

## **Organisational social capital and the health and quality of work of the employees’ - two empirical studies from Denmark**

Tage Søndergaard Kristensen<sup>1</sup>, Peter Hasle<sup>2</sup>, Jan H. Pejtersen<sup>3</sup> and Kristian Gylling Olesen<sup>4</sup>

### **Abstract**

In this article we shall describe how our theoretical approach to organisational social capital and work environment in “Organisational social capital and the relations with quality of work and health – a new issue for research” can be demonstrated empirically in a number of Danish companies. This should be seen in relation to the finding that high levels of organisational social capital correlates with a good psychosocial work environment among the employees, as well as in relation to the dynamic processes that develop social capital among employees and between managers and employees, e.g. change processes that are based on trust and justice.

In line with “Organisational social capital and the relations with quality of work and health – a new issue for research” we define organisational social capital as a characteristic of the whole workplace consisting of three dimensions: collaboration, trust, and justice. Thus, organisational social capital is not a characteristic of an individual, a job, or a department. It is our hypothesis that a high level of social capital at a workplace will influence a number of factors such as staff turnover, absenteeism, productivity, output quality, customer satisfaction, job satisfaction, and the health and wellbeing of the employees. In the first results we present, we focus on the association between organisational social capital and employee health. We study this relationship in two different Danish databases.

Study number two is an ongoing study of five industrial workplaces participating in the prospective BEST study (Better Psychosocial Work Environment: a study of workplace interventions). In this study, we have combined quantitative data based on a standardised questionnaire using the above mentioned scales and qualitative data on the processes at the workplaces. The five industrial workplaces are in different manufacturing sectors: Fish processing, catering, advanced machine manufacturing, transport materials manufacturer, and printing. More than 100 employees from each of the workplaces responded to in the questionnaire. The response rate was 70% or higher.

In the national study we found clear associations between the dimensions of social capital and all the health and wellbeing dimensions ( $p < 0.001$ ). The associations to trust and justice were particularly strong. The associations were found in both genders and all age groups. Thus, these associations support our basic assumption. However, the main problem with the national database is that the information is from individuals in a random sample of the population and not a sample of specific workplaces. In our second study, we looked at *average values* for each of the five workplaces. A clear picture emerged with two low social capital workplaces (catering and printing) and three high social capital workplaces (the remaining). Further analyses showed a clear pattern with significantly higher stress levels, higher levels of burnout and lower levels of mental health in the two workplaces with low social capital. Job satisfaction was also significantly lower in the low social capital workplaces. Analysis of data from interviews and observation also helped to explain why catering and printing experienced a low grade of social capital compared to the others when we looked at the level of institutional trust between senior management and employees.

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<sup>1</sup> Professor, [tsk@nrcwe.dk](mailto:tsk@nrcwe.dk). National Research Centre for the Working Environment (NRCWE), Copenhagen, Denmark

<sup>2</sup> Senior Researcher, [pha@nrcwe.dk](mailto:pha@nrcwe.dk). (NRCWE)

<sup>3</sup> Senior Researcher, [jhp@nrcwe.dk](mailto:jhp@nrcwe.dk). (NRCWE)

<sup>4</sup> Research Assistant, [kgo@nrcwe.dk](mailto:kgo@nrcwe.dk). (NRCWE)

In conclusion, the two studies confirmed our basic hypotheses. At the individual level as well as at the workplace level we found the expected patterns with higher job satisfaction, less stress and greater wellbeing in the high social capital groups.

The vast majority of empirical studies on psychosocial factors at work focus on job level characteristics (such as job demands, job control, rewards, social support). We think that this research has contributed with information knowledge about associations between (poor) working conditions and health. However, this type of research tends to overlook the importance of factors at the *organisational level*. We suggest that research on organisational social capital will be able to broaden the scope of our understanding of the processes leading to better health and quality of work at the workplaces.

