

# Social capital and the Danish system of innovation

By

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## Abstract

The paper explores the concept of social capital and applies it to the Danish national system of innovation. It is argued that social capital is important to the working of the national system of innovation, and that the way in which the concept of social capital informs the study of national systems of innovation is in accordance with fundamental contributions in the field. Reviewing a number of approaches to social capital, the paper shows that even though different views exist there seem to be a number of common features that will facilitate research both within individual fields and cross-disciplinary. Regarding the Danish national system of innovation, social capital plays an important role, and a number of features facilitating social capital prevail. However, a number of challenges are present and calling for political action and future research. The main argument of the paper is that social capital, both in a theoretical context and in the case of the Danish national system of innovation, is most easily conceptualised if we focus on the combination of bonding and bridging forms of social capital.

## Background

According to Lundvall (1988, 1992) in his contribution on the concept of national systems of innovation, the process of innovation is highly sensitive to interactive learning at the market and within organisations. In distinguishing between different types of space in which economic activities take place, Lundvall (1992) stresses that in addition to economic space understood as the localisation of economic activities, organisational space understood as horizontal and vertical integration across the market place, and geographical space in terms of distance, *cultural space* is important in the sense that “the general institutional framework – including norms and codes – represents a context for communication, and individuals and organisations will decode information in accordance with this context” (ibid., p.56). Regarding the idea of cultural space, Lundvall is inspired by Johnson (1992) who stresses the importance of institutions in innovation and learning, defining institutions as “sets of habits, routines, rules, norms and laws which regulate the relations between people and shape human interaction” (ibid., p.26). Johnson emphasises that cultural affinity implies information economics because information is mostly imperfect and costly to acquire and that in consequence an instituted community among economic agents is conducive to information transmission and efficiency.

The idea of the importance of social interaction in innovation in co-junction with the concept of cultural space has been elaborated by Lundvall (2002) in his seminal contribution on the so-called Danish model of a national system of innovation where he employs the notion of social capital. He argues that social capital plays an important role in the functioning and competitiveness of the national system of innovation and stresses the threat to social capital posed by globalisation by arguing that

competition depends more and more on dynamic efficiency rooted in knowledge or knowledge-related resources with long-term characteristics. The resources often take a long time and sustained efforts to build, but they may be quickly destroyed. The speed-up of change puts a pressure on social relationships in traditional communities. It contributes to the weakening of traditional family relationships, local communities and stable workplaces. This is important since the production of intellectual capital (learning) is strongly dependent on social capital. To find ways of re-establishing social capital destroyed by the globalization process is a major challenge. Learning and innovation are interactive processes, which depend on trust and other elements of social cohesion.

(Lundvall, 2002, p.9)

The elaboration of social interaction and cultural space into the notion of social capital within the framework of national systems of innovation (NSI) reflects that the social fabric is assum-

ing an increasing role in NSI analyses. The role of the social fabric was present in the initial developments of the NSI approach, e.g. in Lundvall's user-producer approach (Lundvall, 1985), Freeman's analysis of Japanese competitiveness (Freeman, 1987) and the way in which Freeman & Perez (1988) describe the long waves of technical and structural changes in the economic system. However, only with recent contributions in sociology and political science has the concept of social capital become sufficiently powerful to penetrate other areas of scholarly inquiry. The phenomenon is new, although the concept of social capital can be traced back to the beginning of the previous century, and research in social capital is still limited, however expanding rapidly (Harper, 2001). The next section explores the recent phenomenon, while the following section discusses the characteristics of the Danish system of innovation from a social capital point of view. Finally, the last section summarises the discussion.

## The concept of social capital

According to Putnam (2000), the concept of social capital can be traced back in literature to 1916 when school supervisor and reformer Lyda Judson Hanifan wrote an article on "The Rural School Community Center" in *Annals of the American Academy of Political and Social Science*, to be followed by a book on *The Community Center* in 1920. Apparently, Hanifan, who presented the concept for the first time in 1913 in a handbook for West Virginia school-teachers, defined social capital as referring to "those tangible substances [that] count for most in the daily lives of people; namely good will, fellowship, sympathy, and social intercourse among the individuals and families who make up a social unit" (cf. Putnam, 2000, p.19). However, even though he intentionally used the word "capital" in order to make economists and businessmen aware of the importance of social relations and conditions to productivity, he never managed to popularise the concept and it was forgotten and then reinvented regularly during the 1950ies to 1980ies. It was not until the 1990ies that the concept of social capital became accepted to such an extent that it would hardly be forgotten again.

