiency. Brautigam (1997, 2003) demonstrates the positive role of ethnic business networks in the development of international relations with Asian firms in Nigerian and Mauritian industrial clusters. Conversely Meagher (2006, 2007) argues that in times of economic crisis, increasing competition and state neglect, social networks and their organizational capacity tend to be disintegrated or fragmented. Such effects may cause the

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collapse of entire industrial clusters in African informal economies, such as in the garment and shoe clusters of Igbo communities in Aba (Nigeria). By analysing the role of social networks in strengthening industrial clusters, this first perspective is connected with the second concerning entrepreneurs' social networks. However, while the first is mostly based on meso and sectoral level analysis, the second focuses on individual firms and entrepreneurs.

Entrepreneurs' social networks

Research that focuses on entrepreneurs' social networks seeks to identify the nature and types of social networks used by entrepreneurs (not only for clustered enterprises). It evaluates their role and impact on entrepreneurial success and economic performance. Most studies in this area use social capital approaches (Fafchamps and Minten, 2001, 2002; Barr, 2002). Networks and social relations are seen as a form of social capital that is useful for reducing transaction costs in a context of imperfect markets ('flea market') and modern institutional failure. From an empirical standpoint, such research work generally suggests that social networks have a strong and significant positive impact on entrepreneurs' economic performance. Such is the case for instance of agricultural traders in Madagascar, Benin and Malawi (Fafchamps and Minten, 2001, 2002). Nevertheless, in her study of the Ghanaian manufacturing sector, Barr (2002) also insists that small entrepreneurs appear to be characterized by 'solidarity networks' that reduce income variability but which have little impact on economic performance.

Within this framework, social network capital has been essentially analysed in two ways. The first is the entrepreneur membership of various (formal or informal) organizations, groups, and communities (business communities or ethnic groups for example, see Fafchamps, 2000; Knorringa and van Staveren, 2006). However, as shown by most qualitative surveys, these perspectives are likely to overlook the less formalized relations developed outside organizations and social groups, which have an important role, particularly in the formation of

trust (Lyon, 2000; Lourenço-Lindell, 2002). The second type of analysis focuses on entrepreneurs' inter-personal relationships, especially business relationships (Fafchamps and Minten, 2001, 2002; Barr, 2002). It is measured in concrete terms by the number of contacts that a firm owner tends to maintain with some category of agents in the market sphere (relations with suppliers, customers, other traders), and sometimes outside the market sphere (such as relations with bankers, public servants or politicians; see Barr, 2002). These quantitative studies provide useful general insights into social networks and African entrepreneurial dynamics (see section 3). However, these measures essentially depend on the size of the network ('number' of contacts) and provide very little qualitative information concerning the complex nature of social networks and their members. These measures may remove personalized relations from their social context. Of course, the social category of contacts carries some information but herein lies another limit. These categories are pre-defined, and there is therefore an element of risk in predicting which type of social group is useful for entrepreneurs before having demonstrated it. In addition, important ties maintained by entrepreneurs outside these categories could be overlooked.

The ego-centred network framework

The use of SNA to study economic action, outcomes and institutions has undergone considerable expansion since Granovetter's (1985) seminal paper on 'structural embeddedness'. Generally speaking, social relations between individuals are commonly viewed in this framework as interpersonal experience (each agent knows the relevant characteristics of other agents) based on interactions that enable the transmission of resources. A social network is therefore merely an aggregation of social relations. SNA rests on two methodological corpuses. First of all, social networks are defined from a socio-centred standpoint as finite sets of actors and the relations between them (Wasserman and Faust, 1994: 20). These are known as 'whole' or 'complete' networks'¹. The second defines social

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3 networks from an ego-centred standpoint (Wellman, 2007). An ‘ego-centred’ (or ‘personal’)
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5 network is defined as one actor’s set of relations with others. It is composed of a focal actor
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7 (named ego), a set of ego’s direct social contacts (named alters) and the ties between them
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9 (see figure 3, section 4). This perspective proposes a kind of ‘enriched individualism’ and
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11 uses networks to unpack the social context in which individuals (assumed to be independent
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13 of each other) are embedded (Knox et al., 2006). It is particularly appropriate for analyzing
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15 the networks of agents, the composition of which is diversified and not limited by some
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17 geographical, organizational or community boundaries. It is thus particularly relevant for the
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19 analysis of urban African informal entrepreneurs’ networks, which are often composed of a
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21 blend of business, friendship and kinship ties. Furthermore, rather than focusing on ties with
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23 some specific social category, an entrepreneur’s social network directly refers, in our
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25 approach, to the *regular social relations that convey useful resources for the current*
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27 *exploitation of their activities* (both tangible and intangible). Ego-centred networks of this
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29 kind can be described by three salient dimensions: the content of ties, network structure and
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31 the attributes of members. In order to analyse and discuss Lin’s social capital theory (Lin,
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33 1999, 2001), the focus here is on members’ attributes in an entrepreneur’s social network. We
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35 then need to clarify how this network dimension is related to economic outcomes, both
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37 theoretically and empirically.
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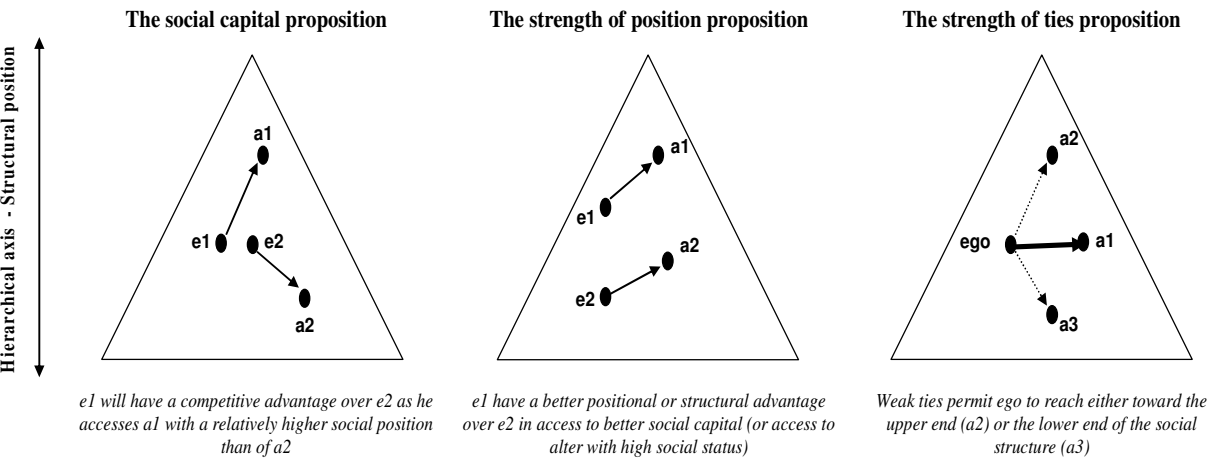
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48 **3. Lin’s social capital theory and alters attributes in entrepreneurs’ network**
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51 Lin’s social capital (resources) theory (Lin, 1999, 2001) can be considered as the most
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53 significant approach for studying alters’ attributes. Lin’s thesis is that social resources exert
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55 an important and significant effect on the realization of individual instrumental actions. The
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57 theory is based on a hierarchical vision of social structure in which the positions of agents are
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59 ranked according to their resources proxied by social status, wealth, and power. Structure
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therefore has a 'pyramidal shape in terms of accessibility and control of such resources', implying an advantage for those nearer the top (Lin, 1999: 470). The theory concludes with three chief propositions (Lin, 1999, 2001; see figure 1): (i) the 'social capital proposition': access to better social resources enables more efficient instrumental actions; (ii) the 'strength of position proposition': the initial social position influences access to social resources and their use; (iii) the 'strength of ties proposition': weak ties tend more than strong ties to give access to better social resources. The first proposition concerns the individual return of social capital and the two others pertain to access to social capital. Return of social capital can be investigated using two approaches: 'contact resources' and 'network resources' (Lin, 1999, 2001; Lai *et al.*, 1998). The first one is based on the social status of a contact mobilized for a particular, and punctual, instrumental action ('mobilized social capital'; Lin, 1999, 2001). The second one focuses 'on the networks an ego routinely maintains and the configuration of the members' resources characteristics (for example, diversity and range of resources)' (Lai *et al.*, 1998:161). Here it is the general configuration of the network that contributes to the success of instrumental actions. Social capital then represents the accessible resources used for a regular action ('accessed social capital'; Lin, 1999, 2001)². Several empirical investigations of the relationship between social capital and individual social status attainment have tended to corroborate Lin's propositions, especially regarding the job-search process, except for the 'strength of ties proposition', which appears to be more ambiguous (see Lin, 1999: 74).

