Social Capital within the Urban Small-Firm Sector in Developing Countries: A Form of Modern Organization or a Reason for Economic Backwardness?

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This article explores the role of social capital created by social network membership in the small-firm sector in developing countries. Some empirical studies find that social capital hampers economic performance by creating market segmentation and inducing rent-seeking activities. Other studies observe that social capital is an important prerequisite for productive interaction among small firms. This paper offers a model of social capital governance based on the New Institutional Economics which distinguishes between inclusive and exclusive social capital. It argues that inclusive social capital furthers economic performance while exclusive social capital may not. Two case studies are included. (JEL: O12, O17, L22)

1 Introduction

This article explores the role of social capital created by social network membership in the small-firm sector in developing countries. A growing body of evidence concerning small firms in developing countries suggests that many small firms together can compensate for their individual disadvantages in economies of scale and scope if they are able to cooperate easily.[1] Attention to this question has been strongly encouraged by the success of the small firms in industrial districts of Italy, known as the "Third Italy" (BRUSCO [1982]; CAPPECHI [1989];

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BECATTINI [1990]; COSSENTINO ET AL. [1996]). One key insight from this literature is that the success of such districts is due not only to agglomeration externalities (MARSHALL [1938, 267]) but also to the social embeddedness of the participants which induces active forms of cooperation between firms. This latter factor seems to be important for the economic success of some small-firm districts in developing countries, including the footwear cluster in the Sinos Valley of Brazil (SCHMITZ [1995a], [1995b]) and the surgical instruments cluster in Sialkot, Pakistan (NADVI [1998], [1999]).

These studies stand in contrast to the findings on social capital in the small-firms sector which are based on the informal-sector approach.[2] Empirical studies of this literature find that the small-firm sector is not characterized by easy entry and unconstrained competition contrary to what had been suggested by neoclassic dual-labor-market models [LEWIS 1953] or as was assumed in the influential ILO KENYA REPORT [1972]. Many studies reveal that the small-firm sector is highly organized and regulated through informal rules shaped by social capital (JAGANNATHAN [1987]). For example, DE SOTO [1989] documents that membership in social groups is crucial for access to many economic opportunities in the informal-sector in Lima, Peru. Consequently, "[i]t takes a fair amount of time and resources to establish and cultivate a wide network of friends, "uncles", and "cousins," and this hinders the development of wide, efficient markets." (DE SOTO [1989, 166]) Hence, social capital is costly to maintain and, moreover, may segment the market and thereby reduce potential gains from trade.

These varied findings suggest that social capital can be an important lubricant for the organization of economic activity; yet it may also hinder economic performance by absorbing

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[1] For an overview of this literature see RABELLOTTI [1997].

[2] The term "informal sector" goes back to KEITH HART [1973]. For an overview see TURNHAM AND SALOMÉ [1990]; PORTES [1994].

scarce resources and segmenting markets.[3] However, the literature has so far failed to provide an analytical framework which addresses the conditions under which these opposing forces dominate. This paper offers such a conceptual framework, based on the New Institutional Economics.

The following section of this paper conceptualizes social capital as a specific form of governance. The reference to a broad body of literature suggests that social capital in developing countries influences economic activities substantially. I then introduce the distinction between inclusive and exclusive social capital. The paper argues that social capital in general functions as an "amplifier", that is, it can reinforce any economic outcome, whether efficient or inefficient. However, the strength of social capital as an "amplifier" depends on the openness of the social network within which social capital is created. The latter part of the paper examines small firm clusters in Pakistan and India. The relative success of these clusters is consistent with this argument.

2 *Social Capital Governance: A Theoretical Framework*

In this paper social capital is defined as the means which sustains cooperation between individuals by virtue of mutual inclusion in a social network.[4] The distinctive feature of social

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[3] Since the publication of PUTNAM's [1993] *Making Democracy Work*, social capital has become a topic of extended research in developed and developing countries (for an overview see FINE [1999] and ADLER AND KWON [1999]). While the basic tone in the current debate is to emphasize the benefits of social capital and its importance for economic performance, some persistent voices argue that social capital also has a downside which hinders economic performance (PORTES AND LANDOLT [1996], STOLLE AND ROCHON [1998]). In their empirical cross-country study, KNACK AND KEEFER [1997] find no correlation between social capital created in social networks (associational activity) and economic growth. Thus, social capital based on social network membership remains an open and interesting puzzle.