Putnam refers to the work of Coleman (1988, 1990) as the major breakthrough, but Putnam himself contributed to popularise the concept during the 1990ies (Putnam 1993, 1995) prior to his American national bestseller on *Bowling Alone* (Putnam, 2000). Here he stresses the important distinction between *bonding* and *bridging* social capital that has come to be associated with him, but that Putnam himself ascribes to the book in 1998 on *Community Organizing: Building Social Capital as a Development Strategy* by Ross Gittel and Avis Vidal (Putnam, 2000, footnote 20, p.446). While bonding social capital consists of the relations between homogenous groups that share exclusive identities, bridging social capital consists of the relations between differentiated groups characterised by a diversity of identities. While bonding social capital is inward looking and maintains strong ties among the group members, bridging social capital is outward looking and to a higher degree characterised by loose ties. Both types

of social capital are necessary in order to develop and maintain social cohesion, even though there is a potential negative side to bonding social capital in the sense that it “may also create strong out-group antagonism” (Putnam, 2000, p.23). Generally, bonding social capital is referred to as exclusive, while bridging social capital is referred to as inclusive.

As pointed out by Feldman & Assaf (1999) who provide an annotated bibliography and by Harper (2001), different approaches to social capital exist. The dominant approaches are either that of political science associated with e.g. Putnam, or sociological, e.g. Coleman who describes three types of social capital, i.e. “firstly obligations and expectations which depend on the trustworthiness of the social environment, secondly the capacity of information to flow through the social structure in order to provide a basis for action and thirdly the presence of norms accompanied by effective sanctions” (Harper, 2001, p.8). However, the notion of social capital is also applied within a Neo-Marxist approach that focuses on power relations, e.g. Bourdieu (1986) who distinguishes social forms of capital from economic and cultural forms and discusses the relationships between the different forms, and within a general economic framework, e.g. Fukuyama (1995a, 1995b) who stresses the importance of trust for competitiveness and economic performance. Within an economic framework, the concept of social capital has also entered the discussion on opportunities for foreign direct investment (Dunning & Narula, 2004, Gjerding, 2005) where the emphasis is on how social capital contributes to create relational assets understood as “the firm’s willingness and capability to access, create, to shape economically, and to coordinate the resources and capabilities necessary to beneficial relationships, and to sustain and upgrade the quality of these relationships” (Dunning & Narula, 2004, p.205).

The way in which social capital enters the work on national innovation systems as in Lundvall (2002) is a combination of the Neo-Marxist and economic approaches, however inspired by the sociological and political science approaches. The main argument here is that economic activities are embedded in social relations at the micro- and macro levels, as emphasised by e.g. Granovetter (1985) and Woolcock (1998). While Granovetter (1985) emphasises that social relations can offset the kind of opportunism described within the transaction cost approach (Williamson, 1975), Woolcock (1998) emphasises the different types of social capital at the micro and macro levels, where the micro level is exemplified by ethnic entrepreneurship based on social ties within a highly integrated community, while the macro level is exemplified by comparative institutionalism where social capital appears in the form of social relations within collectively organised settings. In general, the NSI paradigm focuses on collectively organised settings like comparative analysis of different types of organisational behaviour among firms, the functioning of labour, product and financial markets, and the organisation of research and development within and between the private and public sectors.

How to define social capital is still widely disputed, as can also be seen from the different approaches described above. Grootaert (1998) distinguishes between three main views: A

*narrow concept* (associated with Putnam) that defines social capital in terms of social networks and interrelated norms of behaviour; *a broader concept* (associated with Coleman) that accepts the narrow concept's focus on horizontal social relationships but include vertical relationships as well in terms of hierarchical relationships where power is unevenly distributed; and an *encompassing concept* that includes how social and political systems shape the social structure. However, he identifies some common features shared by the three views, cf. box 1. In general, the common features adhere to how OECD has defined social capital, i.e.:

**Box 1.** *Three views on social capital: Common features*

The three views on social capital broaden the concept from mostly informal and local horizontal associations to include hierarchical associations and formalized national structures, such as government and the rule of law. Yet they share several common features:

- All link the economic, social and political spheres. They share the belief that social relationships affect economic outcomes and are affected by them.
- All recognize the potential created by social relationships for improving development outcomes but also recognize the danger for negative effects. Which outcome prevails depends on the nature of the relationship (horizontal versus hierarchical) and the wider legal and political context.
- All focus on the relationships among economic agents and how the formal or informal organization of those can improve the efficiency of economic activities.
- All imply that “desirable” social relationships and institutions have positive externalities. Because these cannot be appropriated by any one individual, each agent has a tendency to underinvest in social capital; hence, there is a role for public support of social capital building.