### **1. Our own empirical studies**

As detailed in “Organisational social capital and the relations with quality of work and health – a new issue for research” there is a certain amount of evidence for an association between the different elements of social capital on the one hand and the health, wellbeing and behaviour of the employees on the other. The evidence for justice is the strongest, and this has not previously been thought of in connection with social capital. In order to examine whether or not there is the same association in the Danish labour market, we have analysed the data from two empirical studies we are involved in. These studies were not designed to highlight social capital and work environment, but they do include measurement of a number of elements which may contribute to our knowledge of these issues.

#### *1.1 Social capital in the nationwide Copenhagen Psychosocial Questionnaire (COPSOQ)*

The first study was carried out by the National Research Centre for the Working Environment (NRCWE) (formerly the National Institute of Occupational Health) as a nationwide study of the psychosocial work environment in Danish workplaces. The second study is part of the ongoing BEST-study (Better Psychosocial Work Environment, [www.best-project.dk](http://www.best-project.dk))<sup>5</sup>.

The COPSOQ was carried out for the second time in 2005 and includes a representative sample consisting of 3,517 employees aged between 20 and 59 years (response rate: 60 %, 52 % women). The study includes a large number of scales concerning the psychosocial work environment. Quantitative scales for measuring justice and trust were developed on the basis of structured questionnaires. Nine questions about trust/credibility and justice/respect were asked. Seven of the former and four of the latter were included in the scales used in the study, see table 1 and 2. These scales were developed by use of factor analyses and analyses of internal reliability (see <http://www.arbejdsmiljoforskning.dk/?lang=en>).

Table 1 shows two scales concerning trust, one concerning “vertical” trust, between management and employees, and one concerning “horizontal” trust (among employees). This is in accordance with theory and evidence in this area, (Cook et al., 1980), and can also be observed in the the statistical scale-analyses which lie behind the two scales. Both scales have a high level of internal reliability (Cronbach’s alpha is 0.77 for “horizontal” trust and 0.80 for “vertical” trust. The normal limit for reliability is 0.7). The scales were designed by assigning values between 0 and 100 to the different answers and by calculating the average for the questions in the scale. Table 1 shows that

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<sup>5</sup> A research collaboration between the National Research Centre for the Working Environment, Technical University of Denmark, Roskilde University and Team Work Life ([www.best-project.dk](http://www.best-project.dk))

all questions in the two scales about trust have approximately the same number of points, which reflects that the answers are similarly distributed for all questions. The remaining part of this article will deal exclusively with the vertical trust between the employees and management.

**Table 1.** Questions and answers for the two scales concerning trust and credibility in the COPSOQ (N=3,517).

	To a very large extent %	To a large extent %	Somewhat %	To a small extent %	To a very small extent %	Point
<b>"Vertical trust":</b>						67,0
"Does the management trust the employees to do their job well?"	20,1	53,6	21,3	3,9	1,1	71,9
"Can you trust the information that comes from the management?"	13,8	40,4	35,4	7,7	2,7	63,7
"Does the management withhold important information from the employees?" *	2,4	8,1	31,3	38,9	19,3	66,2
"Are the employees able to express their views and feelings?"	18,1	49,0	29,5	6,2	2,2	66,2
<b>"Horizontal trust":</b>						68,6
"Do the employees withhold information from each other"*	1,3	6,6	31,2	42,4	18,6	67,7
"Do the employees withhold information from the management?" *	1,0	5,8	29,4	44,2	19,6	68,9
"Do the employees in general trust each other?"	11,6	56,7	29,3	1,9	0,4	69,3

Point scores for the five answers: 100, 75, 50, 25, 0. \* Reversed scoring.