[4] There is no generally accepted definition of social capital. For a discussion of definitions used in the literature see ADLER AND KWON [1999]. Membership in social networks is an important part of the definition of social capital used in this paper. This definition contrasts with those which measure social capital as general level of trust and civic virtues present in a society (KNACK AND KEEFER [1997]).

capital, therefore, is that it inheres in *relationships* among individuals (COLEMAN [1988, S98]. That social capital is a matter of "relationships" implies the logic of inclusion and exclusion. For any given social network, some individuals are included while others are excluded. From the standpoint of the New Institutional Economics two aspects are important here. First, the structure of inclusion/exclusion is a prerequisite for a powerful and simple form of governance based on self-enforcing contracts. The possibility to exclude a non-cooperative individual from further transactions within a network may constitute a punishment strong enough to render a network self-enforcing (section 2.1). But second, if entry into a social network is constrained either because inclusion is conditional on the possession of a non-acquirable social attribute or because inclusion requires costly activities (exclusive social capital), then the scale and scope of possible exchanges are reduced. Moreover, to the extent that network entry is constrained but contestable, rent-seeking activities among individuals outside a network may take place (section 2.2).

2.1 Social Capital and the Governance of Economic Relations

The problem of social order or the governance of economic relations is a predominant concern in the New Institutional Economics (NORTH [1990] and WILLIAMSON [1979], [1985]). WILLIAMSON [1998, 37] defines governance as "the means by which *order* is accomplished in a relation in which potential *conflict* threatens to undo or upset opportunities to realize *mutual* gains". This definition focuses on the possibility of opportunistic behavior in a world characterized by uncertainty. The main function of a governance mechanism, therefore, is to align incentives in order to overcome moral hazard, adverse selection and hold-up problems in prisoners'-dilemma types of situations. Economists are mainly interested in social capital

because of its impact on the governance of economic relations, hence the term "social capital governance".[5]

In a very stimulating paper SPAGNOLO [1999] develops a precise and rigorous conception of social capital as a specific form of governance. Because he distinguishes explicitly between social interactions (social game) and production interaction (economic game), his model has considerable analytical power. This model is based on two *linked* infinitely repeated prisoners' dilemma in the spirit of the model of multimarket contact developed by BERNHEIM AND WHINSTON [1990].[6] The underlying idea of multimarket contact is that "[firms which compete against each other in many markets] may hesitate to fight local wars vigorously because the prospects of local gain are not worth the risk of general warfare." (BERNHEIM AND WHINSTON [1990, 3]) The linkage of the two games serves to pool the incentive constraints in the two games. The fact that individuals play not only an economic game but play also a social game alters their strategic environment in a substantive way. A deviation in one game will be met with subsequent punishment in both games. For example, when a sub-contracter supplies bad footwear quality, he will be punished not only by the cheated individual as end producer who will no longer buy supplies from him, but also by this individual as his brother, neighbor, party colleague, and so on.

Consider the strategic form of the pair of infinitely repeated two-player games in Figure 1, where each player selects two actions: to cooperate (C_e) or to defect (D_e) in the economic game, and to cooperate (C_s) or to defect (D_s) in the social game.

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[5] Of course, social capital serves as more than a governance mechanism. For instance, it also influences the stock of human capital and the ease of its acquisition (BOURDIEU [1983] and COLEMAN [1988]).

[6] This paper does not adopt SPAGNOLO's difference between "strictly linked" and "linked" games. Instead it refers to BERNHEIM AND WHINSTON [1990] who establish a perfect equilibrium with the