In the economic literature, this approach refers to the notion of 'linking social capital' (Woolcock, 2001), which describes ties connecting individuals to people or groups in position of political and financial power. The adaptation of this theory in the context of an African informal economy has rarely been the object of empirical analysis and assessment. Notable exception includes Barr's (2002) study of the Ghanaian manufacturing sector. She

Figure 1: Lin's theoretical propositions

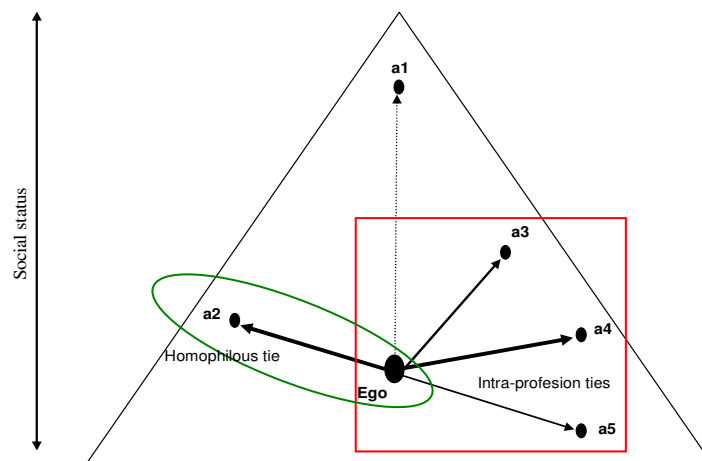


Source: Lin (2001)

distinguishes ‘solidarity’ networks from ‘innovative’ networks. Solidarity networks tend to be small, dense, locally concentrated and with poorly resourced personal relations (with no access to advantageous economic positions or privileged commercial groups). These networks are very homogeneous in terms of member attributes. Though they reduce risks and incomes variability, they have little impact on economic performance and tend to undermine rather than enhance profits (Barr, 2002)³. Conversely, innovative networks are wide, geographically dispersed, and significantly more diversified in terms of status of members. They are composed of advantageous ties with privileged access to resources. Meagher’s (2006) qualitative analysis of Nigerian clusters also distinguishes ‘survival’ networks from ‘accumulation’ ones (ties with privileged social classes, civil associations and successful traders, especially international traders). Brautigam (1997, 2003) arrives at a similar typology in her studies of the role of ‘ethnic business networks’ in cluster dynamics in Nigeria and Mauritius. Conversely, some qualitative studies also indicate that relationships with the most powerful actors may lead to unequal exchange relations of subordination and domination (Lomnitz, 1988; Lourenço-Lindell; 2002 Meagher, 2006).

These results tend to confirm the prominent proposition of Lin’s social capital theory: the core determinants of the positive impact of networks on economic performance include the

Figure 2: Alters' socioeconomic attributes in ego's network



heterogeneity of alters' attributes and the access to high social positions (access to better social resources). However, in order to avoid an overly restrictive hierarchical vision of social structure it is important to consider some other attributes. We therefore also integrate horizontal dimensions referring to the professional and socio-demographic characteristics of alters (box and circle in figure 2). Actually, professional cohesion or similarity (as between ego and a3, a4 and a5) may improve entrepreneur's efficiency (or conversely professional heterogeneity may increase the probability of accessing a range of useful resources). Regarding sociodemographic characteristics of alters, the homophilous dimension of social ties (as between ego and a2) reveals the social homogeneity of a given network, or its level of social closure, which may affect entrepreneurs' performances.

Finally, note that though not econometrically tested, the two other propositions outlined by Lin regarding access to social capital will also be briefly commented through descriptive statistics.

4. Data and method

The data

The data were collected in the informal economy of Bobo-Dioulasso in Burkina Faso, which is one of the poorest countries in the world. In 2007, real GNI per capita was estimated at US\$

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2 430 (World Bank, 2009) and almost half of its population lives under the poverty line (INSD,
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4 2003). The importance of the informal economy in this country matches regional tendencies
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6 (Brillaud et al., 2004). In Bobo-Dioulasso, it represents 49.5 per cent of local value added and
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8 68.2 per cent of employment (Fauré, Soulama, et al., 2000).
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12 Between February and July 2007 we conducted a survey on a representative sample of 317
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14 entrepreneurs. Firstly, sociodemographic and economic data were collected, focusing in
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16 particular on features, type of activity, employment, economic capital and outcomes.
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18 Secondly, the statistical information was completed several weeks later by collecting personal
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20 network data on a sub-sample of 278 entrepreneurs. The boundaries of the informal economy
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22 were empirically defined according to ILO's criteria (size of the activity and official
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24 registration) (OIT, 1993) plus an accountancy criterion. The sample is representatively
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26 distributed by economic sectors (production, trade and services) and sub-sectors, and by
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28 geographical area, from the results of the last exhaustive census of economic activities carried
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30 out in Bobo-Dioulasso (Fauré and Soulama., 2000). Among this sample, fourteen
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32 entrepreneurs have undergone an in-depth interview in 2008. Interviews were based on life-
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34 stories method: entrepreneurs tell their professional careers and the history of their businesses
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36 is embedded in this whole story. During interviews, reminder questions about the access to
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38 external resources have been used to identify the medium of access (such as social relations).
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40 In this paper, this qualitative material will only be used to illuminate the discussion of results.
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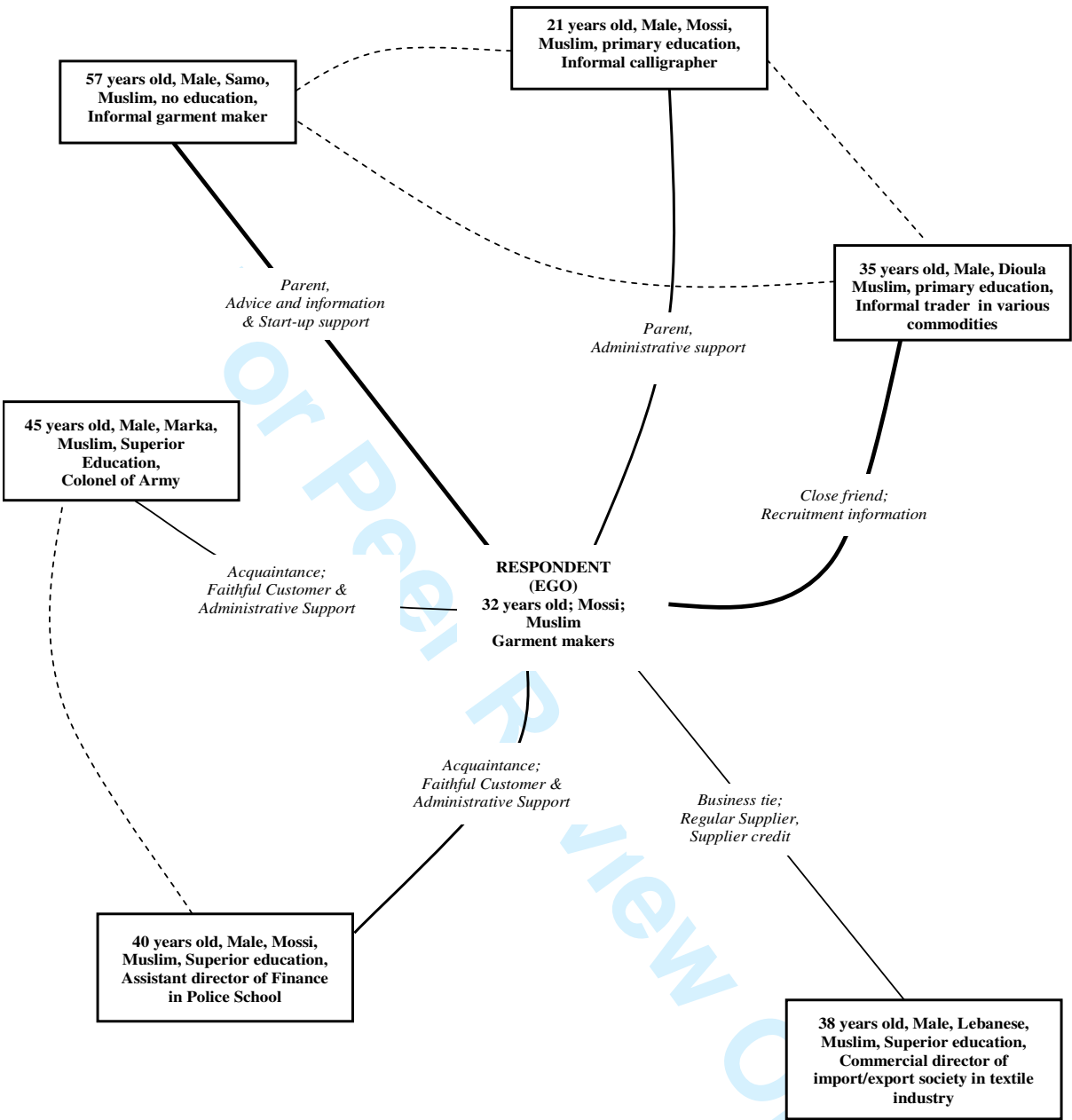
48 *The multiple names generators instrument*
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51 There are different instruments for the collection of personal networks data (Marsden, 2005,
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53 Wasserman and Faust, 1994). The name generators method is the most commonly used in the
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55 field of entrepreneurship in industrialized countries (Hoang and Antoncic, 2003; Greve and
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57 Salaff, 2003; Slotte-Kock and Coviello, 2010), but it has only rarely been used in Sub-
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59 Saharan Africa. Name generators consist of one or several questions inviting respondents
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(egos) to recall and elicit people (alters) with whom they maintains certain types of direct