(Grootaert, 1998, box 6.1, p.4)

Social capital is built as the “level” of families, communities, firms, and national and sub-national administrative units and other institutions. Typically, the idea of social capital is associated with relations in civil society. However, relationships of trust and networks also involve public organizations and institutions. Social capital is embedded in norms and institutions, which include public and legal entities. The focus of analysis may also extend to different groups within civil society such as gender, occupational, linguistic or ethnic groups.

(OECD, 2001, p.45, as quoted in Productivity Commission, 2003, p.8)

The Australian Productivity Commission (Productivity Commission, 2003) has elaborated on the common features of the different views on social capital and the encompassing OECD definition by pointing to three key features of social capital: Norms, networks and trust. The dynamic relationships between codes of social behaviour, ties between people and organisations, and confidence in collective action is argued to benefit society in four ways:

- by reducing transaction costs;
- by facilitating the dissemination of knowledge and innovation;
- by promoting cooperative and/or socially-minded behaviour; and
- through individual benefits and associated social spin-offs.

(Productivity Commission, 2003, p.23)

However, the Productivity Commission recognises, as also emphasised by several of the previous cited authors, that social capital in some cases may have adverse effects, as well. Strong social ties and some codes of social behaviour may exclude some actors from participating in social relations and may also exclude some types of behaviour that assist the benefits of social capital to society and economic activities. In essence, we may argue that since bonding social capital, as put by Putnam (2000), also has an exclusive effect, the inclusive effect of bridging social capital is necessary in order to develop and sustain social capital. This point of view is equivalent to an interesting argument by Johnson (1992) in his work on institutional learning. Following Hodgson (1988), Johnson (1992) argues that a pure economic system, e.g. “pure market economies and totally planned economies” (ibid., p.38), is not viable because it only reproduces itself according to well-defined rules of behaviour and points to the fact that historically viable economic systems have been mixed systems. This is the essence of Hodgson’s “impurity principle” stating that diversified pluralities are necessary in order for economic systems to develop novelty and diversity that keeps the system flexible and sustainable. By the same token, we may argue that the co-existence of bonding and bridging social capital is a critical aspect of the positive effects of social capital on society and economic activities. This points, with reference to Harper (2001, p.11), to the importance of a third form of social capital (associated with Woolcock, among others), i.e. linking social capital that refers to relationships across social strata, institutions and organisations.

As mentioned previously, Hanifan intentionally used the term *capital* in order to attract the interest of economists and businessmen. However, as can be inferred from what has been said so far, social capital has increasingly adopted the same connotation as other types of capital, i.e. as a resource for productive activities. On the other hand, as stressed by Grootaert (1998), social capital like human capital is not only an investment, but also a consumption good that may be pursued for its own sake. To an important extent, social capital is a public good that is produced at a cost that imposes negative externalities on the use of social capital. Therefore, social capital cannot be treated exclusively as a factor of production, but must also be seen as

part of the processes that contribute to social cohesion. This is actually an important point stressed by the way in which social capital enters the analysis of national systems of innovation to which the paper turns now by reference to the case of Denmark.

## Social capital in the Danish national system of innovation

In a large-scale study on work practices in 5,547 private and public firms in the Nordic countries, NUTEK (1999) concluded that the most flexible and productive firms were those that employed combinations of delegation of responsibility, skills development plans, work teams, job rotation and accommodating compensation systems (see also Gjerding, 2003). These work practices are features that only work to develop and sustain flexibility and competitiveness if the actual carrying out of the practices are linked with bonding and bridging social capital. Even though the practices in question are, obviously, subjected to managerial control, they require the functioning of social relations, networks and trust. In his important contribution on the Danish national system of innovation (NSI), Lundvall (2002) has emphasised that the most crucial aspect of social capital is “the ability to work with and trust others” (ibid., p.99), implying that “social competencies are the foundation on which to build relational assets” (Gjerding, 2005, p.7), and, in general, Lundvall (2002) characterises the Danish NSI as a system where flexibility and competitiveness is highly dependent on social capital, cf. box 2. Furthermore, with reference to the Danish National Council for Competence (Mandag Morgen, 1998) that in a comparison of fifteen OECD countries reveals a close connection

### **Box 2.** *Social capital in Denmark*

In general the Danish innovation system is one dominated by small organizations and easygoing people. It is a flexible system in which it is relatively easy to do business, and it is not very formal. The key word is collaboration, both horizontally and vertically, internally within a business and externally in relation to customers and suppliers. The primary purpose of collaboration is incremental innovation in traditional product areas, and to an increasing degree in knowledge-intensive services as well. The fact that Denmark has managed to attain a high per capita income through utilizing such strategy demonstrates that it has depended on some “small-country advantages”. Closeness in social relationships allows for rapid communication and allows problems to be solved when they arise without much waste in terms of formalities and social struggles.