Figure 1

		Player *j*	
		C_t	D_t
Player *i*	C_t	c_t/c_t	b_t/a_t
	D_t	a_t/b_t	d_t/d_t

The payoff structure of the two games is assumed to satisfy $a_t > c_t > d_t > b_t$ and $2c_t \geq a_t + b_t$, where $t \in \{s, e\}$. Both player are assumed to have the same discount factor $\delta_t \in (0,1)$. When both players treat each game separately, cooperation in the game *t* (C_t, C_t) is self-enforcing if $c_t/(1-\delta_t) \geq a_t + \delta_t d_t/(1-\delta_t)$. Furthermore the game *t* yields *positive enforcing power* P_t, if

$$P_t = \frac{(c_t - a_t) + \delta_t(a_t - d_t)}{1-\delta_t} > 0 \tag{1}$$

Notice that P_t is an increasing function of δ_t and c_t and a decreasing function of a_t and d_t. When the players face each other in both games (linked game), they consider the consequences of their action in both games so that the linked game is self-enforcing if and only if $P_s + P_e \geq 0$. Notice that when this condition holds, cooperation in the linked game may emerge even if one of the games in the linked game is not self-enforcing (for instance $P_e < 0$). According to SPAGNOLO [1999], social capital is then defined as the *positive enforcing power* (P_s) in the social game which is transferable to the economic game when the games are linked.

property of "strict linkage" in the terminology of SPAGNOLO [1999, 6]. In the following, I use simply the term "linked" games.

It is reasonable to assume that in a changing environment such as the small-firm sector in developing countries, economic relationships themselves are rarely self-enforcing. Thus, it is assumed $P_e < 0$. In developing countries, the business environment is often very insecure because of economic, political and institutional instability. In such an environment, the future is often so uncertain that the discount factor (δ_e) is not sufficiently high to sustain cooperation in economic relationships (ELWERT ET AL. [1983]; DE SOTO [1989]; NORTH [1990]).

The question then is whether the social game yields sufficient social capital P_s to sustain cooperation in both games. Notice that social capital governance is conceptualized as a stronger governance mechanism than the simple self-enforcing contract, but is still based on the idea of self-enforcing contracts. Social capital governance operates under the following conditions.

- First, the two games must be linked. This means that both players face each other in both games. They will then consider the consequences of their actions in both games. Accordingly, if one player defects in one game he expects to be punished in both games. In this sense, the linkage of the two games serves to pool the incentive constraints of the two games (BERNHEIM AND WHINSTON [1990, 3]).
- Second, assuming that $P_e < 0$, social capital governance occurs when positive enforcing power in the social game exists. This implies that either the discount factor in the social game is higher ($\delta_e < \delta_s$) given an identical or stronger incentive structure in the social game, or the incentive structure is stronger in the social game given an identical or higher discount factor in this game.

- Third, P_s is large enough to compensate for the negative enforcing power in the economic game ($P_e + P_s \geq 0$). Otherwise due to the linkage of the two games, cooperation will break down in both games, even when the social game itself is self-enforcing ($P_s \geq 0$).[7]

(a) Linkage between Social and Economic Games

Assuming players behave rationally, in the linked game they consider the consequences of their action in both games and choose their actions with respect to the total expected payoff over the two games. In practice this result, however, is not necessarily followed. For instance, sociological literature describes modern societies in contrast to traditional ones as *functionally differentiated*. This means that in these societies individuals tend to separate different spheres of life (LUHMANN [1985]). They may try to avoid playing linked economic and social games – ("don't do business with friends") – or they may clearly separate their roles in the economic and social game – ("business is business and family is family"). However, in developing countries functional differentiation is often not as widespread as in developed countries. In such settings, therefore, knowing the social game is crucial to understanding the functioning of other games such as politics and business, as many scholars have pointed out (see for instance BERRY [1989] , JAGANNATHAN [1987], and PLATTEAU AND HAYAMI [1997]).

[7] Notice that if payoffs in the two games are substitutes, linking the two games *may* allow both games to be self-enforcing even when cooperation is not sustainable in any game. The reason is that in this case the total cooperative utility of the linked game may be higher than the sum of the cooperative utilities of both separate games (for more details see section 4 of SPAGNOLO [1999, 11]). The result presented in this paper is based on the assumption of additively separable utility functions with respect to the payoff in the social and economic game.

(b) Social Capital as Positive Enforcing Power

Social capital governance occurs, first, when the discount factor in the social game is higher than in the economic game given an identical or stronger incentive structure in the social game. The discount factor expresses the relative value an individual assigns today to a benefit which she expects to obtain in the future. This expectation is shaped by two aspects. First, in an environment which is characterized by a high level of physical, economic, and institutional uncertainty, the discount factor is low because the probability is small that benefits in the future will be realized. Second, the time horizon depends also on the probability that the existing relational setting will become obsolete as new and better opportunities emerge Accordingly, individuals who expect to be more mobile across relational settings will have a lower discount factor (OSTROM [1990]).