relationships. They are usually followed by questions, called 'name interpreters', which gather information on alters' attributes, the relationships between ego and alter, and the relationships between alters. The name generators method has already been implemented in studies of women's social support network in rural Africa. The method has been reasonably reliable, particularly in its capacity to delineate the core of personal networks (Bignami-Van Assche, 2005; Adams *et al.*, 2006). In the field of entrepreneurship, it has been commonly used

Our instrument was constructed following several tests in order to take account of different biases identified in the relevant literature (such as memory and cognitive biases). It is based on multiple names generators (Fischer, 1982). Eight name generators were used⁴. They are defined on the basis of a criterion of interdependency or regular interaction of people involved in social relations conveying resources needed for the current exploitation of their informal activity (during the last twelve months)⁵. Seven types of exchanges or resources are used to construct the first seven generators: (i) advice, information and ideas (concerning markets, management, investment, partners); (ii) support in administrative or bureaucratic relationships (with local institutions, to obtain favours concerning tax payments, local placement or conflict resolution); (iii) regular suppliers; (iv) loyal customers; (v) cooperation or partnership (entrepreneurs who support each other, sometimes pooling resources, contacts and clientele); (vi) financial backing (as support in times of crisis, or for an investment, through loan or gift); and (vii) contact for recruitment (access to employment). Lastly, a 'contextual name generator' was inserted. This refers to important support relations at the moment of business start-up, which are invariably active in entrepreneurs' networks. In order to limit the duration of interviews, the number of alters cited for each generator was restricted to three (two for the second generator)⁶. Furthermore, in addition to the eight generators, a final name eliciting question was added for additional important contacts that may have been forgotten. Once the entire name list had been elicited (1964 names, average network's size of 7.06 names per

Figure 3: Informal entrepreneur’s ego-centred network (adapted from Burt, 1984: 298)



entrepreneurs), respondents were asked to characterize each relation from a social role standpoint (kin, friend, neighbour, business tie, acquaintance). For a representative subsample of relations (1324), complementary name interpreters focused on the content of ties (duration, contact frequency, trust intensity, context of creation), alters’ attributes (age, gender, ethnicity, schooling, occupation, status), and ties between alters⁷. Name interpreters for alters’ attributes mainly focused on observable characteristics (sociodemographic characteristics are better informed than alters’ attitudes or opinions; Marsden, 2005). In the

case of professional occupation, respondents were asked to give precise descriptions of alters' occupation and their sector of activity. This information was then ranked in classifications of professions and social status⁸. For the social status classification, level of schooling and other proxies of alter's wealth were used, such as means of transport (vehicle, moped, cycle) and residential status (owner, tenants, family yard). As an example taken from our database, figure 3 illustrates the rich data provided by the names generators instrument for the purposes of describing entrepreneurs' personal networks, especially alters' attributes.

Measurement of alters' attributes

The 'network resources' approach associated with the multiple names generators method provides a variety of possibilities for measuring the composition of networks⁹. Our analysis of alters' attributes in entrepreneurs' personal networks focuses on three different aspects. In line with Lin (1999, 2001), the first is social status. Compared to ego, we distinguish alters enjoying an *intermediate status* and alters enjoying a *higher status*. The first are principally business owners of the upper part of the informal sector (as wealthy merchants) and of the small and medium-sized formal enterprises (especially in building trade) (65%), workers and non qualified employees in the private formal sector (notably in building industry, transport and services) (15%), and minor public officials (public sector employees) (12%). The second are mostly top-ranking civil servants and intellectual and intermediary professionals in public sector (47%), business owners, senior executives, managers and officers in formal enterprises of the private sector (36%) and in NGOs (14%)¹⁰. Secondly, we also consider the professional occupation of the network's members through the proportion of alters belonging to the same profession as the ego. Thirdly, we consider the sociodemographic similarity between the ego and his alters (homophily or, conversely, heterophily). This similarity is evaluated considering four sociodemographic characteristics (age group, ethnicity, religion, and geographical location). Ties are considered heterophilic if alters are different from egos for at least three of these four characteristics.

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5. Empirical analysis

*Main features of the sample*¹¹

In Bobo-Dioulasso, as in most informal economies, the dominant form of business is self-employment. Entrepreneurs are relatively young (35.5 years in average) and their households are composed of 7.5 members on average. Only 26 per cent have an educational level above primary education. In the informal economy, training is essentially provided through traditional on-the-job apprenticeships. Most entrepreneurs follow an informal route (from family assistant to apprentice and then owner). Regarding legality, 11 per cent of enterprises are registered in an official commercial register (mostly trade activities). The localization of economic exchanges confirms the autarkical confinement of informal activities, since it is mainly concentrated in the perimeter of the city for both customers and suppliers. The measure of economic performance reveals that earnings are higher in trade and catering activities than in production and other services¹². However, the production sector is the most important in terms of employment and wage distribution.

Some comments about Lin's 'strength of ties' and 'strength of position' propositions

The total rows and columns of tables 1 and 2 give a very interesting insight into the average nature of entrepreneurs' social network and ties in our sample. However, we focus our comments on Lin's (2001) 'strength of ties' and 'strength of position' propositions.

Firstly, at ties level, we combine alters attributes and the characteristics of ties (content and strength of ties) to broach Lin's 'strength of ties proposition'. Table 1 shows that ties with lower-status alters tend more often than not to be long term and strong kinship ties (see trust intensity and reciprocity). Partnership or cooperation relations are more specifically developed with alters of *comparable status*, whereas alters with *intermediate status* often provide suppliers and financial support ties. Ties with alters enjoying *higher status* than egos provide significantly more administrative support or loyal clientele. They are also more

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2 spatially distant and less frequent. Although strong ties appear to be more important with
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4 lower status members, important dimensions of ties' strength (length, including anteriority to
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6 the creation of activity, reciprocity and trust intensity) are not significantly linked with access
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8 to *higher-status* alters. Furthermore, close friendship ties are significantly linked with higher
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10 status individuals. These observations corroborate the difficulty to empirically observe the
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12 'strength of ties proposition' (Lin, 1999). Concerning alters' professional occupation, table 1
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14 indicates that relations developed in the same profession as the ego are often business ties of
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16 partnership. Finally, socio-demographic heterophily is obviously negatively linked with the
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18 different aspects of ties' strength.
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24 Secondly, at entrepreneurs' personal networks level, alters' attributes can be crossed with
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26 entrepreneurs' (firms) characteristics. In order to proxy the initial social status of ego, we
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28 introduce entrepreneurs' level of education, their former professional status and the level of
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30 their start-up capital. These variables are useful to broach Lin's 'strength of position
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32 proposition'. Table 2 reveals that the most highly educated entrepreneurs are embedded in
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34 networks with a significantly larger proportion of alters enjoying higher social status.
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36 Entrepreneurs' former professional status shows that the higher it is the higher their
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38 probability to reach high social status alters. As a consequence, their networks are also more
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40 diversified in terms of the socio-demographic characteristics of alters (more heterophile) and
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42 less professionally homogenous. Start-up capital leads to the same kind of conclusions. Thus,
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44 these descriptive results are in line with the 'strength of positions' hypothesis. In other
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46 respects, entrepreneurs from Mossi ethnicity are less often than others linked to alters
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48 enjoying higher status. Geo-ethnic historical oppositions may explain this fact (see Savonnet-
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50 Guyot, 1986). Owners' age and experience appear to be important characteristics in accessing
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52 alters with higher social statuses. Sectoral specificities also appear. The networks of
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54 production entrepreneurs prove to be 'poor' regarding alters statuses. Trade networks are
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Table 1: Content of ties and alters' attributes (n=1324)*

