Risk and willingness to work

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Abstract: This study is an investigation of work motivation (willingness to work), job satisfaction and risk, as well as other related dimensions. Employees of a biotech company, 210 in all, responded to an extensive questionnaire which had been constructed on the basis of a large number of preliminary interviews and focus groups. It was found that perceived risk accounted for about 50% of the variance of work motivation and job satisfaction. The most important risks were the social ones, and stress. Work motivation and job satisfaction mapped different aspects of adjustment to work, both important. Work motivation was related to performance dimensions while job satisfaction was related to intention to quit or to stay on the job. Job interest was a very important dimension, as was the supervisor’s decisiveness and involvement, and the feeling of having a meaningful job.

Keywords: burnout; interest; job satisfaction; leadership; risk; work motivation.


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1 Introduction

Risks in the work environment may result in illness and injury. They may also have other negative effects. Attitudes and motivation may be affected by risks. Research on work environment risks has attended less to the psychological consequences of risks than to their health and policy effects. This may be natural, but both types of aspects are important from a practical point of view. In the present paper, the role of risk for attitudes and motivation is analysed. In particular, interest is focused on work motivation.

Work motivation has traditionally been defined as job satisfaction. This approach has been found to be inefficient when it comes to understanding actual job performance (Iaffaldano and Muchinsky, 1985). It may still play an important role, but not as a driving
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factor behind performance. What, then, would be a more useful way of defining work motivation? We have suggested that one should measure willingness to work (WTW) rather than job satisfaction (Sjöberg and Lind, 1994). Promising results have been obtained in this way (Björklund, 2001). Job performance seems to be more strongly related to willingness to work than to job satisfaction. This is quite natural since WTW is a proximal variable with regard to on-the-job behaviour. Proximal variables tend to be the best predictors of behaviour (Sjöberg, 1980).

Once the analysis of work motivation had been carried to this point it became important to find factors responsible for the willingness to work dimension and of course also for job satisfaction. One factor which had been attended to only rarely in previous work was that of risk. Our own work on risk in other contexts had been extensive (Sjöberg, 1979, 1987, 2002) and it was natural also to apply it in the present context. A risky job would normally be seen as not a very motivating or attractive job. A powerful risk reduction policy would, therefore, be of value not only because injuries are highly undesirable, but also because they de-motivate the employees.

The present study started out as a company-sponsored exploratory study with the overall aim of improving the work environment in a bio-tech pharmaceutical industry. Most of its employees were well qualified professionally and scientifically, some highly so. The company was part of a multi-national corporation. The design of the study called for the eventual construction of a questionnaire and quantitative analysis, but it was initiated with an extensive interview phase. Individual supervisors and managers were interviewed about the crucial social work environment problems the company faced, and focus groups were used to assess preliminary versions of the questionnaire. Hence, the design of the study was driven more by practical concerns and the phenomenology of the employees than by traditional concepts and their corresponding measurement scales. We believed that the purpose of the study was best served by such an open approach. It constituted a unique opportunity to investigate crucial factors in work motivation and risk.

The present study focused on job satisfaction, willingness to work (WTW) and perceived work environment risk. We studied factors behind these dimensions, such as attitude to one’s supervisor and managers, and consequences, such as balance between work and family life, sickness leave and amount of time spent at work.

The design of the questionnaire made it possible to assess job satisfaction in a global sense, as well as WTW. These dimensions have been used as criteria for investigating other scales and dimensions. The strategy we used involved studying whether such other dimensions had strong relations with WTW and job satisfaction. In the case of such relationships being discovered, there might be interesting implications for future intervention work.

Summing up, the purpose of the study was to map relevant factors in the work environment, risk being a dimension of primary interest. The work environment factors were related to WTW and job satisfaction as criteria, used to establish the validity of the approach.

2 Method

2.1 Questionnaire

The questionnaire comprised 15 A4 size pages and 193 questions or judgements tasks, as well as background questions and a number of scales for judging the quality of the questionnaire. A brief summary of its contents is as follows:
Nine questions asking for a global judgment of job satisfaction, social relations at work, presence at work and work motivation
Fifty three questions dealing mainly with various aspects of work
Sixteen questions about the assessment of job satisfaction
Twenty one questions about job demands
Ten questions about professional career
Twenty one questions about job characteristics
Twenty nine questions about characteristics of the immediate supervisor
Twenty five questions about job risks
Nineteen questions about background data and assessment of the company
Six quality questions, time to respond to the questionnaire and space for comments.