The assumption that the discount factor in the social game is higher than in the economic game is plausible because social relationships are often expected to last one's whole life. This long time horizon is especially true within families (POLLAK [1985, 585]), which play an important role in developing countries (HART [1973], [1988]; ELWERT [1980]; SEIERUP [1996]). These relationships are characterized by what anthropologists call "generalized reciprocity", which means that people expect exchanges to balance only in the long run (SAHLINS [1972]). Correspondingly, TAYLOR [1982, 28] characterizes reciprocity as a "combination of what one might call short-term altruism and long-term self-interest."

Some weaker forms of social ties may also be characterized by a higher discount factor. For instance, merely living in a specific geographical location may imply a long-lasting orientation. Residing in a neighborhood may create social capital even when stronger ties of family membership or friendship are absent. DIPASQUALE AND GLAESER [1999], for example,

show that homeowners are better citizens than those who rent and are not as committed to a specific place.

The second source of social capital governance is a stronger incentive structure in the social game than in the economic game given $\delta_e \le \delta_s$, that is when cooperation is more attractive and/or punishment is more severe in the social game. There are various reasons why this might occur. First, social networks may fulfil important functions such as childcare, neighborly help, security and so on which cannot be obtained or are too expensive outside the network. It is obvious that functional dependency may yield a considerable amount of social capital. Second, humans are "social animals" and to be socially accepted and to be esteemed by others is an important part of an individual's utility function (ANNEN [2000]). Many experiments indicate that status considerations play an important role in the individual's decision-making (KURAN [1995]; FRANK [1985]). This means that to be socially related has an intrinsic quality, independent of the actual function the relationship is supposed to satisfy. In *The Theory of Moral Sentiments*, ADAM SMITH [1968] recognized that social approval or disapproval represents an essential need of every human being. Third, social networks have the power to impose severe punishments. The literature on peer monitoring emphasizes that social networks have a comparative advantage in dealing with asymmetric information (STIGLITZ [1990]; ARNOTT AND STIGLITZ [1991]). Their information advantage is also helpful in fine-tuning the implementation of punishments. Furthermore, shame and social exclusion may themselves constitute powerful means of punishment. In the surgical instrument cluster in Pakistan, for example, the ultimate sanction a kinship can impose is to declare someone to be a "non-person" in the society. Such an individual becomes vulnerable and is disgraced (NADVI [1999,

152]). Given the magnitude of rewards and punishments in the social sphere the incentive structure in the social game may often be stronger than in the economic game.

(c) Social Capital Governance: The Risk of Losing Everything

The third requirement is that social capital (P_s) is large enough to compensate for the negative enforcing power in the economic game – i.e., $P_s + P_e \geq 0$. When this condition is not met, cooperation breaks down in the linked game even when the social game by itself is self-enforcing. In this case, linkage of games results in the loss of cooperation in both games, leaving the players worse off than if the games were not linked.

Such complete breakdowns are not unusual in the process of economic change. For example, when the accumulation of money suddenly becomes possible in a traditional society, the individual's functional dependency may fall, which reduces social capital. ELWERT [1980, 699] shows that the growing economic independence of Ayizo women, an ethnic group in West Africa, let to a high rate of their leaving their marriage partners.

To summarize, the discussion so far has indicated that the creation of social capital in social relationships, in particular in developing countries, may be substantial. The interaction between social and economic relationships has been modeled in a formal game which indicates the powerful effect the social game can have on the economic game. It must be emphasized that social capital once created, can affect *any* economic game, whether efficient or inefficient. As SPAGNOLO [1999, 4] points out, cooperation in the economic game can mean enhancing productivity or impairing it by forming "counter-productive collusion". For example, social capital may enhance cooperation between small firms in a footwear cluster or

between individuals in the Mafia. Social capital by itself is neutral: its impact depends on the context within which it operates. That is, *social capital works like an amplifier by strengthening an outcome, the quality of which is determined elsewhere.*

The next question which then arises, however, is what factors determine the strength of social capital as an "amplifier". I argue that its strength depends on the openness of the social network within which social capital is created.