Content of ties	Alters' attributes						All ties
	Lower status than ego	Comparable to ego's status	Intermediate status	Higher status than ego	Intra-profession tie	Heterophilic tie	
<i>Social Role¹</i>							
Kinship	.229	.411	.197	.163	.213	.088	.283
Close friendship	.119	.459	.201	.220	.227	.240	.240
Arms' length sociability ²	.131	.603	.173	.093	.407	.296	.293
Business	.089	.563	.231	.117	.348	.349	.534
<i>Resources conveyed¹</i>							
Advices, information & ideas	.159	.470	.199	.173	.340	.196	.262
Administrative support	.101	.329	.195	.376	.154	.242	.113
Regular suppliers	.032	.518	.391	.059	.259	.336	.166
Faithful customers	.126	.407	.275	.232	.084	.386	.215
Cooperation or partnership	.055	.871	.060	.014	.820	.203	.164
Financial support	.097	.420	.333	.150	.217	.203	.227
Contact for recruitment	.309	.423	.206	.063	.246	.229	.132
Start-up support	.159	.444	.230	.167	.281	.211	.204
<i>Length of ties</i>							
Less than 5 years	.116	.550	.192	.142	.299	.381	.331
5 to 15 years	.106	.517	.234	.143	.304	.348	.291
More than 15 years	.190	.435	.218	.158	.253	.124	.378
<i>Preexisting ties</i>							
No	.115	.541	.185	.158	.300	.371	.420
Yes	.160	.465	.234	.141	.271	.204	.580
<i>Contact frequencies</i>							
Everyday	.145	.576	.182	.096	.320	.185	.526
Once a month and more	.121	.446	.239	.194	.250	.386	.386
Less than once a month	.205	.248	.291	.256	.205	.316	.088
<i>Reciprocity</i>							
Yes	.176	.502	.189	.132	.298	.246	.616
No	.085	.488	.254	.173	.260	.319	.384
<i>Trust intensity</i>							
Low	.110	.546	.218	.126	.272	.369	.295
Intermediary	.115	.535	.207	.143	.312	.310	.322
Strong	.187	.427	.217	.169	.268	.171	.384
<i>Spatial proximity</i>							
Same neighbourhood	.168	.590	.154	.088	.331	.076	.455
Others neighbourhoods	.119	.420	.263	.198	.244	.439	.545
Total	.141	.497	.214	.148	.283	.274	-

Notes: (*) The first value in the table means that 22.9 % of kinship ties are maintained with alters whose status is lower than ego. Significantly different frequencies are in bold type in the table (independent samples t-tests; sig. 2-tailed at least <.10). Thus, this result shows that relations with lower status alters are significantly more developed through kinship ties than through others (14.1%); (1) Note that each relation can possibly be classified in two social role categories (a parent who is also a client for example), or convey several resources, which explains that the total percentage exceeds 100% for these two categories; (2) Acquaintances, labour colleagues, neighbours.

Table 2: Enterprises / entrepreneurs' characteristics and social networks alters' attributes (N=270)*

Characteristics	Proportion of lower status relations in network	Proportion of same status relations in network	Proportion of intermediate relations in network	Proportion of higher status relations in network	Proportion of heterophilic relations in network	Proportion of intra-profession relations	Total
Education							
Secondary and more	.144	.422	.222	.211	.332	.197	.263
None / Primary	.154	.519	.205	.122	.251	.315	.737
Former occupation							
Inactive or farmer	.253	.470	.153	.124	.209	.277	.141
Apprentice – familial assistant (informal sector)	.151	.531	.203	.116	.281	.329	.548
Employee - Independent (informal sector)	.118	.457	.245	.180	.265	.245	.263
Employee (formal sector)	.046	.341	.255	.358	.393	.105	.048
Start-up capital							
Low ¹	.193	.537	.168	.102	.281	.307	.500
High	.110	.451	.250	.188	.263	.260	.500
Ethnic group							
Mossi	.169	.487	.244	.100	.153	.319	.396
Other	.140	.498	.186	.175	.350	.261	.604
Length of presence							
Native from Bobo ²	.161	.525	.176	.138	.274	.291	.448
Others	.142	.461	.244	.153	.271	.276	.552
Owner's age							
Less than 25 years	.232	.525	.187	.056	.228	.359	.107
25 to 35 years	.138	.528	.202	.132	.303	.269	.444
35 to 45 years	.140	.487	.218	.155	.269	.316	.344
More than 45 years	.164	.338	.236	.262	.195	.163	.104
Sector							
Production	.127	.526	.191	.157	.264	.303	.350
Trade	.143	.545	.240	.072	.216	.433	.300
Catering	.144	.332	.282	.241	.329	.054	.120
Other services	.204	.464	.158	.173	.328	.182	.230
Length of activities							
Less than 5 years	.147	.512	.223	.123	.268	.294	.463
5 years and more	.158	.474	.189	.178	.279	.273	.537
Total	.152	.494	.209	.145	.272	.284	-

Notes: (*) The first value in the table shows that the mean proportion of ties with alters whose status is lower than ego's is 14.4 % for entrepreneurs who have at least reach secondary school). Significantly different means are in bold type in the table (independent samples t-tests; sig. 2-tailed at least <.10). Thus, this result also shows that relations with lower status alters are significantly less frequent in the production sector than in others; (1) Start-up capital inferior to the median; (2) Born in Bobo or arrived at the latest at the age of 10 years old.

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highly compact as they involve comparable status alters and a large proportion of intra-profession ties. Catering networks are characterized by significant diversity and the high statuses they give access to. The peculiarity of catering activities is not surprising insofar as informal catering is a dynamic sector in the city (see table A.1.) and also a popular meeting place where all social categories, including the highest, meet. In other services, entrepreneurs' networks are remarkable for the proportion of heterophilic relations. The important proportion of low statuses in their networks is consistent with the fact that they run small scale survival activities with low levels of economic performance (table A.1.).

Testing Lin's 'social capital proposition' on informal entrepreneur's economic outcomes

We are now in a position to assess the relevance of the attributes of network members as a predictor of entrepreneurs' economic outcomes. Ordinary least squares (OLS) regression was used to investigate the extent to which inputs, business and entrepreneurs characteristics, but also and especially member's attributes of entrepreneurs' network, help to predict informal business earnings. Regression coefficients give the change in earnings corresponding to a unit change in the appropriate explanatory variable, which is conditional on the other variables remaining constant. We may therefore assess the impact of social networks on economic performance, whatever the value of other explanatory variables.

Regarding endogenous variables, monthly sales turnovers are expressed in Francs CFA and adjusted for seasonal variations. Their logarithms are introduced in the model to lessen the impact of extreme values. Value added is computed on a monthly basis as the difference between sales turnover and intermediate consumptions and raw material expenses. Earnings are computed on a monthly basis as the difference between sales turnover and global monthly expenses, including raw materials and intermediate consumptions, current charges (including wages and rents) and financial and administrative charges. Both value added and earnings are also expressed in francs CFA and their logarithms are introduced in the model.

