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Work Environment Stressors - The link between employees' well-being and job performance?

Bachelor Thesis within Business Administration

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Abstract

Background: Employees are the human capital which contributes to the success and development of a company to a great extent. Thus, these days, companies do not see them only as factors of production from the classical perspective, but have started to value them as stakeholders and partners with whom long-term goals are achieved together.

Problem Discussion & Purpose: Researchers realized the need of companies to deal with employees, and for that reason, there has been great time and effort spent on studies concerning the relation between job satisfaction and job performance. However, the authors of the thesis came to conclusion that the link between job satisfaction and job performance was still a vague one. Therefore, the thesis is focused on the concept of well-being. The study concentrates on blue-collar workers, and the purpose is to explore and understand the relation between job-related well-being and employees' job performance in the context of stress caused by following environmental factors: working tools, workload, heat, noise, and safety.

Theoretical Framework: The theories used for this study are concerning job performance, well-being, and stress. An emphasis is given on the work environmental stressors, which are working tools, workload, safety, heat, and noise.

Methodology: To make this study, the researchers applied qualitative approach and used 8 semi-structured interviews to collect the data. The authors have conducted personal "face-to-face" interviews. All of them were tape-recorded to provide the maximum accuracy of received data. Information was gathered within one company.

Conclusion: After conducting research, acquiring empirical findings, and making analysis of data, the thesis authors suggest that there is a link between job performance and job-related well-being via the work environment stressors. The authors of the thesis assume that probably the relationship between well-being and performance can look as a "circle-" or "spiral"-like model, where well-being and performance influence each other mutually, however, in different ways at different stages of the model. The influence of well-being on job performance via researched work environment stressors can be either direct or indirect.

The study is of a great importance because it gives good insight of seeing well-being as a link to performance which previously was not done by any other research. Being aware of the influence of the environmental factors, managers can better realize how these factors contribute to the performance and well-being of their employees, and find ways how to improve working environment in order to increase workers' job performance and job-related well-being.

TABLE OF CONTENTS

Acknowledgements:	i
1 Introduction	1
1.1 Background	1
1.2 Problem	2
1.3 Purpose	4
1.4 Delimitation.....	4
2 Theoretical Framework	5
2.1 Job Performance	5
2.2 Well-being	6
2.3 Stress	7
2.3.1 Work environment and working tools.....	9
3 Method	12
3.1 Research approach	12
3.2 Qualitative versus Quantitative Research.....	12
3.3 Research strategy	13
3.4 Data collection	13
3.4.1 Method of data collection.....	13
3.4.2 Type of interviews.....	14
3.4.3 Time horizons.....	15
3.4.4 Target population.....	15
3.4.5 Sample selection	15
3.4.6 Interviewing procedure	16
3.5 Data Processing and analysis	19
3.6 Discussion of Trustworthiness	20
4 Empirical Findings	23
4.1 Information about Company X.....	23
4.2 Well-being and work stressors	24
4.3 Performance and work stressors.....	26
4.4 Additional information from interviews	28
5 Analysis	30
5.1 The degree of influence of each stressor on performance and well-being.....	30
5.2 How work environment stressors affect performance.....	31
5.2.1 Working tools.....	31
5.2.2 Workload	33
5.2.3 Heat.....	34
5.2.4 Safety	35
5.2.5 Noise	35
5.3 How work environment stressors affect well-being.....	36
5.3.1 Work tools	36
5.3.2 Workload	37
5.3.3 Safety	38

5.3.4	Heat.....	38
5.3.5	Noise	39
5.4	The suggested link between well-being and performance.....	39
5.4.1	How Well-Being could affect Performance	39
5.4.2	How Performance could affect Well-being.....	43
5.4.3	Well-being and Performance Link.....	45
6	Conclusion	48
7	Discussion.....	49
7.1	Contribution	49
7.2	Research Limitations and Further Research Suggestions.....	49

TABLE OF FIGURES

Figure 2-1	The relationship between pressure, performance and stress.	8
Figure 3-1	Lincoln and Guba’s translation of terms.....	21
Figure 5-1	The influence of the absence of working tools on employees’ job performance	32
Figure 5-2	Influence of the workload on employee’s job performance	34
Figure 5-3	Range of feelings occurring when sufficient work tools are not provided.....	36
Figure 5-4	The influence of the stressor on well-being.....	37
Figure 5-5	Feelings occurring when workload is perceived as too high	37
Figure 5-6	Influence of the workload on employee’s job performance	40
Figure 5-7	Negative impact of well-being and stress on performance.....	41
Figure 5-8	Influence of the workload on employee’s job performance	42
Figure 5-9	Positive impact of well-being and stress on performance	43
Figure 5-10	Positive influence of job performance on worker’s well-being	44
Figure 5-11	Negative influence of job performance on worker’s well-being	45
Figure 5-12	Performance – well-being link (the case of a direct influence)	46
Figure 5-13	Performance – well-being link (the case of an indirect influence) ..	47

TABLE OF TABLES

Table 3-1	Log of data gathering activities	18
Table 5-1	How strong influence stressor has on performance	30
Table 5-2	How strong influence stressor has on Well-Being.....	31

1 Introduction

This section introduces the reader to the background and the problem discussion. Furthermore, it highlights the importance of the choice of field of research and narrows it down to the purpose of the thesis.

1.1 Background

Companies in different industries have always strived for success, however earlier it was defined mostly in the amount of profit they received from business activities. Nowadays, the concept of long-term success has a far broader meaning, including the idea of sustainable development as a part of goals of the company (Hollensen, 2004). It means that companies no longer concentrate only on profit and other material motives. These days, in order to stay competitive in the market, the focus should be established on other areas of the company as well. These areas include environment-friendly entrepreneurship, corporate social responsibility, customers' satisfaction, expedient supply chain management including development of logistics, information flows, information technologies, and efficient human resource management (HRM) (Dicken, 2003). It does not mean that entrepreneurs should underestimate the importance of gaining profit; numbers still play a great role in companies' business, however quality of operations has become more important than it was before.

One of the reasons for that is the fact that the market is getting more and more complex due to globalization, which sets higher requirements to those companies that want to stay competitive in the market. According to Dicken (2003), globalization causes global shifts in the production of goods and services.

Development of information technology and systems leads to a rapid changing of the business environment where time efficiency becomes one of the most important prerequisites for success. As a result of these changes more pressure is put on human resource management, since it is more crucial than before to develop the right knowledge and skills of companies' employees. These are employees who are engaged in the profit gaining activities of business. They have certain influence on customers' satisfaction; produce sales goods with certain levels of productivity. As a result of a great number of activities, they lead the company towards its success or failure. Cascio (2003), states that human capital is becoming crucial for business success. "There exists a substantial number of research evidence showing a strong connection between how firms manage their people and economic results they achieve" (Cascio, 2003, p. 8). According to Fitz-enz (2000), the key to sustaining a profitable and successful company is the productivity of the workplace, the human capital.