Table 2 contains the four questions that are also included in the scales about justice. Again, the value of 100 is equal to maximum justice, whereas 0 is the lowest possible level. The table shows that the respondents did not answer as positively to these questions as to the questions about trust. This is illustrated by the fact that the four questions lie in a range from 58 to 60 points, whereas the trust questions lie in a range from 63 to 72 points. To give an example, only 42 % are of the opinion that "all suggestions from the employees are treated seriously by the management ("To a very high degree" and "to a high degree"). This scale also has a very satisfactory internal reliability (Cronbach's alpha is 0.83).

**Table 2.** Questions and answers for the two scales concerning justice and respect in the COPSOQ (N=3.517).

	To a very large extent %	To a large extent %	Somewhat %	To a small extent %	To a very small extent %	Point
<b>"Justice and respect":</b>						59,2
"Are conflicts resolved in a fair way?"	7,4	36,1	42,7	10,4	3,4	58,4
"Are employees appreciated when they have done a good job?"	10,5	37,0	37,2	12,3	3,0	59,9
"Are all suggestions from employees treated seriously by the management?"	7,0	35,2	44,1	10,9	2,9	58,2
"Is the work distributed fairly?"	6,3	39,1	46,4	6,9	1,3	60,6

Point scores for the five options: 100, 75, 50, 25, 0.

Contrary to other questions and scales in the NRCWE questionnaires about psychosocial work environment, these scales do not deal with the respondents' job or department, but with the entire company or organisation where the respondent is employed. This is highlighted in the questionnaire above, in which questions about trust and justice are presented. Under the heading "The workplace as a whole" it is stated that "The next questions do not deal with your own job, but about the workplace as a whole". In other words, the intention with the scales concerning trust and justice is that they are used to analyse at a company level, which is also the case in this article.

Table 3 presents the questions regarding three dimensions: "Social support from colleagues", "Social support from superiors" and "Social community at work". The score for the maximum level is 100, whereas 0 indicates the lowest level. On this basis, a scale for *collaboration* was constructed, with the three COPSOQ scales being weighted equally in the collaboration scale. The internal reliability is high for the three individual scales as well as for the constructed scale for collaboration (Cronbach's alpha for "collaboration" is 0.86). Organisational social capital is based on the three components "vertical trust", "justice" and "collaboration". The three components are weighted equally in the scales.

**Table 3** Questions and answers in COPSOQ – the questions in the scales for social support from colleagues, social support from superiors and social companionship. The three scales together comprise the scale for collaboration.

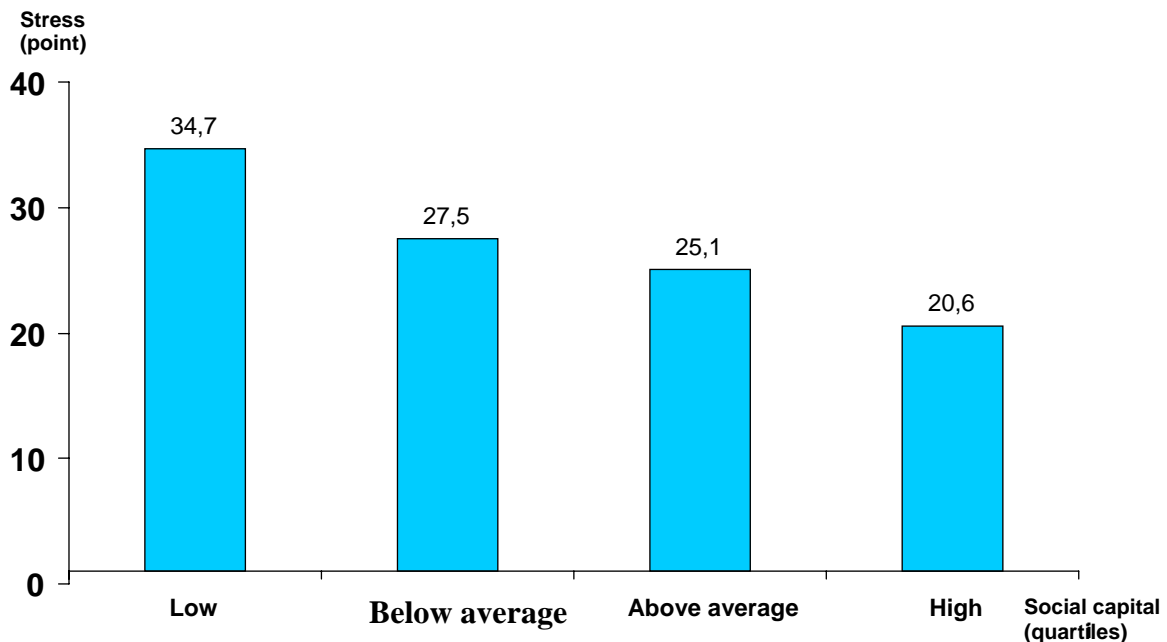
	Always %	Often %	Sometimes %	Seldom %	Never/hardly ever %	Not relevant %	Point
<b>""Collaboration"</b>							66,0
<b>"Social support from colleagues"</b>							57,3
"How often do you get help and support from your colleagues?"	10,5	32,6	37,5	12,1	4,4	2,9	58,4