Two blocks of predictors were implemented, that is. usual predictor variables of informal earnings (inputs, business and entrepreneurs characteristics) and predictor variables standing for alters' attributes of entrepreneur networks. With respect to the usual independent variables in the model, the following remarks can be made. Firstly, capital input is a monetary estimation of the value of the machinery, tools, equipment and stocks owned by entrepreneurs at the time of the survey. Labour input is measured by the monthly monetary value of wages paid to business employees, whatever their status. The effective contribution of labour to earnings may thus be more easily appreciated, since the usual 'number of employees' variable is likely to suffer from serious productivity bias. Secondly, business characteristics capture the impact on earnings of engaging in retail trade or catering activities. It also considers the alleged positive impact of administrative registration, pluriactivity and the favourable economic situation during the present year. Thirdly, entrepreneurs' characteristics include variables that describe the human capital of entrepreneurs (primary education and on-the-job experience), entrepreneurial behaviour (demand anticipation), gender, ethnic group and membership of a professional organisation. The second block aims to introduce information about entrepreneurs' social networks as predictors of earnings. In doing so, we will be able to test the impact of the attributes of network members on earnings, *ceteris paribus*. We therefore introduce four additional variables in the model in order to describe the network of an ego in relation to the attributes of his alters. The first two variables in this block measure the proportion of network members who enjoy an intermediate or higher status than the ego. The third variable measures the professional homogeneity of ego's network through the proportion of intra-profession ties. Finally, the fourth variable considers the socio-demographic opening of the ego's network (its heterophily) by pointing out the proportion of heterophilic ties (regarding age group, ethnicity, religion, and geographical proximity) in the ego's network.

Table 3: OLS regression analysis summary for variables predicting value added and earnings; IV (2SLS) regression analysis summary for variables predicting turnover

Outcome variables :	log (turnover)	log (value added)	log (earnings)
Predictors ¹			
Constant	3.184 (15.11)***	2.835 (15.86)***	3.416 (14.22)***
Inputs			
Log (capital input)	.135 (2.46)**	.113 (2.11)**	.104 (1.63)*
Log (labour monthly input) ²	.383 (7.14)***	.494 (9.40)***	.160 (2.56)***
Business characteristics			
Retail trade ³	.499 (8.29)***	.177 (3.14)***	.176 (2.63)***
Catering ³	.360 (6.29)***	.250 (4.45)***	.317 (4.74)***
Pluriactivity ⁴	.034 (0.76)	.070 (1.61)	.091 (1.76)*
Administratively registered activity ⁴	.097 (1.82)*	.116 (2.36)**	.148 (2.55)**
Favourable economic situation ⁵	.075 (1.56)	.133 (2.94)***	.153 (2.83)***
Entrepreneurs characteristics			
Primary education or more	.029 (.64)	.058 (1.31)	.065 (1.22)
Experience ⁶	.037 (0.80)	.082 (1.81)*	.097 (1.81)*
Gender ⁷	.011 (.20)	-.040 (-.77)	-.028 (-.45)
Ethnic group ⁸	-.047 (-.89)	-.053 (-1.10)	-.035 (-.62)
Professional organisation ⁹	.085 (1.84)*	.120 (2.66)***	.142 (2.64)***
Demand anticipation ¹⁰	.022 (0.46)	.114 (2.38)**	.158 (2.77)***
Alters' attributes in entrepreneurs' network			
Proportion of alters enjoying an intermediate status	.205 (3.33)***	.145 (3.13)***	.130 (2.37)**
Proportion of alters enjoying an higher status	.088 (1.17)	-.037 (-.72)	-.058 (-.94)
Professional homogeneity	.043 (0.64)	.070 (1.37)	.054 (.88)
Proportion of heterophilic ties	-.113 (-1.65)*	-.079 (-1.65)*	-.101 (-1.78)*
Network's size	.067 (1.02)	.032 (.66)	.007 (0.12)
Number of obs.	251	270	270
F (sig)	16.56 (.000)	17.17 (.000)	8.04 (.000)
R ²	0.571	0.552	0.366
Adjusted R ²	0.537	0.520	0.320
Hausman test (p-value)	30.76 (0.031)	18.25 (0.439)	12.49 (0.821)
Sargan test (p-value)	0.101 (0.750)	0.078 (0.780)	0.393 (0.531)

Notes : (1) Standardized estimated coefficients are shown, t tests for unstandardized coefficients are in brackets, ***p < .01, **p < .05, *p < .1 ; (2) for independent workers, log(labour monthly input) is standardized to 3.17 for continuity purpose ; (3) dummy variable, 0 = other activities ; (4) dummy variable, 1 = activities that have experienced a favourable economic situation this year ; (6) dummy variable, 1 = entrepreneurs conducting their business since at least 5 years ; (7) dummy variable, 1 = female ; (8) dummy variable, 1 = Mossi ; (9) dummy variable, 1 = members of one or several professional organisation ; (10) dummy variable, 0 = entrepreneurs who set the level of their activity only according to placed orders and/or their productive capacities.

The reliability of OLS regression parameters may be challenged by potential endogeneity bias, notably with regard to the direction of causality between entrepreneurs' social networks and their economic performances. We therefore test whether our five social networks variables can be regarded as exogenous, by using the standard econometric procedure of instrumental variables and Hausman test. The implemented instruments refer to the network's ties created before the start up of the activity. More precisely, the picked instruments are the number and the proportion of ties created before activity's start-up and among them, the proportion of ties with intermediate status alters, higher status alters, alters in the same profession, and the proportion of heterophilic ties¹³. Sargan tests of overidentifying restrictions are also presented in table 3. It confirms the validity of our instruments. Hausman tests indicate that the exogeneity of our network variables can not be statistically rejected, except for the regression on sales turnover. Thus, parameters estimates shown for sales turnover in table 3 have been computed through IV (2 SLS) regression.

The results of regressions are shown in table 3¹⁴. Means and standard deviations are presented in table A.2, in the appendix. The three modelizations significantly predict sales turnover ($F(19, 231) = 16.56, p < .01, \text{adjusted } R^2 = .537$), value added ($F(19, 250) = 17.17, p < .01, \text{adjusted } R^2 = .520$) and earnings ($F(19, 250) = 8.04, p < .01, \text{adjusted } R^2 = .320$). The standardized estimated coefficients for significant network variables demonstrate their important part in entrepreneurs' economic outcomes. Actually, their magnitudes appear to be comparable to that of basic predictors such as capital input or favourable economic situation.

6. Discussion

The most important result of this paper is that the proportion of alters enjoying an intermediate status in the social network of entrepreneurs has a strong and significant positive impact on all economic outcomes in the informal economy of Bobo-Dioulasso. Conversely, the proportion of alters with a high social status has no significant impact. This issue is of particular interest since it partly contradicts Lin's social capital proposition (Lin, 1999, 2001).

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2 So, why are these intermediate status alters so valuable compared to higher status ones? The
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4 main explanation rests on the idea that the resources owned by intermediate status alters are
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6 particularly useful for entrepreneurs in the urban African informal economy.
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10 As intermediate status alters are mostly rather ‘well-off’ business owners, the argument must
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12 actually be especially relevant for business relationships. This is, for example, the case for
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14 supplier relationships. The organisation and dynamics of large formal private firms rarely
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16 come up to informal activities’ expectations. These last require a high degree of flexibility for
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18 their economic transactions because of the uncertainty which characterizes an informal
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20 economy in a context of economic crisis. It is thus more useful and easy to work with
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22 informal or small and medium-size formal suppliers. The analysis of life-stories that we have
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24 collected reveals that access to important resources, such as supplier credit, is easier with this
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26 kind of suppliers. For example, a garment seller told us that he has no difficulties to obtain
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28 credit with his supplier who is an important informal garment wholesaler in the central
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30 marketplace, while a wood joiner and a specialist in metal fittings express difficulties to
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32 obtain credit with some formal enterprises, because the times for payment required by
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34 suppliers are not compatible with the extended times for payment that they have to afford to
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36 their clients. Moreover, regarding clientele, the capture of a middle class clientele may also
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38 represent a crucial determinant of business success as it constitutes a more reliable clientele
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40 (creditworthy) than the informal population and a more accessible one than the upper class
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42 (who seeks for better quality products). Last but not least, as wealthy merchants are well
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44 represented among intermediate status alters, it is important to remember that they historically
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46 constitute a group of financial, political and social power in the city (Fauré and Labazée,
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48 2002).
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57 Another aspect of the value of intermediate status alters relates to their approachability,
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59 notably concerning the access to ‘social’ resources. Considering the high degree of
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uncertainty of the informal economy, approachability is of the highest importance, as for

example, when instant access to financial support is required. In most life-stories that we have collected, we observe that in time of crisis, financial support comes from approachable individuals, notably from entrepreneurs' own household members, rather than from their even more comfortable highest-rank relations. For example, a garment maker explains that the first person from who he receives financial support in time of difficulties is his wife (an administrative secretary in a private formal enterprise) whether than his village relative who is the director of one of the most important national industry in the country. Some kind of auto-restriction process prevents entrepreneurs to easily ask help from high status relations (even though they are relatives). Intermediate statuses are also particularly useful for administrative support. Although corruption in Burkina Faso mostly operates hidden in the administrative offices (INSD, 2003b), it is if need be more useful for informal entrepreneurs to have relations, for example, with the local tax officer (field employee) than with the director of the fiscal administration. Whereas he can directly deal the payment of a 'gift' with the former, it would be difficult to do the same with the latter which is in a position that strongly constrains its possibilities of action. The same kind of argument occurs with any public or private administrative service. Generally speaking, ties with employees are more useful than with executives in the relations with formal organisations and institutions. Life-stories back up this conclusion in many aspects like for example in relations with formal banks or institutions of micro finance (IMF). For example, a restaurant owner explains how she obtained five important credits from an IMF thanks to four regular customers who were employed in that bank (counter-clerks, secretaries, etc.). Without them, she would never have known how to complete her file credit application and how to manage her bank account to expose her restaurant's financial health. Social approachability is thus of the highest importance in access to social support. Furthermore, social ties with intermediate status alters are less asymmetrical than with higher status ones. Qualitative studies have tended to emphasize that relations with the most powerful actors may lead to unequal relations of subordination and domination