Thus HRM is receiving enormous popularity these days, and as companies start to take more care of their employees, they have realized employee's value to a much greater extent than before, perceiving them not only as workers but as valuable resources. HRM try to develop and allocate them in the best possible ways in order to achieve long-term goals; they provide them with many benefits and good environments that would boost employee's motivation, job satisfaction, and increase their performance. The world of human resource management has never been as complex and challenging as nowadays (Cheatle, 2001).

Cascio (2003) states that the HRM related functions include planning, staffing, training, retention, development and adjustment. However, they should be seen not only as trivial

work, but as activities “adding value” to the organization’s bottom line, generating its profitability and effectiveness (Cheatle, 2001).

In order to increase work effectiveness and performance, it is important to address a number of issues, including increasing motivation among the employees, making them feel satisfied with their job, and increase their job-related well-being in general.

1.2 Problem

Researchers have dedicated much time and effort to provide businesses with models and theories concerning the relation between job satisfaction and job performance, as organizations want their employees to be both satisfied and productive.

In a job-related context, satisfaction represents the general satisfaction with the job as such, and the performance is defined in terms of level of employees’ contribution to organizational goals (Warr, 2002, and Daniels & Harris, 2002). Edwin Locke has defined job satisfaction as a “pleasurable or positive emotional state resulting from the appraisal of one’s job or job experience” (Oxfords dictionary of human resource management, 2001, p. 189). From the definitions, it can be seen that job satisfaction is a positive emotional feeling.

Previous researches showed scientifically that job satisfaction affects job performance which means that an increase in job satisfaction increases the job performance. Strauss (1968) states that social factors such as job satisfaction have an effect on performance, and adds that in order to get the picture of a “good organization” (and thus appropriate performance and job satisfaction) one needs to integrate the findings of different researchers (Strauss, 1968). A good example is Hawthorne studies at Western electric plant. The Harvard University professor Elton Mayo did his nowadays widely known research about the performance of employees and the working environment (Hatch, 1997). It was concluded that the results were more of an effect of the experiment itself than the variations in the physical or psychological factors (Marshall, 1998). Findings of the experiment are known as the “Hawthorne effect”. If a manager puts more emphasis on how the employees feel, it would usually lead to an increase in their performance (Hatch, 1997).

In this connection, such famous researchers as Herzberg (Herzberg’s **Motivation-Hygiene** theory), Vroom (**Expectancy theory**), and Garton (categorizes the factors of satisfaction into two types, **intrinsic** and **extrinsic**), elaborated many motivation theories conducting numerous researches and scientific investigations, initially inferring that job satisfaction influences employees’ performance. It is certain that behind all of these theories lies an assumption that the more employee is satisfied with his/her work, the better work results are expected, i.e. the higher is the productivity of his/her job-related activities.

However, on the other hand, some other researchers demonstrated that there is **no** significant relation between the job satisfaction and job performance. Brayfield and Crockett (1955), Iaffaldano and Muchinsky (1985), and Petty at al. (1984) state that in overall job satisfaction and work performance correlate at about +.15, though more strongly than this for white collar workers (cited in Argyle, 1989, p.6) (see Appendix 1 for complete information). From statistical point of view, even though the correlation between job satisfaction and performance exists, it cannot be proven strongly enough to work in practice; it is not that significant (Iaffaldano and Muchinsky, 1985).

Moreover, several researchers refer back to Iffaldano and Muchinsky (1985) who claimed that the relation between the two concepts is somehow misleading. These researchers base their skepticism on the fact that, for example, there has been limited number of partici-

pants in the criticized studies, and that they have used wrong measurements of performance. In addition, Wanous is one of the few researchers who also decelerated that it seems more expedient that performance leads to job satisfaction (Muchinsky, 1993). Lawler and Porter (1967) support this relation, believing that when an employee does what is expected, in terms of the level of performance, and manager rewards the employee extrinsically or intrinsically, which results in increased job satisfaction.

Furthermore, according to Argyle (1989), there is no research on the **effects** of job satisfaction on performance. Korman (1977) states that in order to research the relationship between job satisfaction and performance, the two main methods were used and these were various experiments and correlational analysis. An important point is that the correlational analysis does not allow causal inference; it does not define which variable represents cause and which, the effect (Korman, 1977). Thus if it does not show exactly what the cause is and what the effect is, it is possible to assume that not only job satisfaction influences employee's performance, but also employee's performance could have influence on job satisfaction. Argyle (1989) states that it is still largely unclear to what extent job satisfaction effects productivity, or **vice versa**.

Thus, after extensive studies of the literature related to job satisfaction and performance, authors of the thesis came to conclusion that job satisfaction is a really vague concept. Even though it was studied by number of famous researchers, there are still no general conclusions about its link to performance. Moreover, what seemed to be scientifically correct was severely criticized by the statisticians saying that there is no significant correlation between the concepts.

Because of a number of reasons mentioned above it is confusing for managers to choose the right approach of how to deal with employees' performance and job-related feelings. Most of the literature in the business field focuses on employees' job satisfaction thus skipping the rest of the spectrum of job-related feelings, which are included in the concept of well-being (Appendix 2). Thus it makes sense to focus on the concept of well-being which is presented in the next section and is one of the key concepts of this thesis.

According to Newel (2002), **well-being** in general is a person's overall feeling; good or bad. The whole spectrum of feelings ranges from positive feelings such as pleased, satisfied, or energetic to negative feelings including sad, depressed or unsatisfied (for a more detailed information see Appendix 2). Thus, job satisfaction is only one of the various feelings in which an employee feels towards his/her job, which indicates a certain direction by its positive tone (Warr, 2002). In such a way it is important to explore the concept of a job-related well-being, because this is exactly that feeling an employee feels while working.

The difference between job-satisfaction and well-being is clarified further by the nurse **example**: the performance of a nurse is at the desired level. She feels satisfied with what she does; she likes her job and has an overall job satisfaction. However, she feels much stress due to the fact that there are many patients she has to take care of in so few hours and she is not allowed to make a mistake. This creates a noticeable negative impact on her well-being. Similar things happen when there is a lack of opportunity to perform due to the shortage of certain tools for work and disrupting working conditions (for example, the absence of bandages). Thus, even though the nurse receives a good salary, likes her profession as such, and gets satisfaction from her achievements, her general job-related well-being is quite low (Wicks, 2006).

This practical example shows the importance to explore the concept of well-being and its relation to the performance in the context of work environment stressors, which is conditioned by the limitations to perform job-related tasks. Even though it is an important field of research for both organization and employees, there are no theories presenting a legible link between job performance and well-being. Therefore, the authors of the thesis would explore the relation of these two concepts in the context of stress in order to contribute in this field of research through the empirical investigation. Moreover, if findings of the research are substantial and trustworthy, it may generate further research in this field.

1.3 Purpose

The purpose is to explore and understand the relation between employees' job-related **well-being** and their job **performance** in the context of stress caused by the environmental factors:

- working tools,
- workload,
- heat,
- noise,
- safety.