Social capital will be especially important in a society where, as in Denmark, interactive learning and gradual innovation provide the basis for economic prosperity. In a society without mutual trust between individuals and groups, very little learning would take place, and one might wind up in a situation resembling that in Russia: because of the disintegration of social capital, a significant amount of knowledge capital is disappearing as well.

(Lundvall, 2002, p.100).

between high levels of competitiveness and high levels of social cohesiveness, he stresses that small countries that are able to develop and sustain social capital are also able to develop and sustain strongholds of international competitiveness that contribute to national growth and employment. Social cohesion is an important aspect in this case, especially if we accept that the competitiveness of small countries depends on their ability to create and facilitate learning:

Cohesiveness, which can also be said to be one important element of “social capital”, has such great importance in the learning economy because effective learning (unlike the processing of information) presupposes trust and cooperation. While small countries may remain handicapped in some product areas dominated by formal knowledge, they can penetrate in other knowledge-intensive areas anchored in interactive learning processes.

(Lundvall, 2002, p.27)

In addition to box 2, following Lundvall (2002) and based on the current public debate in Denmark, the important characteristics facilitating and depleting social capital in the Danish national system of innovation may be summarised as follows.

#### *Facilitating social capital*

- Creation of a large number of new jobs annually due to a dynamic labour market where hiring and firing are quite flexible. The flexibility is socially accepted because of relatively easy access to comparatively high unemployment benefits.
- High degree of social equality in combination with a high level of income per capita, partly because of a comparatively high participation rate at the labour market and strong traditions for organised membership in trade unions.
- Widespread participation in associations and clubs, and in meetings and decision making in relation to schools, kindergartens and the like, which facilitates bonding and bridging social capital.
- Low rates of crime and a general feeling of security and trust among people.
- Easy access to educational opportunities, also regarding vocational retraining and competence development in firms.
- Easy access to public goods in terms of health care and social benefits.
- Close ties between private business, public authorities and political systems.

#### *Depleting social capital*

- Integration of people with different ethnic background.
- Comparatively low rates of entrepreneurship and a strong decision for becoming a wage earner rather than an enterprise creator.
- Increasing problems with outsourcing of jobs. In effect, large groups of low-skilled employees are potentially threatened by globalisation.
- A stable proportion of people with inferior connection to the labour market.
- A low rate of participation in political parties and in political life as such.

The dynamics of the Danish labour market can be exemplified by the high rate of job turnover where 260,000 jobs are created and destroyed annually which is a high figure compared to the only 3,500-5,000 jobs that are annually being globally outsourced (Det Økonomiske Råd, 2004, Socialforskningsinstituttet, 2004). Since outsourcing has played only a minor role in the dynamics of the Danish labour market, the high rate of job turnover contributes to job opportunities, especially during the recent years where unemployment rates have been low at about 6.5 %. However, recent figures suggest that outsourcing may become an increasing problem in the future. While only 1.8 % of the private business firms have outsourced at least 40 % of their economic activities today, 7.5 % of the firms expect to reach that level within the next three years (Danmarks Statistik, 2005a). Especially within manufacturing, but increasingly also in service outsourcing is becoming an issue. The effect on the labour market dynamics and on wage differentials is difficult to predict at present, but it seems reasonable to suggest that the comparatively equal distribution of incomes in Denmark may deteriorate. In terms of the Gini coefficient that measures the proportion of income that needs to be redirected in order to create perfect equality, the Danish economy has an outstanding equality in income distribution, e.g. the Danish Gini coefficient is between 25 and 30 while comparative small welfare economies like Finland, Sweden and the Netherlands experience Gini coefficients between 30 and 35 (Danmarks Statistik, 2005b). The most interesting point, however, is what will happen to the high participation rates and labour market organisation in Denmark. At present, the Danish rate of participation is almost 80 % of the population at the age of 15-64 as compared to the about 70 % in Finland, Sweden and the Netherlands which is the same as the official policy target of the European Union (Danmarks Statistik, 2005b). Pressure on the participation rate will presumably be most strong in the case of immigrants that already experience low participation rates, i.e. about 60 % for immigrants from Western countries and 45 % for other types of immigrants. Regarding unionisation, 2.044 million out of the Danish work force of 2.45 million are members of a trade union while 2.335 million are members of an unemployment insurance organisation, and even if there has been a debate on a decreasing inclination at the Danish labour market to become trade union members this is not supported by actual figures. However, Denmark experiences a polarisation of the work force in the sense that people with an inferior connection to the labour market are slightly increasing in number. The number of these people, comprising unemployed, people in publicly supported jobs and people temporary out of work, is widely disputed, but according to Danmarks Statistik (2005b) the figure is at least 280,000 and has increased with 5 % from 2002 to 2003.