In most cases, five response categories were used. They were scored numerically. The time needed to respond (see below) to the questionnaire was not excessive. All responses were anonymous. The questionnaire was given a positive appraisal by the following percentages of the respondents:

- clearly formulated questions: 88%
- clearly formulated response alternatives: 78%
- the questionnaire brought up what was important in this context: 79%
- the questionnaire did not try to influence responses in a certain direction: 57%
- an interesting task to respond to: 43%
- easy to read, good and clear layout: 92%.

Time needed to respond varied between ten and 120 minutes with a median of 30 minutes.

2.2 Respondents

Respondents were 210 employees, 500 of whom had been asked to take part in the study, a response rate of 42%. There are no indications that the present results have been biased due to this relatively low response rate.

The mean age was 39.7 years. The respondents had worked for the company, on average, for 10.8 years, 11.8 years in the line of business. Thus, they had little experience from other companies with a similar orientation. Gender was distributed as follows: 61% men and 38% percent women. (Three respondents did not state their gender).

Sixty-three respondents worked in production, 24 in marketing, seven on staff, 36 with other tasks and 14 refrained from answering the question. Contact with customers was extensive for 53% of the respondents.

Educational background was as follows:

- grammar school only, 25%
- three- or four-year high school 35%
- college degree or graduate school 40%.
Most were married or co-habitating (74%) and 71% had children. Most were living in a medium-sized university town (65%) and 10% in Stockholm. Others were living in smaller communities. Travel time to the job and back, from door to door, varied from four minutes per day to two hours, with a mean of 32 minutes. This is an interesting result since such short time for travelling to work is probably quite uncommon in large cities in Sweden and, of course, even less so in many other countries.

3 Results

3.1 Preliminaries

Groups of questions and scales were factor analysed. The initial section of the questionnaire was factored into five dimensions, viz.

- willingness to work, $\alpha=0.91$, 14 items
- section work load, $\alpha=0.75$, six items
- work involvement, $\alpha=0.69$, five items
- manager’s involvement in respondent’s work, $\alpha=0.90$, nine items
- attitude to corporate top management, $\alpha=0.82$, five items.

One subsequent section was orientated towards various aspects of job satisfaction. Two factors were measured, viz.

- interest and stimulation from one’s job, $\alpha=0.86$, six items
- satisfaction with manager and influence, $\alpha=0.78$, four items.

A number of job demands were assessed and grouped into three factors:

- demands regarding intellectual achievement, $\alpha=0.85$, seven items
- demands regarding social skills, $\alpha=0.71$, five items
- demands regarding conscientiousness and observing rules, $\alpha=0.60$, three items.

Job properties were measured by two factors:

- A challenging and stimulating job, $\alpha=0.87$, eight items
- A secure job, $\alpha=0.77$, six items

The leadership style of the immediate supervisor was judged in several respects, resulting in four factors:

- stimulation, positive impact, $\alpha=0.94$, eleven items
- demanding, punitive, $\alpha=0.78$, six items
- decisive, $\alpha=0.79$, five items
- encouraging and allowing participation, $\alpha=0.88$, two items.
Finally, risk items were analysed and three factors emerged:

- meaningless job, $\alpha=0.74$, four items
- stress, $\alpha=0.67$, four items
- negative social experience at the job, $\alpha=0.76$, four items.

Several items could be combined to form another four scales:

- global job satisfaction, $\alpha=0.75$, four items
- lack of balance work/family, $\alpha=0.65$, four items
- attitude to the company, $\alpha=0.69$, nine items
- attitude to the section, $\alpha=0.76$, 13 items.

As can be seen, reliabilities were high in most cases, acceptable in the rest.

3.2 General aspects of psychological and social situation

The present section gives the results from questions of a global nature, regarding the psychological and social situation of the respondents. Most of the respondents were at least rather satisfied with their job, see Table 1. Only about 20% were dissatisfied. This is a number we shall encounter in several other respects as well, see below. About 20% tended to report dissatisfaction in a number of dimensions.

Table 1 Distribution of answers to the question ‘How satisfied or dissatisfied are you on the whole with your job?’