1.4 Delimitation

This study concentrates on the blue-collar workers who work in the production line of the company X

Blue collar worker is defined as “manual worker in a factory” (Dictionary of human resources and personnel management, 1997, p. 29) or “somebody whose job involves mainly physical labor” (Dictionary of business and management, 2004, p.47). The authors of the thesis refer to this definition when using the concept of “worker” during their research.

Since the study was conducted only in the company X, its results are applicable to this particular company's blue collar workers; the thesis authors do not claim applicability of results to other companies and settings.

2 Theoretical Framework

Theories of job performance and well-being are presented in the part below. Furthermore, the term of stress is portrayed together with its main causes, stressors, that are related to working conditions and tools.

2.1 Job Performance

It is essential to understand what performance means in order to improve and manage it well. According to Rothwell (1996), “**perform**” means to begin and carry through to completion; to take action in accordance with the requirements of; fulfill (cited in Gilley & Maycunich, 2000)

In addition, according to Campbell (1990), **job performance** can be defined in terms of whether employees’ behaviors contribute to organizational goals (cited in Daniels & Harris, 2002). The author’s of the thesis see the two definitions complementing each other and it is necessary to have them both since they define better the meaning of performance and make it clearer.

Further in the thesis, when the authors mention the term “performance”, they imply **job** performance of employees.

Performance can be seen as an individual, group, or organizational task performance. Organizations have a vital need to understand how to improve employee’s performance, and therefore they try to find an explanation as to why employees fail to perform (Muchinsky, 1993). The authors of the thesis concentrate in the individual workers’ job performance.

There are numerous causes that affect the level of performance. Korman (1971) considers **internal determinants** as very important factors that affect job performance. Internal determinants are divided into two main aspects. The first aspect is the skills and abilities for a given job that the employee has. The second aspect is the role perceptions or the requirements for a job as an influence on work performance. This means that if one perceives his/her job role accurately, he/she would be considered as an adequate performer. Conversely, the one who does not perceive the requirements of the job would be considered as ineffective (Korman, 1971).

In addition to the internal factors that affect employee performance, other factors that relate more to the **external environment** determine the adequate performance of the employees. Work conditions are an example of the external environmental factor that influences the level of performance. There are various working conditions that people work under; some employees work indoors other outdoors. Some are exposed to intensive noise, heat, cold, different schedule times, and high risk of injury/illness (Muchinsky, 1993).

Deming (2000) describes that the physical work environment can cause stress which hinders employees from performing at the desired level. This could be, for instance, the lack of the right tools or the break down of a computer system making it impossible to use.

Deming (2000) gives an example: an employee complains about his\her inability to perform due to the fact that his machine breaks down often. The employee is asked why he\she cares, since he\she will get salary anyway, independently of the status of the machine; and that person simply answers that he\she cannot work. Mostly importantly, the employee is not even capable of fixing the machine because they do not possess the right knowledge or proper training. At those moments, the employee must contact a technician

which brings long waiting time. Then the employee is asked why he\she cares again and why this is a problem. The answer was expressed: “Money cannot pay me for the stress that I endure waiting for that man to come” (Deming, 2000, p.81).

Another reason that influences performance can be communication. Sometimes managers fail to communicate specifically what employees need to improve and why, which can lead to decreased performance. Unfortunately, many managers have problems dealing with employees who do not perform well. Additionally, employees tend to not manage their performance well, when organizations demand quality work in a short period of time (Gilley & Maycunich, 2000).

2.2 Well-being

Well-being is a concept which includes both **physical** and **psychological** well-being (Warr, 2002). The work environment which affects physical well-being can be more noticeable, which means that one can more easily see the direct link between the physical environment and a subsequent health problem. In contrast, the way in which the work environment affects the psychological health is less noticeable and less direct.

In the last 30 years, theory and empirical research has focused more on the negative impacts of work on well-being; more precisely, on how work stress influences health. Therefore, physical well-being is not going to be discussed in the thesis; the authors will focus on the psychological well-being of employees as important factor influencing their performance (Briner, 2000).

Psychological well-being can be taken context-free, and it involves feelings about life in general. Furthermore, restricted concern in this context is job related well-being, which is people’s feelings about themselves in relation to their job (Warr, 2002). In the thesis, when the authors discuss the well-being they refer only to the job-related well-being.

It is essential to consider the well-being approach when looking at job satisfaction or simply at job-related well-being, because the concept of well-being captures the two major focuses mentioned above - negative and positive feelings. This is shown in the two-dimensional model suggested by Warr (2002) that represents the whole spectrum of feelings connected with the concept of well-being. This model can be found in the **appendix 2**.

From the appendix 2, it can be seen that satisfaction and dissatisfaction are only minor factors of the broader concept of well-being, which includes a range of both negative and positive feelings. Here can be found happiness and pleasure, sadness and anxiety, for instance. In the middle of the model, there is something called the “neutral level” of well-being. This refers to a situation when all the negative feelings a worker is feeling, are balanced by an approximate equal amount of positive feelings. However, it is important to note that the average level of well-being of a worker is assumed to be slightly higher than the neutral level, and thus it is important to explain the difference.

Positive well-being creates psychologically healthy individuals who have the capability to show better interpersonal behaviors, create warm and trustworthy relationship, and have a higher performance, being more punctual, taking fewer sick days etc. Conversely, decreased well-being would decrease the chances to cope effectively with the stressors. It is very important to pay attention to the psychological well-being because it influences the employee’s behavior, interaction with colleagues, decision making and it continues to affect the family and social life as well (Rasulzada, 2007).

It is vital to examine what are the causes that are that are decreasing the well-being of the employees. As Briner (2002) states, the work environment is a main cause that affects both the physical and psychological well-being. The work environment can be physical such as equipment, heat, noise, or lightning, and it has been shown that this influences a number of psychological processes. The other environmental factor is characteristics of the job itself, such as task complexity and ability to perform, workload, or task repetitiveness, which are some of the most important factors that influence well-being.

Furthermore, organizational features such as culture, history, and aspects of extra organizational factors such as labor market conditions or industry sector, are also important factors that contribute to the well-being of the employees. For example, organizational factors can affect well-being in situations when the employee experiences difficulties in relationships outside of work that can affect his/her stress level. This can lead to less capability to deal with problems and be less challenging (Briner, 2000).

After examining the literature in this field, the authors of the thesis can make an inference that work environment factors could possibly link together job performance and well-being. They are known as physical stressors in the work environment and were named in the previous section. The importance of these stressor factors is assumed to be noticeable because they can influence the level of both job performance and job-related well-being.

2.3 Stress

Job stress is a significant topic of interest for organizational researchers, managers, and society as a whole. It is of great importance, since job stress is one of the factors of influencing individual work performance (Warr, 2002).

Another substantial factor is the fact that stress causes a high cost on individual health and well-being (Cooper, Dewe & O'Driscoll, 2001). Thus, the importance of stress is significant for managers to take note of to be more aware of the costs associated with ignoring the issue of stress (Cranwell-Ward & Abbey, 2005)

According to Cranwell-Ward & Abbey (2005), stress occurs when there is perceived imbalance between pressure and coping resources for a particular situation.