2.2 *Inclusive and Exclusive Social Capital*

Social capital governance sustains cooperation only between individuals who are member of the same social network. An important question is then, whether social networks are able to adapt their membership structure to new emerging business requirements. In particular, it is important to know whether admission of new members into a pre-existing network is possible. This aspect is captured by introducing the difference between inclusive and exclusive social capital. Inclusive social capital is defined as social capital which is created in *open* social networks, where the admission of new members is not hindered by constraints. In contrast, exclusive social capital is defined as social capital created in *closed* social networks, where admission into the network either requires some costly activities by the outsider or is exclusively based on a non-acquirable social attribute such as race, family membership, caste, and so on, which makes admission of new members difficult or even impossible.[8] The distinction between inclusive and exclusive social capital is analytically helpful. In practice, however, these two forms must be considered as the two extremes of a continuum.

Exclusive social capital may have the following negative consequences:

[8] For a model explaining such forms of "statistical discrimination" see AKERLOF [1976].

- First, exclusive social capital causes market segmentation and this may considerably reduce the gains from trade, especially in a dynamic industry where exchange needs change rapidly.
- Second, to the extent that social networks are closed, and entry by the outsiders is contestable, exclusive social capital induces rent-seeking activities among the outsiders. Similar costs can emerge within vertically differentiated networks where members compete for better positions within the network.

(a) Costs of Market Segmentation

There are several reasons why social capital created in closed networks may impede economic performance: First, gains from exchange are limited because exchange takes place only within a limited range of persons. Accordingly, economies of scale and scope are reduced. Furthermore the capacities, aptitudes, and talents of the members in the social network may fail to mesh with the requirements for the specific economic activity (POLLAK [1985]). Consequently, the degree of specialization and the division of labor are low (Smithian growth). This point needs emphasis, especially with respect to small-firm clusters. It is generally accepted that a greater division of labor across small firms enhances the productivity of a small-firm cluster. For example, RABELLOTTI AND SCHMITZ [1999, 99] show that the division of labor is less in the Mexican footwear clusters in Guadalajara and Leon than in the more successful Brazilian footwear cluster in the Sinos Valley. A possible explanation is that social capital in the Brazilian cluster is created in rather open social networks based on "localness" and open business associations which serve as the political voice of the whole Sinos Valley (SCHMITZ [1995a]). In the Mexican case, in contrast, cooperation between firms

goes strongly along family ties, a fairly exclusive form of social capital (RABELLOTTI [1997, 119]). This illustration is, of course, not conclusive, but it is consistent with the argument.

Second, Schumpeterian growth may be limited because exclusive social capital increases path dependency caused by cognitive limitations (DENZAU AND NORTH [1994]; NORTH [1995]). "Part of the explanation of path dependence must come not only from the way institutions bind alternatives, but also from the way perceptions equally limit the choice set" (NORTH [1995, 24]). The diffusion of new ideas which are important for improving existing routines in a network is reduced because potential members with a different background and different experience are excluded. This point has been examined in the sociological literature which emphasizes the superiority of weak ties over strong ties. Strong ties are viewed as less beneficial than weak ties because they generate redundant information since "the stronger the tie connecting two individuals, the more similar they are." (GRANOVETTER [1973, 1362]).[9]

The disadvantages of exclusive social capital are especially pronounced in industries which are undergoing rapid changes. Under these circumstances, exchange needs may change rapidly making pre-existing economic relations obsolete. In contrast, exclusive social capital may be less harmful or even advantageous in industries in which technological change is limited. This may explain why the diamond industry which has long been dominated by Orthodox Jews has done very well, despite the exclusive quality of social capital in this sector (BERNSTEIN [1992]). Another interesting illustration is GREIF's [1994] comparison of the Maghribis traders, who enforced long-distance trade through exclusive social capital, and the Genoese merchants, who built on formal legal and political enforcement. At the end of his paper GREIF [1994, 943] speculates that the Maghribis traders were possibly driven out by Genoese traders

[9] For a discussion and a criticism of this argument see KRACKHARDT [1992].

because formal institutions allowed a greater inclusiveness which is important for capturing gains from exchange, especially when the division of labor is becoming more important.