<table>
<thead>
<tr>
<th>Response alternative</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completely satisfied</td>
<td>3.8</td>
</tr>
<tr>
<td>Very satisfied</td>
<td>31.9</td>
</tr>
<tr>
<td>Rather satisfied</td>
<td>47.6</td>
</tr>
<tr>
<td>Neither/nor</td>
<td>7.6</td>
</tr>
<tr>
<td>Rather dissatisfied</td>
<td>6.2</td>
</tr>
<tr>
<td>Very dissatisfied</td>
<td>2.4</td>
</tr>
<tr>
<td>Extremely dissatisfied</td>
<td>0.5</td>
</tr>
</tbody>
</table>

As many as 38% answered that they were proud to be employed by the company. About the same number indicated clearly that they felt that they were part of the section and company. Several (43%) indicated some communication difficulties within the company due to language, but cultural variation was less of a problem.

Why would they want to make a career in the company? More creative and challenging job tasks and a higher salary attracted about 60%. More responsibility and influence attracted 41%. Other aspects such as travel abroad did not interest more than a small minority.
What did the job require? Very large demands were felt by about half of the respondents in the following respects:

- conscientiousness
- coping with stress
- finishing in time
- independent work.

The company was judged as having an advantage in relation to competitors by 70%, and to have better future prospects by as many. Very few, only about 3%, judged the company to be in a worse situation than the competition.

What were the societal functions of the company? Several options could be chosen:

- employment: 56%
- serve customers: 81%
- create profit for the owners: 21%
- general social utility: 31%
- research contributions: 70%.

We note that only a small minority saw the function of the company as that of creating profit for the owners.

4 Risks

Global risk judgements were distributed as given in Table 2. There was little difference between risk to oneself, personal risk, and risk to work-mates (general risk). Such a lack of difference suggests a low level of perceived control over the risk (Sjöberg, 2003a).

Table 2  Distribution of risk judgments, percent

<table>
<thead>
<tr>
<th></th>
<th>Personal risk</th>
<th>Risk to colleagues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very small or non-existent</td>
<td>10.5</td>
<td>9.6</td>
</tr>
<tr>
<td>Rather small</td>
<td>33.0</td>
<td>30.3</td>
</tr>
<tr>
<td>Neither/nor</td>
<td>36.8</td>
<td>44.2</td>
</tr>
<tr>
<td>Rather large</td>
<td>16.3</td>
<td>15.4</td>
</tr>
<tr>
<td>Very large</td>
<td>3.3</td>
<td>0.5</td>
</tr>
</tbody>
</table>

It is interesting to note that as many as 20% of the respondents stated that there was a rather large or large risk to be exposed to negative events at work, to them personally. The same proportion stated that negative events happened very or rather often at work.

Personal, global risk was related to the three risk factors described above, and to risk for a contagious disease and physical injury. The model was only moderately powerful,
explaining 17% of the perceived personal risk. Only two independent variables obtained a significant regression weight, viz.

- social risk: $\beta^4 = 0.270$
- meaninglessness: $\beta = 0.206$.

Physical risk, illness and stress thus seemed to be of less importance in the sense of the outcome of the model analysis. The finding that social risk and burn-out came out as salient in this analysis is also quite interesting.

It was of special interest in the present context to analyse the effects of perceived risk on WTW and job satisfaction in some detail. For this reason, regression models were fitted to these dependent variables, using the three risk indices and judgements of risks of illness and physical injury as independent variables. The results are given in Table 3.

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Regression models for WTW and job satisfaction, based on risk perception variables, standardised regression weights and adjusted $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>WTW</strong></td>
</tr>
<tr>
<td>Meaningless job</td>
<td>$-0.729^{***}$</td>
</tr>
<tr>
<td>Stress</td>
<td>0.006</td>
</tr>
<tr>
<td>Negative social work experience</td>
<td>$-0.033$</td>
</tr>
<tr>
<td>Physical injury or serious illness</td>
<td>$-0.026$</td>
</tr>
<tr>
<td>Less serious illness</td>
<td>$-0.019$</td>
</tr>
<tr>
<td>$R^2_{adj}$</td>
<td>0.565</td>
</tr>
</tbody>
</table>

It is striking that a very large share of WTW and job satisfaction is explained by risk variables alone, more than 50%. Among the risk variables, the explanatory power is carried almost exclusively by the burnout factor.

5 Models of willingness to work and job satisfaction

Job satisfaction and WTW were the dependent variables in the analyses to follow. They were to be related to other indices, 22 in all. Regression models were fitted by means of stepwise analysis.

Job satisfaction could be accounted at the level of $R^2_{adj} = 0.67^*$. This is a high value suggesting that most of the true variance of job satisfaction is explained by the model. The independent variables entering the model were:

- interesting and stimulating job ($\beta = 0.396$)
- meaningless job ($\beta = -0.309$)
- supervisor’s involvement in one’s job ($\beta = 0.144$)
- job security ($\beta = 0.134$).
Hence, the most important aspect is intellectual stimulation and a feeling of one’s job being meaningful. The supervisor’s engagement and encouragement was also important as well as job security.