"How often are your colleagues willing to listen to your problems at work?"	25,2	39,5	23,3	5,4	2,6	3,9	70,7
"How often do your colleagues talk with you about how well you carry out your work?"	2,6	19,2	36,8	25,4	12,8	3,2	43,1
<b>"Social support from superiors"</b>							61,6
"How often is your nearest superior willing to listen to your problems at work?"	45,2	30,3	16,5	6,2	1,8	-	77,7
"How often do you get help and support from your nearest superior?"	21,5	28,2	29,4	16,6	4,4	-	61,5
"How often does your nearest superior talk with you about how well you carry out your work?"	5,3	21,4	34,7	27,0	11,5	-	45,5
<b>"Social community at work"</b>							78,7
"Is there a good atmosphere between you and your colleagues?"	41,2	46,3	9,8	1,1	0,5	1,0	82,0
"Is there good cooperation between colleagues at work?"	28,8	45,7	19,1	3,7	1,4	1,3	74,5
"Do you feel part of a community at your place of work?"	46,0	33,9	12,6	4,3	2,1	1,1	79,7

Point scores for the five options: 100, 75, 50, 25, 0.

Figure 1 shows a clear association between social capital and stress-level among the COPSOQ participants. Correction for age and gender differences between the quartiles does not produce significant differences compared to the uncorrected data. So figure 1 shows the uncorrected data. We find similar associations for other dimensions, such as burnout, sleep disorders and general health. There seems to be an independent connection between social capital and health among Danish employees. In this analysis, a connection has been made between the answers of *individuals* with regard to social capital and health. Therefore, the significance of social capital as a collective characteristic is not shown, but has been subjected to closer study in the BEST-project.

Figure 1 Association between social capital and stress among the respondents in the COPSOQ (N=3,517).