(Lomnitz, 1988; Lourenço-Lindell, 2002; Meagher, 2005, 2006). As Lomnitz (1988: 48) suggests: ‘The symmetry of the relationship depends on social distance: the closer the social relation, the greater the *confianza* and consequently the balance of the exchange’. When the differential of power between the two partners is important, reciprocity tends to be transformed into a ‘patron-client’ relation. Thus, when ego’s capacity of reciprocity is limited, whether he does without help or returns the offered resources through demonstrations of gratitude and loyalty. In other words, social distance between partners favours subordination.

The significant negative effect of the sociodemographic heterophily of networks is another aspect of the importance of social proximity. This result differs from Barr’s (2002) conclusion. Rather than constituting a strong social constraint impeding entrepreneurial agency, homophily seems to favour the trust required to develop economic activities. Regarding professional homogeneity, we find no evidence of its impact on economic outcomes. Thus, social diversification, often praised as a core determinant of performance, does not appear to be of great relevance here.

We have shown that intermediate status alters are extremely valuable contacts in their selves, but they may also be valuable regarding the contacts they give access to. One might consider that such relations hold an intermediary position within the local social structure (between informal entrepreneurs and the top of the social scale). Thus, they hold a particularly strategic position and fill what Burt (1992) refers to as ‘structural holes’. However, it would necessitate some unavailable specific network data to assess this idea¹⁵. Yet, in their selves, intermediate status alters remain valuable by sparing informal entrepreneurs to have direct asymmetrical relationships with high-rank alters.

The test for endogeneity bias reveals a likely reverse causality between sales turnover and network’s configuration. In that case, such result deserves a brief comment as reverse causality would only occur with sales turnover and not with earnings or value added. The joint evolution of business turnover and entrepreneur’s network seems actually coherent:

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2 increasing turnover improves the insertion in the local business environment which in turn
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4 creates new relations with customers, supplier and partners. Numerous life-stories illustrate
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6 this fact, notably in trade activities and production sector where such co-evolution often even
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8 started before the creation of present activity.
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12 Finally, this paper also raises some implications for policy-making. Our results show that in
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14 the informal economy of Bobo-Dioulasso, social networks and relations matter for small
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16 entrepreneurs, though in highly specific ways. This is of particular importance for policy
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18 intervention, since it is important to understand the role of social dynamics in the operation of
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20 local markets. To sum up our results, we find that entrepreneurs' personal networks are
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22 characterized by social proximity and closeness. Half of all entrepreneur ties concern alters
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24 with comparable social status (see table 1). Concerning their economic impact, our results do
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26 not indicate the importance of relations with high privileged social status alters but rather with
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28 intermediate ones. Herein lies the need for policy intervention. A report of the National
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30 Commission for Decentralisation for the local economic growth argues in favour of the
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32 connexion between informal sector and large, small and medium-sized enterprises of the
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34 formal sector (CND-PDM, 2002: 21). Regarding our results, since intermediate status alters
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36 are often business owners of the upper part of the informal sector and of the small and
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38 medium-sized formal enterprise, we suggest focusing on the latter rather than on large formal
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40 enterprises. In other words, policy intervention has to promote more equitable linkages
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42 between formal and informal activities (Chen, 2006), particularly by facilitating the creation
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44 of institutions which might enable the development of equitable market-based relationships
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46 (business and professional organizations, but also meeting places such as market-places or
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48 trade fairs). Such institutions would all the more be necessary since the access to intermediate
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50 status alters is likely to depend on an initial social position (see table 2 about 'strength of
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52 position proposition'). Moreover, the importance of entrepreneurs' personal ties with minor
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54 civil servants and employees for their relationships with formal organizations and institutions
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reveals a crucial lack of access to information that policy intervention may fulfill. This points to the necessity of institutions and structures that favour access to information for micro-entrepreneurs.

To conclude, further investigation on the subject is clearly required, notably regarding dynamic perspectives on social networks (Slotte-Kock and Coviello, 2010). This can be addressed through three distinct but not exclusive methods: the analysis of network formation with complete network data as in risk sharing networks studies (Fafchamps and Gubert, 2007), the collection of longitudinal ego-centered network data (it may be for example very fruitful to insert an ego-centred network item into 1-2-3 surveys; Amegashie and al., 2005) and the use of qualitative material (Durlauf and Fafchamps, 2004) like life-stories which allow to analyze the evolution and transformation of social relations and networks during the professional career of micro entrepreneurs.

References

- Adams, A.M., Madhavan, S. and Simon, D. (2006) Measuring social networks cross culturally. *Social Networks*, 28(4), pp. 363-376.
- Amegashie, F., Brilleau, A., Coulibaly, O.K., Ouédraogo, E., Roubeaud, F. and Torelli, C (2005) La conception et la mise en œuvre des enquêtes 1-2-3 en UEMOA, les enseignements méthodologiques, *STATÉCO*, n°99, pp. 19-40.
- Barr, A.M. (2002) The functional diversity and spillover effects of social capital. *Journal of African Economies*, 11(1), pp. 90-113.
- Bignami-Van Assche, S. (2005) Network stability in longitudinal data: A case study from rural Malawi. *Social Networks*, 27(3), pp. 231-247.
- Brautigam, D. (1997) Substituting for the state: Institutions and industrial development in Eastern Nigeria. *World Development*, 25(7), pp. 1063-80.
- (2003) Close encounters: Chinese business networks as industrial catalysts in Sub-Saharan Africa, *African Affairs*, 102, pp. 447-467.
- Brilleau, A., Roubeaud, F., and Torelli, C. (2004) L'emploi, le chômage et les conditions d'activité dans les principales agglomérations de sept Etats membres de l'UEMOA. Principaux résultats de la phase 1 de l'enquête 1-2-3 de 2001-2002., DT/2004/06, DIAL, Paris, France.
- Burt, R. (1992) *Structural holes. The social structure of competition* (Harvard: Harvard University Press).
- Campbell, K. and Lee, B (1991) Name generators in surveys of personal networks. *Social Networks*, 13(3), pp. 203-221.
- Campbell, K.E., Marsden, P.V. and Hurlbert, J.S. (1986) Social resources and socioeconomic status. *Social Networks*, 8(1), pp.97-117.