Stress can be described in 4 different ways, depending on the level of pressure:

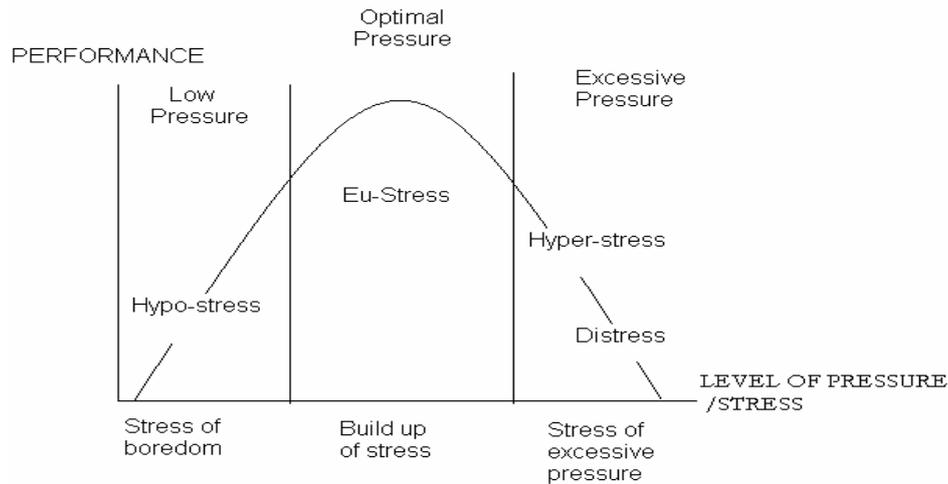


Figure 2-1 **The relationship between pressure, performance and stress.** Melhuish, (1978); (Cited in Cranwell-Ward & Abbey, 2005, p. 125)

1. **Hypo-stress:** Cause of stress may sometimes be boredom or too little pressure and often can take the form of frustration, indifference, depression, and pent-up emotion.
2. **Eu-stress:** When an individual is under the influence of optimum pressure one usually thrives and makes the most out of one action. This is also known as the stimulating side of stress, or “stress arousal”. It helps employees to uncover their hidden mental and physical abilities.
3. **Hyper-Stress:** This situation happens when pressure becomes extreme. The hyper-stress reactions may vary from person to person and even for the same person, from situation to situation. In this phase, one is very likely to feel panicked, out of control, and even unable to cope with a given situation.
4. **Distress:** After a continuous stress within one individual, the one experiences distress. This might have negative effect or costs for both the individual and the organization. In addition, the individual is most likely to experience health problems and a wish to get away from the situation. When being too high, stress is seen negatively (Cranwell-Ward & Abbey, 2005)

It is beneficial to understand the relationship between pressure and performance since certain levels of stress enhance performance. The optimal level of stress is the Eu-stress. There are different ways to obtain a good level of stress, and it can be done by looking at different levels of pressure (Cranwell-Ward & Abbey, 2005).

In times when employee does not experience sufficient pressure, managers can do the following things to increase it, including offer change in job position, give employee additional tasks, search for ways to increase the challenge by stretching up the existing targets, encourage him/her not to be afraid but to undertake the risks (Cranwell-Ward & Abbey, 2005).

In cases when there is an optimum level of pressure, managers can maintain it by: constant watch over of stress levels as well as looking for signs of excessive stress, make sure that employees have enough time for both breaks and relaxation, supervise hours worked, and make sure that reasonable working hours are kept, hold regular reviews, support employees, and give them acknowledgment for the work they have done communicate on regular basis (Cranwell-Ward & Abbey, 2005).

If employees have reached excessive levels of pressure, managers need to act fast before distress and exhaustion sets in. Steps must be taken to ensure pressure and, in turn, stresses can be reduced by giving the current work to somebody else, making sure that employees take the breaks they need and give them time to charge their batteries, reviewing targets and closing dates and making changes there if necessary, supporting employees to take steps to increase flexibility, talking about a particular situation, recognizing the possible causes of excessive stress and addressing them (Cranwell-Ward & Abbey, 2005).

This is a cause that would make the employees feel stressed due to the pressure put on them to perform while at the same time they do not have the ability to perform. Most frequently this phenomenon can be seen in the context of inadequate work environment and working tools.

2.3.1 Work environment and working tools

Work tasks are made of sequences of actions, carried out to achieve certain goals (Warr, 2002). Good skills of employee enable them to operate efficiently with respect to goals of the work. The work environment is a significant factor that should not be underestimated. Warr (2002) states that environmental pressures may sometimes cause problems for skilled performance, resulting in impaired quantity or quality of working output, or, for example, mistakes in decision making. Thus, it is important to take into consideration the environment in which employees operate.

The physical work environment stressors have not been focused enough upon by previous research. However, it is significant to explore them since working environment and working tools are not only related to job performance; they are also one of the major factors of stress (as mentioned in the stress section). If work tools are not provided or provided insufficiently, it has a negative effect not only on the level of stress, but also on the ability to perform. In this situation, even though the employee feels job satisfied and performs at a permissible level, his/her general level of well-being might not be that acceptable (Wicks, 2006).

For the purpose of the thesis, its authors concentrated their attention on the 5 stressors of working environment which are listed below.

2.3.1.1 Environmental stressors in the workplace

Environmental conditions such as noise and heat, for instance, can be considered as significant threats to the effectiveness of work, the motivation, and health of employees. According to Sales and House (1971), unsatisfactory working conditions are highly correlated with coronary heart disease ($r = +.83$) (cited in Argyle, 1989, p.16), and as far as work effectiveness and the level of motivation are concerned, they get reduced thus diminishing overall work results.

Taking into consideration Korman's (1977) and Muchinsky's (1993) suggestions, the authors of the thesis divided the environmental stressor factors into such categories:

Noise

Muchinsky (1993) defines noise as “unwanted sound”. Noise appears to affect the quality of work and the level of performance. The most noticeably affected by noise tasks are those requiring concentration (Cohen, 1968, cited in Muchinsky, 1993). Moreover, according to Korman (1977), noise also possibly affects physiological health of working individual.

Muchinsky (1993) states that when frequency of noise exceeds 90 dB, there is a noticeable decrease in workers’ performance. Korman (1977) supports Muchinsky’s (1993) point of view saying that the maximum noise frequency level in the work place should not exceed 85-90 dB.

Moreover, according to Korman (1971), the effect of noise on performance is dependent on what kind of noise it is: steady or intermittent. If the noise is steady, the employee can adapt to it increasing physical effort; however, if the noise is intermittent, it is more difficult to adapt and there might appear a decrease in performance. However, even though noise can be steady, in some cases when its level is too high (more than 95 dB), it may cause a physiological damage over time and cause decreased performance (Korman, 1977).