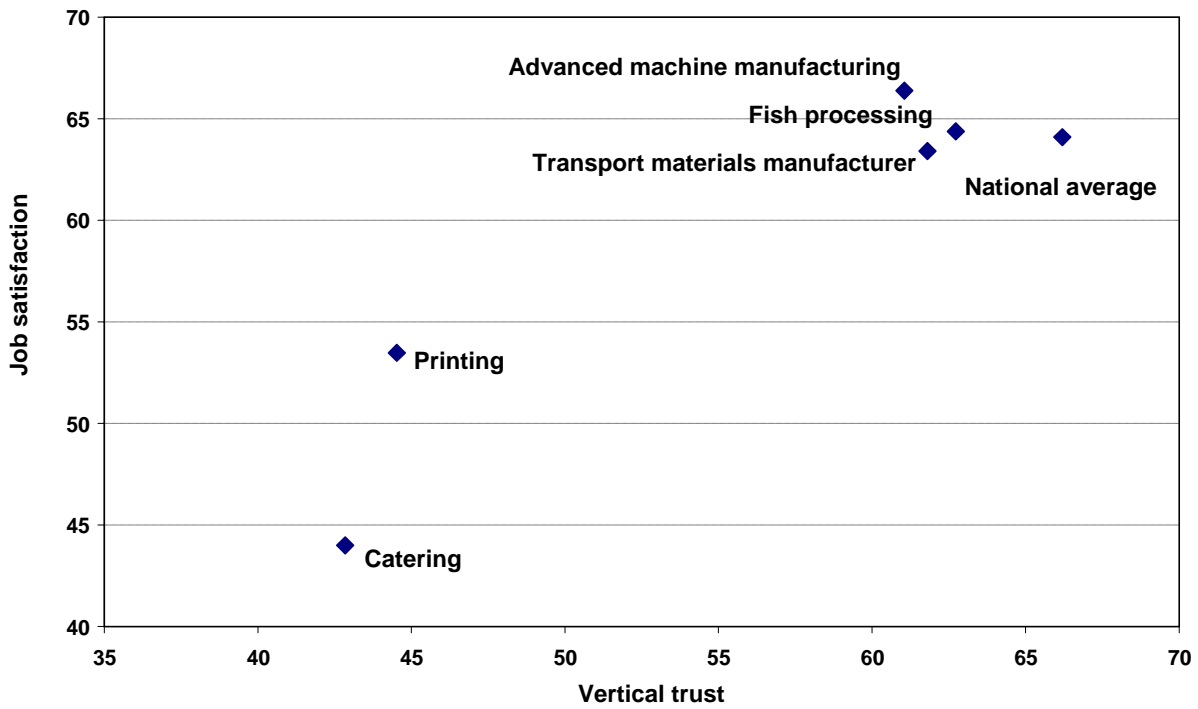


### 1.2 Social capital in five industrial companies

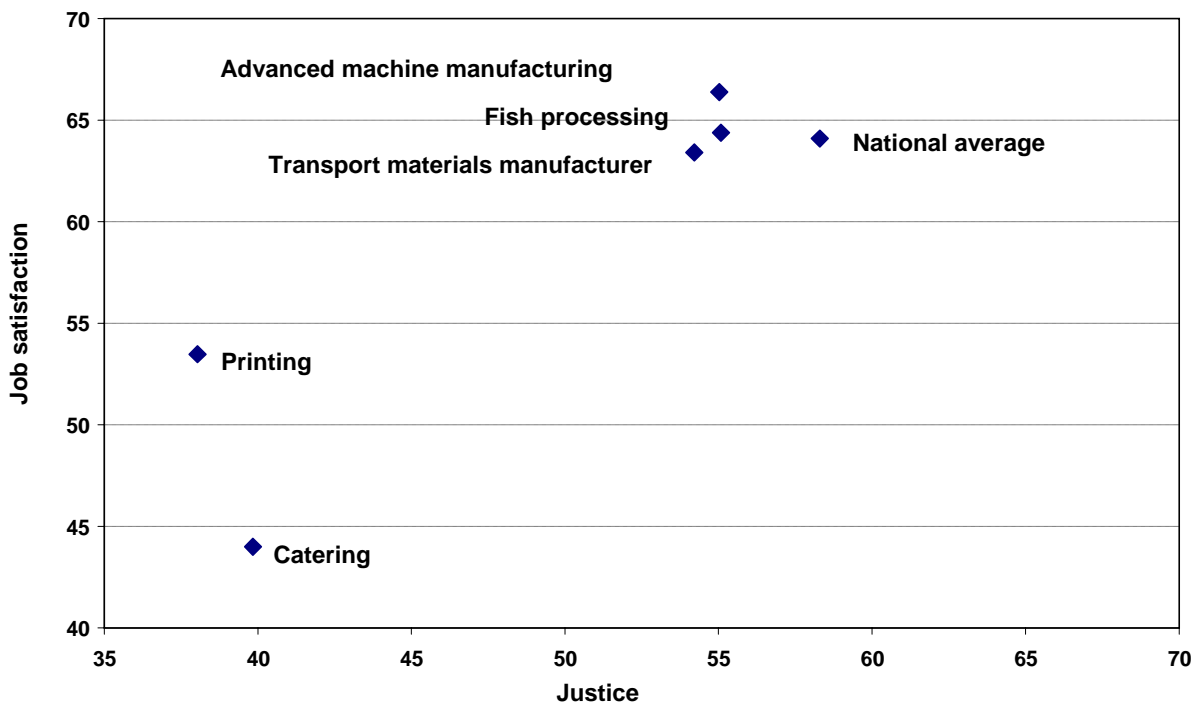
The BEST project is an intervention project which focuses on the effort made by specific companies to improve the psychosocial work environment. Quantitative as well as qualitative methods are used in the project. In connection with this project we used the NRCWE scales concerning trust and justice in the five industrial companies, which participate in this project. These five workplaces are a catering company (approx. 180 employees), a machine factory (180 employees), a transport materials company (400 employees), a fish processing plant (120 employees) and a print works (120 employees). All the companies have signed up for the project and have agreed to let their employees fill out the NRCWE psychosocial work environment questionnaire at the start and at the end of the project. The results below come from the first questionnaire, the so-called base-line. Researchers from the Technical University of Denmark followed the companies during the two-year process, and they used a number of qualitative methods, including interviews, observations and chronicle workshops (Bottrup, Hasle, Jensen, Broberg, & Knudsen, 2002).