(b) Costs of Rent-Seeking

Rent-seeking occurs when those outside a social network compete to influence the entry decision in their favor. The mere existence of a high prize for admission does not necessarily imply that rent-seeking occurs. For example, IANNACCONE [1992, 275] argues that extreme behavioral requirements like wearing special robes, abstaining form caffeine and tobacco, and so on stipulated by religious communities may in fact be useful because only individuals who are deeply committed to the network are willing to carry out these costly and unpleasant requirements. CAMERER [1988] makes a similar point when he argues that the custom of gift-giving observed in most societies may serve as a signal of a person's intentions about future conduct in a relationship. Rent-seeking, in contrast, occurs when gift-giving becomes a strategic game among outsiders, based on the logic of a positional arms race. In this case entry is conditional not on a fixed contribution (a prescribed gift or stipulated norms of conduct) but on the relative success of efforts undertaken by one individual compared to others. Experiments show that such positional arms races easily escalate so that individuals spend more on an object than it is worth to them (DAVIS AND REILLY [1998]). This results in socially inefficient patterns of investments, as emphasized in the literature on rent-seeking (BUCHANAN, TOLLISON AND TULLOCK [1980], TOLLISON [1982]). In this context, outsiders may spent too many scarce resources seeking admission to the network. In extreme cases their expenditures may even exceed the expected payoff of being a network member (overdissipation).

To illustrate this point, DE SOTO's [1989] describes how much time and effort an individual must spend to be accepted by established sellers given fierce competition for attractive locations among new potential entrants. Another example is Mafia membership in southern Italy. GAMBETTA [1988, 163] points out that the persistence of the Mafia is due to the general existence of distrust and, more importantly, to the individual's ambition to prevail over his peers and to benefit from exclusive rights. The Mafia organization responds well to this environment by playing the game of "le pouvoir de la faveur" which overpowers considerations of justice and merit. Rent-seeking costs here are substantial. In this case rent-seeking activities are undertaken not only by outsiders who wish to enter the network but also by insiders who are competing for favors within the network. This may account for PUTNAM's [1993, 175] view that "vertical networks are less helpful than horizontal networks in solving dilemmas of collective action."

In open social networks, on the other hand, rent-seeking activities do not emerge. An example is the conversion to Islam in Africa as described by ENSMINGER [1997]. From a transaction-cost perspective, Islam provides important economic benefits to individuals because of the institutional advantages in long-distance trade. "Islam was a powerful ideology with built-in sanctions which contributed to considerable self-enforcement of contracts" (ENSMINGER [1997, 7-8]). Being a Muslim involves costs such as the time spent in prayer; however, conversion does not involve rent-seeking. In this context it is important to remember that religious communities often value a large and growing membership for its own sake; world conversion is a stated goal of many religious communities (IANNACCONE [1992, 274]). Social capital governance based on such open religious communities provides economic benefits without causing market segmentation and rent-seeking costs. PLATTEAU [1994, 551]

identifies religion and the possibility of conversion as a means to enlarge the community space and therefore to increase the gains from trade.

3 Social Capital Governance and Small Firms in Developing Countries

Several recent studies have examined small-firm clusters in developing countries. Many of these studies suggest that social capital is a significant factor in explaining the success or failure of small firms in developing countries. For instance, KYLE [1999] reports on the Otavalo Indians in Ecuador and the role of social capital in the production and marketing of handicrafts and traditional textiles. SCHMITZ [1995a], [1995b] points to the importance of social capital created in neighborhoods ("localness") and in business associations and other self-help institutions for the successful development of the footwear cluster in the Sinos Valley in Brazil. Similar reports can be found for the flourishing clothing-cluster in Lima, Peru reported by VILLARÁN [1998], and the success of the surgical instrument cluster in Sialkot, Pakistan extensively described by NADVI [1998], [1999]. The role of social capital has also been studied in less successful cases. For instance, RABELOTTI [1995], [1997] describes the development and the problems of the footwear cluster in Mexico after trade liberalization in 1988. Here, various programs have been introduced with the explicit goal of establishing social linkages among firms which go beyond family ties. In short, the goal is to convert exclusive social capital into inclusive social (RABELLOTTI [1997, 120]). KNORRINGA [1996] analyzes the negative impact of social capital created by caste membership on the economic performance of the footwear cluster in Agra, India.

Because the underlying approaches of these studies vary considerably, simple quantitative comparisons are not very useful. Instead, I will select two cases for the analysis in qualitative

depths: the very successful surgical cluster in Pakistan NADVI [1998], [1999], and the poorly performing footwear cluster in India KNORRINGA [1996]. Both of these studies are explicitly concerned with the role of social capital.