Heat

According to Muchinsky (1993), heat stress is not only a problem for employees who work outdoors, but also for those working around subjects emitting heat, and it can greatly impair productivity of those who perform strenuous work. Moreover, heat stress can also impair performance in tasks requiring mental effort (Muchinsky, 1993).

Korman (1977) suggests levels of dry-bulb temperature that are desired for permitting optimal level of workers’ performance. Desired temperatures are: for “moderate, hard work” 18°C, for “strenuous work” 15° – 16°C, and for “light, sedentary work” 21°C in winter, and 25° – 26°C in summer (Korman, 1977).

Workload

Generally, a high workload with two or more tasks is a primary cause for decreased performance. There are two methods to measure or indicate high workload. One of the methods is worked on the performance level and therefore called “performance based indicators”. The second approach is on the psycho-physiological level (Warr, 2002).

A shortage of labor causes the workload to increase per worker employed at work. Thus, each worker is expected to compensate for lack of additional workers. This results in decreasing level of quality of production. Nonetheless, the employees suffer from stress (Cranwell-Ward & Abbey, 2005).

2.3.1.2 Working technology and tools

One of the most important factors in working environment is the technology and working tools. Here, it is important to specify that the term “technology” includes not only machines used in the production line, but also smaller electronic equipment such as computers, calculators, and other smaller tools as screw-drivers, stationery, etc. These tools have an effect on productivity level (Korman, 1977), i.e. the more advanced the technology is available in the working place the higher possible performance usually can be achieved by the employee.

However, the most advanced tools are not in absolute terms sufficient to meet the requirements of a highly productive firm. The important thing to remember is that it is not always necessary to have the latest most developed technological equipment, but to make

sure that the employees are provided with the tools **needed** to do the a good job and that those tools work-always (Carlaw, 2002).

Nowadays, computers have a noticeable effect on the lives of blue-collar and white-collar workers, “Technology is driven to its limits to automatize as completely as possible” (Muchinsky, 1993, p. 512). He adds that thus a very important issue becomes the division of labor between humans and robots, and not only in terms of productivity, but also in terms of job satisfaction and organizational impact.

Another factor that is connected with the tools are the guidelines that employees receive from their managers. Deming (2000), states that if an employee does not have clear guidelines, confusion can arise on how to handle the job. Employee might do what is expected (according to the guidelines) and feel satisfaction from performing, but still not feel good due to a very confusing environment, with instructions not being clear or being changed frequently. Thus, his\her well-being decreases (Deming, 2000).

It is also important to provide the worker with work tools. Here, it is possible to give an example concerning their absence: an employee says he/she spends a large amount of time changing tools needed to perform since they break due to low quality. The management buys low-quality tools to save money for the company. The employee argues that money saved on buying cheaper tools would not result in **any** overall savings since it would consume 10 times more time spent on changing them. When asking the employee why this is of concern to him since he/she still gets paid for the hours of work, he/she says that he could perform much better if was provided with tools of higher quality. This employee performs at the acceptable level (calculated by the management and with respect to the tools provided); he/she does what he is expected to do. Thus his/her job satisfaction is at an “ok” level. Yet the tools are an obstacle making it impossible to perform in a way employee wants and knows he\she could to being provided with the right tools. Hence, employee’s sense of well-being is affected in a negative way (Deming, 2000).

2.3.1.3 Safety and accidents

Developing safe working conditions is of paramount significance. Researchers in different disciplines address this issue and are all mostly concerned with reducing frequency and severity of work accidents.

Dangerous working conditions may influence not only employees’ productivity and work outcomes; they also generate stress which leads to a lower job satisfaction or even an increase in personnel rotation (Muchinsky, 1993).

According to Muchinsky (1993), there are several categories of accidents’ causes. First, accidents may occur due to worker’s personal characteristics or lack of attention. Second, alertness and stress can be determinants of work accidents. Korman (1977) states that Keenan, Kerr, and Shermon (1951) concluded that the increasing feeling of control over working environment or increased feeling of self-esteem and competence will reduce the likelihood of accidents. Increased job satisfaction, good working results, promotion possibility are those factors that would generate positive emotions of employees.

3 Method

In this chapter, research approach, strategy, and method choice are presented. Further, the techniques of how to increase trustworthiness of research findings are portrayed, and analysis procedure is described.

3.1 Research approach

One of the most important questions in research design is which research approach to be used. The scientists suggest choosing between the two major approaches, **deductive** and **inductive**.

According to Saunders, Lewis and Thornhill (2007), the **deductive** approach involves developing a theory and hypotheses and then testing them. It represents the commonest view of the nature of the relationship between theory and research (Bryman & Bell, 2003). Thus, it has a theory as a foundation of a research, then test if it agrees with the reality by stating a hypothesis. Furthermore, it aims at explaining casual relationships between certain variables (Saunders et al, 2007).

As far as **inductive** approach is concerned, it helps formulate a new theory resulting from observation of empirical data. This approach is suitable to analyze the cause-effect link between particular variables (Saunders et al, 2007). Thus, the researcher having a real life case develops a theory based on practical examples and previous research.

First, the authors of this thesis use the deductive approach because they are testing how the working environmental stressors influence the job performance and employees' well-being separately. For these stressors there is already suggested theory how it affects the job performance and the well-being.

However, afterwards, when authors explore the relationship between job performance and well-being and develop suggestions for how these two concepts could be linked, the authors use inductive approach since they try to develop theory, which was not suggested before by any research.

3.2 Qualitative versus Quantitative Research

Saunders et al (2007) state that there are two research methods: **qualitative** and **quantitative**. In order to choose which of them is more suitable for the research, it is necessary to consider strengths and weaknesses of each of them.

According to Patton (1990), **quantitative methods**, are intended to measure the reactions of many people to a limited set of questions, thus facilitating comparison and statistical aggregation of the data. It means that this method allows data generalization because of the fact that in order to generalize statistically about regularities in human social behavior it is necessary to select samples of a sufficient numerical size (Saunders et al, 2007). Thus, the size of a sample in the quantitative method should be quite extensive.

Qualitative methods, on the other hand, permit to study certain issues of interest in depth and detail having quite limited sizes of samples. This method is also suitable when trying to "develop an understanding of complex phenomena from the perspective of those that are living it" and when trying to generate deeper knowledge and see new linkages (Barr, 2004, p. 166). Also, according to Barr (2004, p. 167), qualitative research is suitable when "creating a better understanding of complex processes and of the influence of individual perspectives in those processes". A qualitative method also gives the researcher freedom to identify

and explain links as they appear, compared to the quantitative research, which often has pre-specified the variables and links (Barr, 2004). If the findings of the research are not in line with the established theory, one can speculate what the **cause** might have been that led to unexpected result easier in a qualitative research (Barr, 2004).