Figure 2 and Figure 3 show how the five industrial companies involved in the BEST project differ very markedly with regard to the two dimensions, trust and justice. The print works and the catering company are characterised by low trust and justice compared to the other three companies. When analysing the answers given by employees from the five companies, the same pattern emerges in each of the eight questions about trust and justice. The figures also illustrate that these two dimensions are very closely linked to job satisfaction.

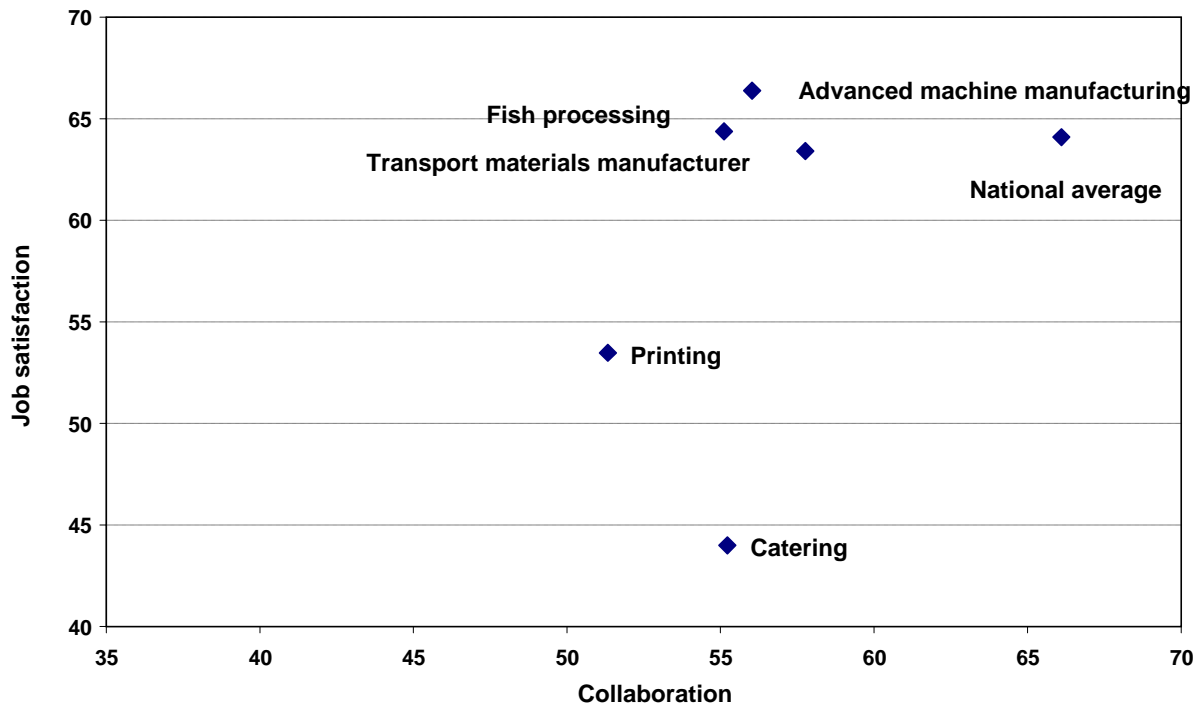
**Figure 2.** Vertical trust and job satisfaction in the five industrial companies in the BEST project