Regarding the participation in different types of social associations and public political life, memberships in associations and clubs seem to remain stable, while participation in political life is decreasing. Although 84.5 % of the Danish voters voted at the recent parliamentary election in February, only 5 % of the Danish voters are member of a political party, and in general the political parties have experienced a rapidly decreasing number of members during

the last twenty years. To some extent, this is balanced by the fact that a large proportion of the politically active voters take part in local political activities such as board memberships in schools and kindergartens, and local political issues, following the general inclination of citizens in the Western world to engage in focused issues rather than in broad political programs. However, while this tendency may contribute to the formation of bonding, bridging and linking social capital at the micro level, it may imply a deteriorating social capital at the macro level.

Finally, regarding access to education, a single observation is worth noticing. Generally, the level of education in the Danish population has been increasing. In 2004, 68 % of people in the age group of 30-69 had an education above primary school (9 years) representing an increase of 9 % from 1994 to 2004, while 32 % did not (Danmarks Statistik, 2005b). However, there are important geographical differences in the sense that the level of education is correlated with the distance to city communities in Denmark. In peripheral areas with only small towns and cities, the figures are almost reversed. Furthermore, in terms of the proportion of the population with further education, Denmark is above the OECD-average but lacks behind comparable countries like Finland and Sweden. While 28 % of Danes in the age group of 25-64 had a background of further education in 2002, the same figures in Finland and Sweden were 33 %. In the face of globalisation and the possible dangers of low skilled becoming marginalized, policy initiatives in the field of education seem warranted.

## Conclusion

According to several of the scholarly contributions mentioned in this paper, the public interest in the concept of social capital gained momentum during the 1990ies because the way in which social capital is analysed came to address several issues of public political interest such as the maintenance of social cohesion, the outsourcing of functions previously provided by the family to public and private institutions, the development of social equality in terms of decreasing wage differentials and increasing educational opportunities, and the integration of a plurality of cultural identities in globalised societies. Each of these challenges point to potential problems with combining bonding and bridging social capital. Because the concept of social capital is addressed by a number of different scholarly approaches and because of the diversity of the political agenda, social capital has been described in a number of different ways and more or less encompassing. However, a number of common features shared by the different approaches have developed. Thus, the potentials for future research are promising because it seems possible to develop theoretical diversity while at the same time maintaining some coherence of understanding. In consequence, the concept of social capital is ripe with opportunities for developing new insights in many different disciplines, spanning from anthropology to mainstream economics, while at the same time developing cross-disciplinary research.

In the context of the Danish national system of innovation, social capital seems to provide an important contribution to national income and employment, and to the general well being of the nation's citizens. Especially features that contribute to a dynamic labour market, industrial flexibility, knowledge management, and the combination of bonding and bridging relationships prevail. However, a number of challenges that need to be addressed politically are present. During recent years, it has become clear that the Danish community has an inferior record on integrating people with different ethnical backgrounds as compared to for instance Sweden. Furthermore, even though the Danish economy has a low rate of unemployment and a strong capability to create new jobs, some parts of the Danish labour force is long term unemployed on a permanent basis, while other parts are locked into low-skilled jobs that seem to offer few opportunities for job enrichment and competence development. In addition, a large number of Danish jobs are potentially threatened by global outsourcing. Finally, regarding the political system of the Danish society, participation by ordinary Danish citizens is extremely low. In combination, these challenges may pose serious problems to the combination of bonding and bridging relationships at the micro and macro levels of social capital.

The challenges obviously call for future policy initiatives that address the micro and macro levels of social capital, both as focused policy schemes and as more general schemes. In order to create informed policy schemes, there is a need for research that addresses the challenges in question. Cross-disciplinary research seems to offer great opportunities in this respect, as known from e.g. the World Bank initiative on social capital and the Australian productivity commission that have been referred to in this paper.

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