Due to the number of features mentioned above, the thesis authors believe the qualitative research would be the most suitable to achieve their thesis objectives. When exploring the relation between well-being and job performance, the authors try to look at the problem from a new perspective. Thus, it is of great importance to go deeply into the issue and see the underlying factors that affect the relation of the two concepts (Saunders et al, 2007). Besides that, the use of qualitative research in their research is suggested for inductive approach; it also fits well with both exploratory purpose and with interviews (Saunders et al, 2007).

The authors are fully aware that in comparison to the quantitative research, a qualitative study usually does not allow to generalize research results. Thus, the authors do not have intention of making generalizations. The main purpose of the thesis is to study the relationship between the two concepts and try to discover some tendencies and patterns which could generate further research (Saunders et al, 2007).

3.3 Research strategy

The research strategy used in certain study is mostly defined by the purpose of one's research. According to Saunders et al (2007), there are three main types of purposes of research: exploratory, descriptive, and explanatory. An **exploratory** study is used to examine a particular phenomenon or a problem, seek for new insights afterwards assessing it from a new perspective. The purpose of **descriptive** research is to give an accurate description of persons, events, and situations (Saunders et al, 2007), while **explanatory studies** are mainly focused on studying a problem with the purpose of establishing causal relationships between variables.

In the beginning, the authors give a short description of the variables and factors that the concepts well-being and employees' performance consist of. This is done to acquire some information related to the topic before exploring it (Saunders et al, 2007).

However, the purpose of this thesis is mostly **explorative**. An exploratory type of research is used since in the literature, there are no legitimate defined relationships between job performance and job-related well-being. An exploratory technique can, according to Saunders et al (2007), make a clearer understanding of the chosen problem, which the authors of the thesis think is needed. The main focus of the thesis is established on the relation between the two variables with the subsequent goal to see them in a new light, i.e. find out how they rely on each other in practice, exploring if job performance affects well-being. The "new light" here refers to using the concept of well-being instead of job satisfaction.

3.4 Data collection

3.4.1 Method of data collection

According to Saunders et al (2007), there are many ways in which the data can be collected: performing interviews, using questionnaires, or conducting experiments. Moreover, Sekaran (2000) mentions another technique called projective tests, where respondents are asked to write a story, complete a sentence, or describe their reaction to pictures. Every method

has its unique assignment and its appropriate use leads to sufficient results. Thus, it is important to pay much attention to the choice of the data collection method.

A qualitative interview is suggested when it is important to “understand the reasons for the attitudes and opinions” (Saunders et al, p. 315, 2007), which is the situation in this research, trying to find out why employees feel stress, and why they have a certain attitude towards their job.

Some of the reasons in favoring this decision are that, first, qualitative research is flexible. It allows the researcher to directly follow up any un-clarity that might occur after an answer is given (Marshall & Rossman, 2006). Second, the researcher can easily go back to certain questions to face the issues that emerge in the course of interview (Bryman & Bell, 2007). Besides that, this technique gives more flexibility when analyzing the data (Marshall & Rossman, 2006).

Interviews provide rich, detailed answers that allow studying a phenomenon deeply. As the nature of the study is mostly explorative and the authors of the thesis aim at studying the phenomenon deeply, conducting interviews is a sound consideration. As accuracy in such type of research is of great significance as well, the use of interviewing techniques reduce possible misunderstandings because the interviewer makes sure that all the questions are clear to respondent, and that respondent knows what he/she is asked. It reduces possible bias associated with respondent’s misunderstanding or misinterpretation of a question (Bryman & Bell, 2007).

3.4.2 Type of interviews

According to Saunders et al (2007), there are three main types of interviews: **structured**, **semi-structured**, and **in depth**, where each of them has a different purpose. **Structured** (standardized) interviews are mainly used for gathering data with its following quantitative analysis, when, on the other hand, **semi-structured** and **in-depth** interviewing techniques (non-standardized) are used mostly in qualitative research (Saunders et al, 2007).

When a semi-structured interviews conducted, the interviewer has a list of suggested questions and themes to discuss, most often referred to as an **interview guide**, but the exact questions posed can vary in each interview (Saunders et al, 2007). One can also change the order, eliminate, or add some questions as the interviews are carried out. This is an advantage since the respondent can answer to a question in many different ways and might give an answer touching something not fully covered in the beforehand written set of questions, and this might be worth exploring more (Bryman & Bell, 2007).

The authors of the thesis use semi-structured interviews due to a number of considerations. First of all, semi-structured interviews are preferred when more than one person is supposed to carry out the research (Bryman & Bell, 2007). Secondly, Bryman and Bell (2007) state that if the researcher is beginning the investigation with a clear focus rather than a general notion of wanting to **explore** the topic, it is advisable to use semi-structured interviews to be able to address more specific issues. Saunders et al (2007) add that for exploratory study with explanatory elements semi-structured interviews are more favorable than structured or in-depth ones. Since the thesis authors’ purpose is not only to give a description of a topic, but also to discover how the relationship between well-being and performance works (by asking about employees’ feelings and opinions) why it happens like this, and seek new insights, semi-structured interviewing technique is the most suitable one.

3.4.3 Time horizons

Saunders et al (2007) suggest that when planning research it is important to define whether the research will be a “snap-shot” (cross-sectional) or like a diary (longitudinal). The main use of **longitudinal** study is to observe the change and development of certain phenomenon, while the **cross-sectional** is mainly used to study a particular problem phenomenon at a particular time. The data is gathered only once (Sekaran, 2000).

The thesis authors use a cross-sectional research, which means that they interview each particular respondent once. It is explained by the fact that the studied phenomenon is applicable to any point of time; the relation between variables well-being and performance is constant and is not supposed to change over time. Another reason for interviewing participants only once are limited resources, referring to the time constraints.

However, is it possible to use a concept of a cross-sectional approach conducting qualitative research and using interviewing technique? As far as this question is concerned, there are a great many opinions, however authors such as Bryman and Bell (2007) and Saunders et al (2007) state that even though the cross-sectional design is mainly placed in the context of quantitative research, it can also be applied in the qualitative one. The main use of cross-sectional approach according to Bryman and Bell (2007) in the qualitative research is employing unstructured interviewing or semi-structured interviewing techniques. It fits into thesis authors' context well.

3.4.4 Target population

The entire group of people, things or events of interest which the researcher is interested to investigate is called population (Sekaran, 2000). The authors of this research were interested in the following target population:

- Blue-collar workers working at **Company X**;
- People who permanently live in Sweden.

3.4.5 Sample selection

The subset of the population is called sample which contains some elements selected from the population (Sekaran, 2000). The process of selecting a sufficient number of elements from the population is known as sampling. The sampling enables the researcher to discover patterns or characteristics of the population (Sekaran, 2000). The following sample was selected for this study:

The sampling unit

- Blue-collar workers;
- Employees working in the production line of the **Company X**;
- With minimum 2 years of full-time working experience;
- People who permanently live in Sweden;
- Employees willing to participate in an interview.