**Figure 3.** Justice and job satisfaction in the five industrial companies in the BEST project



**Figure 4** Collaboration and job satisfaction in the five industrial companies in the BEST project.



The answers to the questions about collaboration do not show the same marked difference between the companies as those concerning the other two elements of social capital (figure 4). It is not possible to distinguish the companies from each other by the quality of the internal collaboration alone.

Interviews with managers and employees in the five companies confirm the separation into two markedly different groups. The print works and the catering company both have a history, which can explain the lack of trust and justice.

The print works was a family-owned company for many years, with close relations between the owner family and the employees, in particular the union representatives. During the last ten years, the company has been merged and money has been invested in new technology, which has led to a dramatic reduction in the number of employees. At the same time, a new family generation has taken over the company and demanded more of the employees, also in terms of profit margins. The new company structure impeded direct collaboration between the senior manager and the employees. After many years of working together trying to make the mergers and the new technology successful, the employees feel let down by the owners and by a newly employed management, which is pushing for further efficiency.

The catering company has a shorter but equally dramatic history, insofar as the company used to be a market leader, but during a fairly short period of time has been reduced to quite a small player. In this process, there has been a number of mergers and a considerable reduction in the number of employees. At the same time, the company has changed owners twice in rapid succession, and each time the management has been replaced. For the employees this lack of continuity is experienced as

the main reason for both difficulties in the market place and getting production to function effectively.

The level of institutional trust can also help explain the lack of trust (and justice) in the print works and the catering company. As described in “Organisational social capital and the relations with quality of work and health – a new issue for research”, senior management and employees cannot build mutually trusting relationships on the basis of personal and close relationships. Instead, the activities initiated by the senior management form some general expectations among the employees with regard to the intentions of the senior management. In this way, senior management becomes an institution that the employees can have varying levels of trust in. The results of the interviews and observational studies show that small initiatives from the senior management can have a great symbolic significance, depending on the previous experiences with senior management. This symbolic significance can determine how the employees judge the intentions and objectives of the senior management, regardless of its actual intentions. Senior management can launch initiatives to make them appear trustworthy. It is a long process where several different initiatives can send signals about the good intentions of the management and in this way reverse an incipient distrust.

There are both similarities and dissimilarities in the other three companies. The fish processing plant and the transport materials manufacturer have also experienced mergers and a reduction in the number of employees, but the management has been stable, and acquaintance with the management has given the employees confidence that the problems are being solved in the best possible way. The machine factory has had a very long period with stable management and high growth rates. Shortly before the study, a generation change had been initiated, at the same time as there were changes in the management group and a certain stagnation in the market. This caused some insecurity, and the year before the study, the employees went on strike for the first time ever. The strike was a protest against a newly employed productions manager, and the company took the consequences of the poor collaboration with the new manager by dismissing him. This showed the employees that their concerns in connection with the generation change were taken seriously.