3.1 Surgical Instrument Cluster in Sialkot, Pakistan

The surgical instrument cluster is located in Sialkot, Pakistan, a provincial town with around 500,000 habitants.[10] It consists of 300 core firms, mainly small firms with less than 20 workers each, which produce over 2000 different types of stainless steel instruments used in medicine, surgery, dentistry, and veterinary work. Most of the firms are owned and managed by families. These firms are supported by 1500 specialized subcontractors and an additional 1000 suppliers of ancillary services. After Germany, this cluster is the second largest exporter of such products, accounting for 20 per cent of the world exports. The biggest part of the exports go to the United States (59 per cent) and to the European Union (27 per cent). Although this sector has a history of producing metal utensils which goes back over a century, the cluster has been an important exporter only since 1960, with export revenues that have risen nearly twenty-fold in real terms since then.

According to NADVI [1999, 150], "local social networks provide key benefits which make it possible for Sialkot's surgical instruments cluster to function and to compete in global markets." For instance, social ties between the core firms and the sub-contractors are particularly important because quality work in processes like forging, filing, heat treatment and polishing is crucial when competing in global markets. Despite the small size of these firms, economies of scale and scope can be realized because social capital facilitates

[10] The following descriptions are taken from Nadvi [1998], [1999].

cooperation between core firms and sub-contractors. Thus, this report confirms that social capital governance plays a substantial role in this sector.

NADVI [1999, 151] identifies three different forms of social ties in this cluster: kinship (biraderi), family, and localness. The basic unit of kinship organization is the *biraderi* which literally translates as fraternity or brotherhood. The biraderi is subject to an authority, the panchayat, which is similar to a council of elders which enforces collective decisions, settles disputes between members, and decides over the allocation of common resources. Important is that although biraderi is also an occupational category, it does not prevent outsiders from entering the occupation. "In terms of skilled labour, input suppliers or process subcontractors, firm owners do not deal exclusively with members of their own *biraderi*." [NADVI, 159]. For instance, despite the fact that Lohars represent the leading biraderi in the surgical instrument cluster, other biraderis are also present. Being a Lohar is not a guarantee for success in this cluster.

Family relations are important because most of the firms are family-run enterprises. However, NADVI points out that social capital based on family ties does provides not only the basis for mutual support and trust within the family but also between families because the reputation of a family as a social unit is of great relevance in the society as a whole. NADVI [1999, 153] in addition emphasizes that families are not restricted to the nuclear household unit. The principle of extended and joint family units is important in the cluster. In addition, there are no social rules which prevent strategic marriages: this means that adaptation to new emerging business requirements is possible. Here the social network consists of a union of many families encompassing the whole cluster.

Individuals in the cluster can also relate to each other because social ties are established by the mere fact of being a local: "Individuals do not need to be related by common lineage or kin

ties to form social bonds with each other." (NADVI [1999, 155]) Local reputation which goes beyond family ties is valuable because information about the capacities and the qualities of the different actors within the cluster flows extensively due to the many levels of social ties.

In conclusion, the fact that there are many levels of social ties which are influencing economic relationships and the fact that factors like kinship membership and family membership do not exclusively determine the membership structure of social networks suggest that social capital created in this sector has a rather inclusive quality.

3.2 Footwear Cluster in Agra, India

The footwear cluster in Agra, India is located 120 miles south-east of New Delhi. This cluster consists of about 5,000 mostly small firms. The whole cluster occupies about 60,000 workers who produce approximately 40 millions pairs of shoes a year. Only approximately 3 per cent of the production is exported. Of the 5,000 firms, only 500 small-scale manufacturing units, mainly workshops and home-based units, do not produce finished products indicating that division of labor in this cluster is low. Most of these small units are vertically integrated and this means that economies of scale and scope are rather limited. There are four categories of productive units (KNORRINGA [1996, 81-98]). These units differ not only in terms of size but also in terms of technology and market channels they use in order to sell their products. First, there are about 3000 home based units which employ 25 per cent of the labor force and produce 20 percent of the total number of pairs in the sector. They operate primarily with family labor. Most of them produce footwear with hand tools and manually powered stitching machines. Product quality is generally low and marketing is mainly based on direct sales either to market agents in Hing ki Mandi, the main market place for footwear in Agra, or to consumers directly. The smaller part of these firms works on an order basis too, orders mainly