Sample selection procedure

In order to obtain necessary information, thesis authors needed to interview 5 to 10 respondents. The main reason for this number is the fact that the total number of blue-collar workers working in the production line department is around 40. Therefore 5 to 10 respondents would be 12.5% - 25% of the employees working in that department. This number would facilitate for the authors to discover patterns and tendencies within organization. In addition, this number is sufficient since the authors did not intend to make any generalizations of the population, and a big number of respondents was not required since the authors intended to conduct a qualitative study (interviews) (Saunders et al, 2007).

After discussing this issue with the manager of the production line of the company X, the authors were provided with 8 respondents, which was within the authors' requirements.

Respondents were selected from those blue-collar workers who were willing to give interviews and at the same time were competent enough according to the authors' criteria. The access to the companies' workers was obtained through their production line manager, Mr. Hultqvist. The employees were selected by their own will so that they would be confident and enthusiastic to give answers.

The sampling procedure applied by the thesis authors is called self-selective sampling, which is suggested by Saunders et al (2007) when doing research exploring certain feelings or opinions about the topic of research. In addition, self-selection sampling is useful in an exploratory research (Saunders et al, 2007). This facilitates getting answers aligned with the objectives of the thesis authors' research.

The authors of the thesis are aware that in this type of research the sample is not meant to represent a population. However, even though it is impossible to make generalizations, obtained information can act as a generator for other researchers to explore the field deeper (Bryman, 2003).

3.4.6 Interviewing procedure

The thesis authors conducted personal "face-to-face" interviews. In the beginning of the interview meeting, the researchers introduced interviewees the studied field of research, the main purpose of interview, and its procedure (Kvale, 1996). Then some of the general questions not directly related to the purpose of the interview were asked to prepare the respondent for the interview and decrease the level of pre-interviewing stress. Moreover, taking into consideration Kvale's (1996) recommendations, the authors recounted the interviewers where the obtained information would be used, assuring anonymity and confidentiality of data.

All the interviews were tape-recorded to provide the maximum accuracy of obtained data and avoid possible misinterpretations. According to Saunders et al (2007), tape-recording interviews has several advantages: the researcher can focus more on listening; it allows for re-listening; and permits the use of direct quotations in the empirical findings and analysis parts (Saunders et al, 2007). This technique, however, has also some disadvantages. For example, it might inhibit the participant when answering questions; and that can affect reliability in a negative way (Saunders et al, 2007). However, in order to diminish possibility of occurrence of this problem and reduce possible bias, thesis authors emphasized to all of the respondents anonymity and confidentiality of their answers.

Also, when conducting interviews, the authors of the thesis considered other issues mentioned below. During interviewing, the authors were listening carefully to what respondents were saying, notifying the signals done by them and showing appreciation of the direction

interview was taking. This was done by asking open-ended questions such as, “I guess if you did that you’d then be in a position to...?” (Osland, Kolb & Rubin, 2001) Also that was done by interviewers to be able to check if everything was fully understood by respondents. Besides that, the thesis authors avoided to suggest what the respondent should feel. An example of incorrectly formulated question could be, “If that happened to me, I’d be upset. Are you?” (Osland, Kolb & Rubin, 2001). This is what the interviewers were avoiding.

3.4.6.1 Preparations for the interviews

Before conducting interviews, the thesis authors reviewed the thesis purpose and set the goal of making clear what exactly should be achieved carrying out interview. Afterwards, the list of questions was prepared to enable easier orientation for the interviewer during interviews and serve as a guideline for the whole process of interview. Kvale (1996) refers to such technique as designing interview guide, which contains a list of questions and follow-ups that help researcher not to lose track during interview.

When writing an interview guide Bryman and Bell (2003) suggest bearing the following points in mind: create a certain order of the topics covered making the interview flow better, to express the questions in such way that would facilitate fulfilling the research questions, use understandable language that could be appropriate for the respondents, and make sure not pose leading question. This information is important since it is “useful for contextualizing people’s answers” (Bryman & Bell, p.349, 2003).

This certain set of questions that was used as interview guide is shown in the **appendix 3**. However, as the thesis authors conducted semi-structured interviews, they asked additional questions that were not defined before the interview in order to have a high level of flexibility and get sufficient answers.

After the interviews were conducted, the last 4 questions in the appendix 3 were asked to give the authors some idea of the internal rank among the five stressors. More precisely, the authors wanted to see if some factors influenced employees more than others or if all stressors influenced them to the same extent. The aim was to see if some tendencies and patterns in the respondents’ answers could be found regarding the ranking.

In order to perform the interviews as well as possible considering the authors’ knowledge and experience in interviewing, the authors learned and practiced their communication skills to become active listeners. This was done before conducting the “real” interviews and took place in JIBS, where a certain number of students were interviewed with the purpose to find inaccuracies and mistakes in the process of interviewing and gain more experience. The authors learned to listen intensely and carefully to fully understand what the respondent was saying. This was crucial when, afterwards, paraphrasing the content of the interview and increase the level of quality when conducting it (Osland, Kolb & Rubin, 2001). Afterwards, the interviewers started to conduct the “real” interviews based on thesis objectives.

It is important to point out that interviews were intended to be conducted in English. The main reason for that was the fact that two of thesis authors do not possess an appropriate level of Swedish language knowledge in order to conduct interviews and communicate with respondents (Respondents are those people who permanently live in Sweden). The authors realize that this can introduce some bias to the results of the interview since the level of English of respondents could have limited them to some extent in their responses. Therefore, in order to cope with this situation, due to the fact that respondents would be Swedish-speaking workers, one of the thesis authors (who has Swedish as first language) was

present during each interview. In case when the respondent did not understand the question or did not know how to formulate his/her response, this interviewer helped him/her to do that giving additional comments and explanations. This was very important since interviewing person should completely understand the question and be able to give a trustworthy response. Additionally, in case when respondent could not express his/her thoughts in English fluently, he/she was allowed to do it in Swedish. That was done to reduce possible bias that might have occurred due to the respondent's language barrier.

To conduct their interviews, the thesis authors asked company's manager to grant an isolated room free of disturbance. It was provided by the company's X production line manager and corresponded thesis authors' requirements.

During interviews, in the room were present only one respondent and two interviewers. Employees' management or colleagues were not allowed to be present during interviews because they could bring moral pressure on employee and cause receiving biased results.

The roles of the interviewers were as follows: one interviewer was responsible for conduction of interview as such, and the second one acted mostly as an observer. Having a more neutral position and being more objective, the later one was allowed to focus on the setting, and to observe if something in the setting might have affected the result of interview during the time when the interview was conducted. The observer could also give some comments or explanations, but only if that was necessary and needed. This allowed increase the level of objectivity collecting results and decrease potential bias (Saunders et al, 2007).

3.4.6.2 Evaluation of interviews

After each interview was conducted, the interviewer and the observant summarized the interview. This covered not only what was said during interview by both respondent and interviewer, but also the atmosphere in the room during the interview, and how the respondent was perceived. After making evaluation of the factors mentioned above, the authors of the thesis can note that all the respondents were perceived as calm, relaxed, and willing to express their feelings and attitudes. The interviewer and the observant had the impression that all the respondents could express their opinions freely.