- Chen, M.A. (2006) Rethinking the informal economy: linkages with the formal economy and the formal regulatory environment, In: Guha-Khasnobis, B., Kanbur, R., and Ostrom, E. (eds), *Linking the formal and informal economy. Concepts and policies*, UNU-WIDER (New York :Oxford University Press), pp. 75-92.
- CND-PDM (2002), ECOLOC - Phase II. Cadre de Référence pour le Développement Economique (CRDE), Town council of Bobo-Dioulasso, Burkina Faso.
- Coleman, J. (1988) Social capital in the creation of human capital, *American Journal of Sociology*, 94, pp. 95-120.
- Durlauf, S. N. and Fafchamps, M. (2004) Social capital, *NBER Working Paper Series*, WP 10485, <http://www.nber.org/papers/w10485>.
- Fafchamps, M. (2000) Ethnicity and credit in African manufacturing. *Journal of Development Economics*, 61, pp. 205-235.
- Fafchamps, M. and F. Gubert (2007) The Formation of Risk Sharing Networks. *Journal of Development Economics*, 83(2):326-50.
- Fafchamps, M. and Minten, B. (2001) Social Capital and Agricultural Trade, *American Journal of Agricultural Economics*, 83(3), pp. 680-685.
- (2002) Returns to social network capital among traders. *Oxford Economic Papers*, 54, pp.173-206.
- Fauré, Y-A. and Soulama, S. (eds.) (2000) L'économie locale de Bobo-Dioulasso. Report at the National Commission of Decentralization and at the Municipality of Bobo-Dioulasso, IRD and UFR-SEG/CEDRES Ouagadougou, Burkina Faso.
- Fauré, Y.A. and Labazée, P. (eds.) (2002) *Socio-économie des villes africaines. Bobo et Korhogo dans les défis de la décentralisation* (Paris : IRD-KARTHALA).
- Fisher, C.S. (1982) *To dwell among friends. Personal networks in town and city* (Chicago: Chicago University Press).
- Granovetter, M. (1985) Economic action and social structure: The problem of embeddedness. *American Journal of Sociology*, vol. 91, n°3.
- Greif, A. (1993) Contract enforceability and economic institutions in early trade: The Maghribi traders' coalition, *The American Economic Review*, vol.83, n°3, pp. 525-548.
- Greve, A. and Salaff, J. (2003) Social networks and entrepreneurship. *Entrepreneurship Theorie & Practice*, 28, pp. 1-22.
- Hoang, H. and Antoncic, B. (2003) Network-based research in entrepreneurship: A critical review. *Journal of Business Venturing*, 18(2): 165-187.
- INSD (2003a) Burkina Faso. La pauvreté en 2003. Ministère de l'Economie et du Développement, Secrétariat General, Institut National de la Statistique et de la Démographie, <http://www.insd.bf/>, Ouagadougou, Burkina Faso.
- (2003b) Le secteur informel dans l'agglomération de Ouagadougou. Performances, insertion, perspectives. Enquêtes 1-2-3. Premiers résultats de la phase 2. Décembre 2000 – Novembre 2001, Institut National de la Statistique et de la Démographie, <http://www.insd.bf/>, Ouagadougou, Burkina Faso.
- Knorringa, P. and van Staveren, I. (2006) Social capital for industrial development: operationalizing the concept, UNIDO – COMPID, Vienna, Austria.
- Knox, H., Savage M. and Harvey, P. (2006) Social networks and the study of relations: networks as method, metaphor and form, *Economy and Society*, 35(1), pp. 113-140.
- Kranton, R.E. (1996) Reciprocal exchange: a self-sustaining system, *American Economic Review*, 86, pp.830-51.
- Lai, G., Lin, N., and Leung, S.-Y. (1998) Network resources, contact resources, and status attainment. *Social Networks*, 20(2), pp.159-178.
- Lin, N. (1999) Social networks and status attainment. *Annual Review of Sociology*, 25, pp. 467-487.
- (2001) *Social capital: a theory of social structure and action*. (New York: Cambridge University Press).
- Lin, N. and Dumin, M. (1986) Access to occupations through social ties. *Social Networks*, 8(4), pp.365-385.
- Lomnitz, L.A. (1988) Informal exchange networks in formal systems: A theoretical model, *American Anthropologist*, New Series, 90(1), pp. 42-55.

Lourenço-Lindell, I. (2002) *Walking the Tight Rope: Informal Livelihoods and Social Networks in a West African City*. Stockholm Studies in Human Geography 9, (Stockholm: Almquist and Wiksell International).

Lyon, F. (2000) Trust, networks and norms: The creation of social capital in agricultural economies in Ghana, *World Development*, vol.28(4), pp.663-681.

Marsden, P. V. (2005) Recent developments in network measurement, in: P. J. Carrington, J. Scott, and S. Wasserman (eds.) *Models and methods in social network analysis*, (Cambridge: Cambridge University Press), pp. 8-30.

McCormick, D. (1999) African enterprises clusters and industrialization: Theory and reality, *World Development*, 27(9), pp. 1531-1551.

Meagher, K. (2006) Social capital, social liabilities, and political capital: social networks and informal manufacturing in Nigeria. *African Affairs*, 105(421), pp. 553-582.

- (2007) Manufacturing disorder: Liberalization, informal enterprise and economic ‘ungovernance’ in African small firm clusters, *Development and Change*, 38(3), pp. 473-503.

Nadvi, K. and Schmitz, H. (1994) Industrial clusters in less developed countries: Review of experiences and research agenda. IDS Discussion Paper n°360, Institute of Development Studies, University of Sussex, Brighton.

OIT (1993), Resolution concerning statistics of employment in the informal sector, Fifteenth International Conference of Labour Statisticians, Geneva.

Savonnet-Guyot, C. (1986) *Etat et sociétés au Burkina. Essai sur le politique africain*, Karthala, Paris.

Schmitz, H. (1995) Collective efficiency: Growth path for small-scale industry. *Journal of Development Studies*, 31(4), pp. 529-566.

Slotte-Kock, S. and Coviello, N. (2010) Entrepreneurship research on network processes: A review and ways forward. *Entrepreneurship: Theory & Practice*, 34(1): 31-57.

Wasserman, S. and Faust, K. (1994) *Social network analysis. Method and applications*, Cambridge University Press, Cambridge.

Wellman, B. (2007) The network is personal: Introduction to a special issue of *Social Networks*. *Social Networks*, 29(3), pp. 349-356.

Woolcock, M. (2001) The place of social capital in Understanding Social and Economic Outcomes. ISUMA, *Canadian Journal of Policy Research*, 2(1), pp. 11-17.

World Bank (2009) World Development Report 2009. Reshaping Economic Geography, The World Bank, Washington DC.

Notes

¹ In the field of SNA, this perspective aims to describe the structure of relations within groups, clubs, organizations or other finite social sets (for example, ties between all entrepreneurs that belong to a delimited organisation, or geographical area). The issue refers in particular to centrality and power distribution within these groups.

² Our paper fit in this second perspective as we study the network mobilized in the current exploitation of the activity and not for a punctual instrumental action (as, for examples, a particular investment or recruitment).

³ According to Barr (2002), these networks characterize small businesses located on the fringes of formal institutions (informal economy), whereas innovative networks are representative of enterprises with access to formal institutions.

⁴ The detailed generators are presented in table O.A.1., see online appendix file.

⁵ The criteria of specific social exchanges (individuals involved in regular relations of material or intangible support) have the advantage of being clear and unequivocal, since they are less likely to be interpreted

differently by different respondents (Campell and Lee, 1991). The names generator instrument is thus quite different from the 'position generators' used by Lin (1999, 2001) and adapted by Fafchamps and Minten (2001, 2002), and Barr (2002). Position generators are based on predefined social positions in a given hierarchy (representative of resources valued in a society). The respondent is asked to indicate if she/he knows anyone in a particular position. It is thus quite risky to predict what type of contact position is useful for entrepreneurs before having demonstrated it. Furthermore, unlike names generators based on exchanged resources, to 'know' someone merely helps to identify 'potential' social support ties (to 'know' someone does not necessarily mean that the entrepreneur can derive resources from this person when necessary).

⁶ Statistical information about how respondents use their full allocation of three (or two) potential names for each generator is shown in table O.A.2. in the online appendix. No respondent has used the total potential of 24 names among all generators (in average they only use 30% of this total). And for each generator, very few of them have quoted the three potential names. These results allow us to consider that limiting the generators to three names does not prevent from getting a reliable estimation of network's degree or size, and more importantly, it does not prevent from perceiving the differences between entrepreneurs' network's size.

⁷ The sub-sample is made up of the first quoted names for each generator, as Fischer (1982) proposed in his survey of personal network support in San Francisco. The distribution of the only one characteristic we observed for all networks' alters quoted (the social role) is presented for the initial sample and for the sub-sample in table O.A.3. in the online appendix. This table and the related chi-square test for expected values shows that with respect to this characteristic the sub-sample is not statistically different from the entire list of names.

⁸ Professional categorization was inspired and adapted from the ECOLOC classification (Fauré and Soulama, 2000) and the Member States Industrial Classification of all Economic Activities of AFRISTAT (NAEMA in French). Social status classification was inspired and adapted from the International Standard Classification of Occupations of the OIT (ISCO-88).