Further quantitative analysis of the data material from the BEST study shows marked differences between the two groups of companies. Table 4 shows data regarding involvement in the workplace, the quality of the management, whether the work is meaningful and the level of predictability. The table shows that the two companies with low social capital also have a low quality of management and low predictability, whereas the correlation with involvement at the workplace and whether or not the work is meaningful is less clear.

**Table 4.** Involvement in the workplace, quality of the management, meaningful work, and predictability in the five industrial companies in the BEST project. Scales from 0 to 100 based on questionnaires.

	Printing	Catering company	Transport materials	Fish processing	Machine manufacturing
Involvement	48,5	49,5	59,0	50,1	55,9
Quality of leadership	29,8	32,6	50,6	53,2	51,4
Meaning of work	64,1	67,5	70,8	66,5	73,8
Predictability	38,2	33,3	53,1	59,5	53,9

Table 5 shows some clear associations between the companies’ social capital and different measures of employee health. The employees of the two companies with low social capital have considerably poorer self-rated health, poorer mental health and vitality and more incidences of

somatic and cognitive stress. Correction for gender and age differences between the five companies does not produce any noticeable differences from the uncorrected scales.

**Table 5.** Different measures of psychosocial health in the five industrial companies in the BEST project. Scales from range from 0 to 100. For the three top dimensions high numbers equal good health. For the two stress-scales, high numbers equal high level of stress.

	Printing	Catering company	Transport materials	Fish processing	Machine manufacturing
Mental health	75,0	68,1	81,3	78,6	79,8
Self-rated health	70,2	75,2	80,4	75,3	81,4
Vitality	58,6	55,0	70,4	66,5	69,2
Somatic stress	25,6	27,3	17,2	21,8	16,5
Cognitive stress	28,2	25,0	19,2	19,3	20,0

The comparisons between the five BEST-companies are surprising in many ways. The immediate expectation would be that the fish processing plant and the catering company, both of which are characterised by monotonous repetitive work would constitute the “strained group”, whereas the other companies with more varied work tasks would constitute the other group. The fish processing plant and the print works have “swapped places” so to speak, where the employees at the fish processing plant have a better position on all five dimensions in table 5 than the print works. The organisational social capital seem to have overtaken the traditional job factors associated with the psychosocial work environment.

## 2. Perspectives

Despite the relatively limited research in this area, international literature indicates that there is an association between social capital, work environment and health. Our own results in the COPSQ and BEST confirms this, the first being a nationwide representative data material, and the BEST project being an analysis of five industrial companies. The latter results indicate that social capital as a collective ability or social dimension in a company or organisation has a significance which reaches beyond the job content of the individual. This means that social capital can be used to explain the significance of company events which have no direct effect on the work of the individual, for example fusions and change of ownership.

In conclusion, we are of the opinion that it makes good sense to focus on social capital and work environment. It is important to emphasise that the results from COPSQ and BEST that we present here were not originally designed to examine social capital in a work environment context. There is a need to develop scales that can describe the dimensions of cooperation more closely than we have done here. It is also important to be able to describe trust and justice in a work environment context. What is necessary is not simply to develop questionnaires and scales, but rather to clarify the concepts and develop a clearer understanding of the three components. The components should be analysed in a process perspective – not just as a characteristic of a company, but as something which is continually changing in a dynamic process over time. It is also necessary to find out whether or not the three components are linked: Can the levels be significantly different from one another? Is it only possible to improve all three simultaneously? Where can the process start? The same questions can be asked with regard to the traditional job factors in the psychosocial work environment: Does high social capital really reduce the strain of job-factors such as demand and control? To put it bluntly: Can a bad job be compensated for by working in a good company? Furthermore, it is important to look at the negative aspects of high social capital.