placed by Hing ke Mandi traders. To work on order basis lessens the sales risk substantially. Second, there are approximately 1250 small workshops which operate primarily with wage labor employing less than 10 workers. They use mainly traditional production technology and their sales is based mainly on direct sales as in the previous category. These units engage 20 per cent of the labor force and produce 15 per cent of the output. Third, large workshops employing more than 10 persons constitute another category. Their production technology is a mix of modern and traditional technology. The big difference in technology is that most of these firms use electrically powered machines. Although they engage much less labor (15 per cent) than the previous two categories, they contribute 25 per cent to the cluster's output. Fourth, the last category is constituted by larger enterprise groups which are divided in several registered small-scale factories – mainly for institutional reasons – with about 25-100 workers each. They are equipped with modern electrically powered machines which explains the 40 per cent of output by engaging only 25 per cent of the labor force. A small portion of them produces top quality shoes which are exported partly to European and American retail chains. The other portion of these firms works on order basis for large Indian shoe companies which have a purchasing office in Agra.

With respect to the role of social capital in this cluster, KNORRINGA [1996, 73] points out that "a caste-based antagonism blocks any sort of collaboration between makers and sellers of footwear. Agra's footwear industry, like most craft-based industrial cities in northern India, is characterized by a chasm between an artisanal community that makes and a trader community that sells." According to the caste rules the actual making of footwear has to be done by those who are born as Chamars, a caste close to the bottom of the hierarchy. Trade, in contrast, is dominated by forward-caste Hindus with Punjabi or Sindhi background, Sikhs and well-to-do Muslims (KNORRINGA [1996, 73]). Social capital clearly has an exclusive quality which leads

to a highly segmented market not only in terms of occupation but also in terms of location. Correspondingly, KNORRINGA [1996, 74] concludes: “Clearly, as more collaborative relations with market agents are crucial to entrepreneurs of small-scale manufacturing units, such a locked-in identity [given by caste membership] has far-reaching negative implications”. He points out that, first, the segmentation inhibits the exchange of information which is crucial to innovation and constant quality improvement as pointed out earlier in the paper. Second, rent-seeking costs in order to get access to the more attractive order-based market channels are considerable because caste-discrimination represents an almost insurmountable entry-barrier for lower cast members. Lobbying activity and efforts to convince market agents of one’s trustworthiness are substantial for entrepreneurs coming from the lower product segment and trying to rise to the upper product segment (KNORRINGA [1996, 144-145]).

4 Conclusions

This paper has defined social capital as the means which sustains cooperation between individuals by virtue of mutual inclusion in a social network. Based on the game theoretic model of linked games developed by SPAGNOLO [1999] it has been shown how social relationships influence the governance of economic relations (social capital governance). A broad body of literature in economics, sociology and anthropology indicates that social capital governance, especially in developing countries, is substantial. I then argued that social capital works like an amplifier by strengthening any economic outcome, whether economically efficient or not. The strength of social capital, however, depends on the openness of social networks. The crucial question is whether social networks can adapt their membership structure to new emerging business requirements. Adaptation will be difficult if social

networks are closed so that admission to the network is costly for outsiders or is conditional exclusively on non-acquirable social attributes (exclusive social capital). Exclusive social capital causes market segmentation and may induce rent-seek-activities among the outsiders influencing economic performance negatively. This is especially the case in more dynamic industries where flexible adaptation to new emerging business requirements is crucial.

The two case studies of small-firm districts in Pakistan and India discussed in this paper are consistent with this argument. In the rather poor performing footwear cluster in India, caste rules constitute insurmountable barriers which prevent mutual beneficial forms of cooperation between producers and sellers. In the successful surgical instrument cluster in Pakistan, in contrast, there are many levels of social ties (kinship, family membership, and localness) which altogether influence the membership structure of social networks in the cluster. This indicates that social capital here has a rather inclusive quality.

However, these statements have to be considered rather as an illustration than conclusive empirical evidence. More systematic empirical research is needed in order to know whether the openness of social networks is the distinctive feature which explains the relative success of small firm clusters in developing countries.

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