⁹ Whereas names generators produce measures of networks' composition that are based on the diversity of alters' characteristics and the mean, or proportion, of alters' characteristics (see the review of Lin, 1999: 474; Lai *et al.*, 1998; Campbell *et al.*, 1986), position generators measure access to structural positions. Prominent measures used by Lin are the highest status accessible in ego's networks (network composition), and the range of status accessed (difference between the highest and lowest accessed statuses) (Lin and Dumin, 1986). In accordance with the position generator, it necessitates a relevant and precise social, or prestige, scale of occupations in the society under study (for example, 20 distinct occupations in Lin and Dumin's study).

¹⁰ Consequently, alters enjoying a *comparable status* than egos are small scale entrepreneurs and regular employees of the informal sector; and those enjoying a *lower status* include informal employees and apprentices, small farmers, and non-working population. All egos interviewed are thus of same social status as they all belong to the informal sector. Evidently there are differences between egos, notably in economic performances, but relatively to the entire social structure of the society it does not seem wrong to consider them as being part of a same social status category.

¹¹ See table A.1.

¹² Catering activities in particular tend to take advantage of the increasing urban population and changes in food behavior in urban areas. Because of successive crises, weakening of purchasing power and increasing oil product prices, more and more workers are forced to have lunch in restaurants (or 'maquis') at their workplace rather than at home.

¹³ Note that none of these instrumental variables is significantly correlated with any outcome variable.

¹⁴ The assumptions of linearity, normally distributed errors and uncorrelated errors were checked and met.

¹⁵ It would be an interesting field of investigation, but it necessitates data on alter's ties, through 'second order zone' ego-centered network data, or through 'complete networks' data.

Appendix

Table A1: Average principal characteristics of activities and entrepreneurs by sectors. (N=270; Bobo-Dioulasso, 2007)

	Sectors of activities				
	Production	Trade	Catering	Other services	Total
<i>Activities' Characteristics</i>					
Monthly balance of primary incomes (K FCFA)	60	107	171	50	85
Monthly wage bill (K FCFA)	45	11	34	20	28
Capital at resale price (K FCFA)	579	680	332	326	521
Activities' duration (years)	9,5	7,5	5,1	6,3	7,6
Commercial registration (%)	7	21	0	10	11
<i>Entrepreneurs' Characteristics</i>					
Age (years)	37,5	34,2	37,1	33,4	35,5
Household size (numbers of individuals)	8,5	7,8	6,9	6,0	7,5
Higher level than primary school (%)	14	23	42	34	26

Table A.2: Means and standard deviations for performance indicators and predictor variables

Variables	Mean	S.D.
Sales turnover (thousands FCFA)	402	660
Value added (thousands FCFA)	116	133
Monthly earnings (thousands FCFA)	85	116
Inputs		
Log (capital input)	5.269	.740
Log (labour monthly input)	3.997	.676
Business characteristics		
Retail trade	.300	.459
Catering	.122	.328
Pluriactivity	.130	.337
Administratively registered activity	.110	.315
Activity has experienced a favourable economic situation this year	.318	.467
Entrepreneurs characteristics		
Primary education or more	.648	.478
Conducting this business at least since 5 years	.537	.499
Gender (female)	.159	.357
Ethnic group (Mossi)	.396	.490
Membership of one or several professional organisation	.160	.363
Demand anticipation	.141	.348
Alters' attributes in entrepreneurs' network		
Proportion of alters enjoying an intermediate status	20.9	21.3
Proportion of alters enjoying an higher status	14.5	19.0
Professional Homogeneity	.422	.495
Proportion of heterophilic ties in network	.272	.258
Network's size	7.1	2.579

Online appendix

Table O.A.1 : The names generators

1. Advice, information and ideas

Usually, entrepreneurs know people they can ask some advices and information to, or with whom they can discuss and share some of their ideas and even some important issues concerning their business. For example ideas about how to improve and enlarge business, ideas about investment and management, or information about markets, suppliers, customers, access to credit, and so on. During the last 12 months, are there any people you have asked advices or information to, or with whom you shared ideas concerning your current business? Please name up to three people with whom you have especially discussed about that kind of things.

2. Support in administrative or bureaucratic relationships

Within the framework of their business, small entrepreneurs often face some administrative obligations and problems. They have relations with the public authorities, the municipality (Bobo-Dioulasso central town council or town hall of arrondissement), the specialized organizations (as the chamber of commerce, professional associations, labour unions), the tax office, the police, and so on, for example concerning controls and inspections for the payment of taxes, the constitution of files to access public markets, the location of businesses...Generally speaking, in your current business, is there some people you rely on to settle that kind of problems concerning administrative burdens ? Please name up to two of these people.

3. Regular suppliers (access to goods and raw materials)

Within the framework of your business, regarding the purchase of goods, raw materials and equipments that are essential to your activity's exploitation, do you have personal contacts through which you access suppliers or suppliers with whom you maintained regular relations during the last 12 months? Please name up to three of these people.

4. Faithful customers or access to customers

Concerning customers, did you have, during the last 12 months, personal contacts which allow you to regularly reach them, to improve your reputation, or do you have "faithful customers" who regularly purchase your goods and/or allow you to reach good markets? Please name up to three of these people.

5. Cooperation or partnership with other entrepreneurs

Within the framework of their current activity, small entrepreneurs often develop some relations of mutual aid, partnership or cooperation with other entrepreneurs. As for example in the case of breakdowns, or when you do not have the appropriate tool, machine or good; and even when you cooperate in the process of production, the share of markets or the exchange of customers. Who are the entrepreneurs with whom you maintained such kind of relations? Please name up to three of these entrepreneurs with whom you personally and regularly cooperated during the last 12 months.

6. Financial support

In their current business, small entrepreneurs may face some financial difficulties causing problems to maintain the business and even threatening the activity with closure. Did you recently, during the last year for example, experience some financial difficulties, cash flow problems, or important breakdowns? If yes, how did you overcome such kind of situation? Did you ever asked for financial support to anybody? In addition, some entrepreneurs may decide to invest in new equipments in order to develop their business and workshop, or to replace their machines. Did you ever received financial support for that kind of investment? Finally, when you face that kind of problems, who do you rely on for financial support or help to reach for financing (whether it is gifts, loans or advances)? Please name up to three people to which you regularly asked for financial support during the last 12 months.

7. Access to employment (contact for recruitment)

Do you have employees, permanent or occasional, wage workers, familial assistant or apprentices? Concerning those hired during the last year, were there personal contacts which served as intermediaries for their recruitment? For example you may have hired them through a family member, a neighbour, a friend, a customer, and so on. Who are these personal regular contacts which have served as intermediaries for your recruitments, or by whom you would pass to recruit somebody for your activity? Please name up to three of these contacts.

8. Support for business start-up

At the time of your business start-up, did some people support you in such a manner that you consider them as very important for you during this period? If yes, how did they support you? Moral support, financial or material help? For example, how did you constitute your start-up capital? Among these people, with whom you still have been in regular contact during the last 12 months, please name up to three.

9. Opened question

Looking at the entire name list you have quoted, are there other people who you consider as very important for you in your activity's current exploitation and who do not appear on the list? If yes, how many people did we forget? Please name one of them.

Table O.A.2 : Number of alters quoted by entrepreneurs for each names generators

N= 278 entrepreneurs (P= 1964 alters)	No name (%)	Maximum of possible names (%)	Average names quoted	Std. deviation
Advice, information and ideas	13,3	26,3	1,68	1,006
Administrative support	48,6	5,0	,56	,590
Regular suppliers	28,1	5,8	,97	,808
Faithful customers	7,6	39,6	2,08	,930
Cooperation or partnership	30,2	6,5	1,03	,872
Financial support	25,9	10,8	1,16	,934
Contact for recruitment	40,3	5,4	,86	,870
Start-up support	28,8	4,7	1,03	,836
Total	-	-	7,06	2,59

Table O.A.3.: Type of relations in the whole sample of alters (P2) and in the sub-sample (P3)*

	Proportion in P2 (%)	Proportion in P3 (%)
Close family	13,1	15,5
Enlarged family	7,7	8,8
Other kinship relations (ethnic, village)	3,7	4,0
Close friends	22,3	24,0
Acquaintances	12,4	11,6
Neighbors	4,1	3,5
Labor colleagues	13,8	14,2
Business ties	57,3	53,4
Chi-square test for expected values	11.32 (df = 7 ; p = .125)	

Note: * the total percentage exceeds 100% as one tie can be classified in several categories (a parent who is also a customer for example) ; chi-square test has not been computed on shown proportions but on the numbers of each given type of relation in each population.