The corresponding analysis was performed on WTW. The proportion of explained variance was even higher, 0.74, and the driving independent variables were similar but not identical:

- interesting and stimulating job ($\beta=0.394$)
- meaningless job ($\beta=−0.344$)
- attitude to the section ($\beta=0.132$)
- supervisor’s involvement in one’s job ($\beta=0.097$)
- own involvement ($\beta=0.091$)
- demands for conscientiousness and observance of rules and duties ($\beta=−0.090$).

It is interesting to note the importance of the section in this model. A closer scrutiny of some of the crucial dimensions is worthwhile. Firstly, we list the items of an interesting and stimulating job:

- the extent to which the job stimulates interest
- the extent to which the job stimulates creativity
- freedom
- challenges
- variation among job tasks
- societal contribution of your job.

Meaninglessness:

- I regret my choice of job
- I feel that my job tasks are rather meaningless
- my family and friends are negative to my job
- I do not any longer have enough energy to engage myself in my job.

Supervisor’s commitment:

- unjust criticism (negative)
- supervisor promises too much (negative)
- supervisor is interested in my work achievements
- supervisor can judge the quality of my work
- supervisor works well in the interests of me and my workmates
• supervisor listens and respects my opinions
• there is an open climate for communication in the group
• supervisor cares about my job situation
• supervisor has a good understanding of the demands that the job poses for me.

Positive stimulation correlated strongly with these supervisor variables. A punitive attitude of the supervisor and high demands correlated strongly negatively with other supervisor variables.

5.1 Consequences of willingness to work and job satisfaction

Self-rated work performance correlated little with job satisfaction and WTW. Only 6% of the variance of self-rated work performance could be accounted for by the two variables, and only WTW had a significant regression weight. An index measuring sick leave could be explained only to 3%, mostly by WTW. An index measuring intention to leave the company could be explained to 58%, mostly by job satisfaction. A question about extreme overtime work gave some interesting results. It was more clearly related to WTW than to job satisfaction, and very strongly to lack of balance between work and family.

When you are very interested in your work and have a strong WTW, time goes fast and you experience ‘flow’ (Csikszentmihalyi, 1992). Table 4 shows mean standardised WTW as a function of how fast time passes by during work. It can be seen that there is a very strong relationship in the expected direction. People with a strong WTW also experience that ‘time flies’ when they work.

Table 4 Mean standardised WTW in four subgroups formed on the basis of how fast time passed during a workday

<table>
<thead>
<tr>
<th>Response category</th>
<th>N</th>
<th>Mean WTW</th>
</tr>
</thead>
<tbody>
<tr>
<td>It passes very fast</td>
<td>83</td>
<td>0.40</td>
</tr>
<tr>
<td>It passes rather fast</td>
<td>84</td>
<td>−0.03</td>
</tr>
<tr>
<td>Neither fast nor slow</td>
<td>22</td>
<td>−0.80</td>
</tr>
<tr>
<td>It passes very slowly</td>
<td>14</td>
<td>−1.47</td>
</tr>
</tbody>
</table>

5.2 Who is a good manager?

A global judgement of the supervisor was related to the five indices of supervisor characteristics described above. A regression model accounted for 69% of the variance of the global judgement. Each of the five indices gave a significant contribution. The results in terms of β-weights were as follows.

• decisiveness: 0.315
• supervisor’s involvement in one’s job: 0.220
• positive stimulation: 0.147
• participatory influence: 0.112
• demands: −0.221.
A good manager and supervisor is apparently a person who can make decisions and stick to them, who is involved in his or her subordinate’s jobs, and gives positive stimulation. Participatory influence seems less important and demands carried a large negative weight.

A model for answers to a question as to whether the respondent wanted a different manager was also constructed. Using the same explanatory variables, the explained variance was also very high this time: 65%. The regression weights were:

- decisiveness: −0.372
- positive stimulation: −0.205
- supervisor’s involvement in one’s job: −0.108
- participatory influence: −0.046
- demands: 0.255

These weights have different signs because the question referred to a rejection of the present supervisor. The pattern of regression weights is otherwise very similar.

The analyses show that the manager should have a clear vision and goals, be able to make decisions and stick to them. This is the most important factor. He or she must, in other words, be a leader. But leadership must be carried out in a positive atmosphere of involvement and stimulation. Demands are of course unavoidable but difficult to handle without creating resentment.

5.3 A job to one’s liking

There were 15 aspects of job satisfaction covered in the questionnaire. They were used to create a model of global job satisfaction which had been measured with a special index, see above. It was possible to explain 66% of the variance of that index, using stepwise regression. Six independent variables were retained:

- stimulating and interesting job: 0.426
- variation of job tasks: 0.218
- doing something useful for society through one’s job: 0.157
- working times: 0.143
- work-mates: 0.141
- immediate supervisor: 0.124.

It seems that the most important factor is that of the job tasks themselves. The respondents wanted interesting and varying tasks. These two factors alone explained 58% of the variance. In addition, there is some importance to the social usefulness of the job, as well as social factors and working times. Interest has been to some extent a neglected variable in research on work motivation and also in other contexts (Sjöberg, 1997).
6 Discussion

It was pointed out in the introduction that we aimed at an exploratory and open-minded design based on experience of the employees. We believe that this approach is worthy of further applications, since the present results are both strong and illuminating. On the other hand, it should also be stressed that we do believe that a large-sample application, using quantitative analysis, is highly desirable. A few interviews, no matter how well conducted and analysed, are not sufficient to measure the importance of various factors, to establish how well an approach has succeeded in accounting for important dependent variables, or gaining credibility for the results. Much work in psychology is dominated by fixed operational procedures, often quick and cheap solutions to the measurement problem (Sjöberg, in press). This paradigmatic stance makes it unlikely that new angles will be discovered. In addition, many researchers do not pay sufficient attention to the power of their explanatory variables but are content with having found statistically significant results (Sjöberg, 2003b). Since significance is easy to obtain, given samples which are large enough, there is little progress to be expected.

As hypothesised in the introduction, risk was a quite powerful factor in accounting for WTW and job satisfaction. In fact, all the other variables added relatively little since the risk dimension alone accounted for more than 50% of the variance. On the basis of these data, current concern about burnout (Houkes et al., 2001; Maslach et al., 2000) seems to be very justified. Talking about such negative things may be less than popular in the HR community, however. In the present study, the risk aspects were included only after considerable hesitation. Since negative events do happen in the workplace it is of course important to study them, not to close one’s eyes to them. The fact that so little previous research dealt explicitly with risk and job related dimensions may reflect this reluctance to talk about or study what is negative.

WTW and job satisfaction were both found to be important, but in different ways. WTW was related to work performance in terms of both quality and quantity. Job satisfaction was related to intention to stay or leave for a different job. If people feel forced to stay because jobs are scarce it can be expected that there should be a large variation in job satisfaction and a correlation between performance and job satisfaction.

Other details of results worthy of special mentioning are the following:

- WTW was mostly related to having an interesting and stimulating job, negatively to meaninglessness and burn-out
- job satisfaction seemed to depend on similar factors, with the addition of job security
- intense work in terms of extreme overtime led to a lack of balance between work and family life
- a good manager could make decisions and had a clear vision, was engaged in his or her co-workers and gave positive stimulation, de-emphasised demands and control in a negative sense
- it should be noted that attitude to the company and top level management seemed to be of little importance for the psychological and social climate of the employees, and for their WTW and job satisfaction.
Risk experience was mostly related to social risks and burnout, not so much to physical risks. It seemed that there was a low level of perceived control over job risks. Burnout was clearly the most important risk factor. When people experience that their job is meaningless they just do not like it and find it hard to mobilise energy to do a good job. The alternative of external rewards might counteract such feelings but in Sweden external rewards are little used since bonuses are rarely substantial6, and salaries quite equal, especially net salaries after taxes and allowances have been taken into account.

References


Notes

1 I am indebted to Mona Nettelman for her comments on this paper. Work on the study was supported by a grant from the Swedish Council for Work Life Research.
The data were collected in two waves. The first wave was close in time before summer vacations, which may be part of the reason for the response rate. The second wave, in the autumn, gave a higher response rate.

Some employees spoke English, others Swedish.

$\beta$ is used to denote the standardised regression coefficient.

A measure of explained variance.

Except for top level management in some companies who have been known to award, to themselves, enormous bonuses. In a much discussed case in 2003 (the insurance company Skandia), top management awarded themselves bonuses at the level of SEK 500 million (US $70 million). It is interesting to enquire to what extent such practice is demoralising and demotivating for the rest of the employees.