3.4.6.3 Facts about the collection of the data

In the table 4-1 are presented some facts about the collection of data.

Table 3-1 Log of data gathering activities

Date	Place	Activity	Who	Age	Length
2008-04-17	Company X	Interview	Respondent 1	60	24:09
2008-04-17	Company X	Interview	Respondent 2	19	31:45
2008-04-17	Company X	Interview	Respondent 3	26	27:19
2008-04-17	Company X	Interview	Respondent 4	36	19:27
2008-04-17	Company X	Interview	Respondent 5	20	27:22
2008-04-17	Company X	Interview	Respondent 6	40	17:15

2008-04-17	Company X	Interview	Respondent 7	46	22:12
2008-04-22	Company X	Interview	Respondent 8	23	41:34

Thesis authors are aware that respondents' age vary, and that could have an effect on their answers. This should be kept in mind even though the analysis will not be based on the aspect of age. The analysis of the influence of age can be a recommendation for a further research.

3.5 Data Processing and analysis

When the collection of relevant data has been done through interviews, the next main steps are the processing and the interpretation of the collected data. First, the processing of data is carried out through transcripts. Second, data gets interpreted, which includes its categorization and coding (Bryman & Bell, 2003).

After data collection, the authors transcribed interviews to summarize obtained information. It has number of advantages because it reduces limitations of the human memory and allows for other researchers to go through the obtained information to evaluate the analysis (Bryman & Bell, 2003). Transcribing also helps categorize and code data and is the starting point of the analysis process in most qualitative researches (Bryman & Bell, 2003).

In order to make analysis easier and more successful, the data was systematically collected, handled, and stored (Thomas, 2004). This was done, by saving the recorded tapes and, as mentioned in previous section, by transcribing and saving all the conducted interviews.

In the qualitative research, it is important to choose an appropriate way to analyze collected data because qualitative data is known to be more complex to analyze than quantitative, which has a rather standard set of procedures. Also, the qualitative data techniques for interpreting the textual materials vary more. Due to the fact that the qualitative data materials have a more complex nature of analysis, the authors used categorization scheme. It means that the empirical findings through the interviews with perspective of the theoretical framework were classified into meaningful categories from which the needed analysis was drawn (Saunders at al, 2007). This categorization of the data is called thematic analysis (Maxwell, 2005). The purpose with coding in research of qualitative nature is to rearrange the collected data "into categories that facilitate comparison between things in the same category and that aid in the development of theoretical concepts" (Maxwell, 2005, p.96). The categories would be identified based on the objective of the research.

Furthermore, the authors used something called the **editing strategy** when categorizing the data. The use of editing strategy implies searching for meaningful patterns or categories in data without a predetermined template used in the template strategy. The editing strategy is more suitable for a qualitative study since the researcher is "guided by initial concepts and developing understandings that she shifts or modifies as she collects and analyses the data" and thus is more at the view of an interpretive (Marshall & Rossman, p. 155, 2006). For that reason the authors of this thesis have decided to use an editing strategy which implies deciding on the categories after having all the interviews transcribed.

After transcribing interviews, information was summarized in the empirical findings' section in such a way so it addressed the three key concepts: well-being, job performance, and stress (five working environment stressors). The information was categorized into three main sections, namely:

- well-being and work stressors,
 - performance and work stressors,
- (The work stressors include work tools, workload, safety, heat, and noise)
- additional information relevant to the research that was provided by the respondents.

The authors of the thesis decided to include “additional information” section because even though this information was not directly relevant to the authors’ research, it still had a strong connection to the concept of working environment. It could be useful for the subsequent analysis since it allows seeing the problem from the broader perspective and defining some other important aspects of the topic.

Data Analysis

The authors of the thesis have developed the following structure of the analysis in order to explore the relation between the concepts of well-being and performance.

- First, the aim was to understand the effect of every work environment stressor’s influence on employees’ job performance and well-being separately. This was done in sections 5.1 (How work environment stressors affect performance) and 5.2 (How work environment stressors affect well-being). There, the analysis mostly took descriptive character and followed the deductive approach.
- Afterwards, however, the authors continued their analysis basing it on the results of previous sections (given in sections 5.1 and 5.2), and combining it with their empirical findings (respondents’ interviews), suggested how well-being and job performance could be related to each other. There, even though some of their research results were verified by some theoretical models, due to the fact that the link between well-being and job performance have not been offered by any up-to-date literature, the research followed more of the inductive approach. Finally, the authors, developed a model called “performance-well-being link” which in their opinion suggests link between job performance and job-related well-being. The possible model offered to the reader is portrayed in the latest part of the Analysis in subsection 5.4.

3.6 Discussion of Trustworthiness

When conducting a research it is important to deal with the issues of quality. In a quantitative research, the concept of quality includes reliability and measurements of validity. Here, the focus is not on measurements and it has therefore been discussed if the two concepts have much relevance in this type of study. If these two concepts cannot be used, Guba and Lincoln (1994) stress the importance of creating other criteria relevant for qualitative research in order to improve the quality, and suggest using such term as trustworthiness which consists of **Credibility**, **Transferability**, **Dependability**, and **Confirmability** (Bryman et Bell, 2003).

Conventional Inquiry	Naturalistic Inquiry
Truth Value(internal validity)	Credibility
Applicability(external validity)	Transferability

Consistency(Reliability)	Dependability
Neutrality(objectivity)	Confirmability

Figure 3-1 Lincoln and Guba's translation of terms (Seale, 1999, p. 45)

Credibility corresponds to validity and is the appropriateness of the research. According to Lecompte and Goetz (1982), it is often the strength of qualitative research since a qualitative research approach makes “assumption of multiple constructed realities” (Seale, 1999, p.44) Thus, it is the credibility that determines whether the research can be accepted or not. The thesis authors believe that their research has a high credibility due to the fact that all the information used in the research was relevant to it. The interviews questions were designed to get the appropriate results for the investigation which increases validity of findings.

Transferability means to what extent the results in the research can be applicable to other settings. Qualitative research has most often the center of a small amount of participants and therefore provides information of relatively small groups compared to quantitative research. However, since the purpose of research was not to make generalizations about a whole population, but explore the field by conducting interviews, the information was unique and significant even though it mostly provided examples which could contribute to generalizations that could be reached by further research (Bryman & Bell, 2003). This research, however, was limited to the blue-collar workers and only in one company for which results were proven in one area. However, the authors may assume that the results of their thesis could possibly be applicable to other settings as well, such as blue-collar workers in other industries.

Dependability deals with the extent to which the study can be replicated (Bryman & Bell, 2003, p.288). To accomplish this criterion it is important to keep full information on how the research was conducted in all of the different stages of the process. This gives the reader a chance to see to what extent the suggested methods have been followed and how consistent the writers have been (Bryman & Bell, 2003). The authors of the thesis saved the interview guide and all the other important information that was used to conduct their research to increase its level of trustworthiness. However, even though full information was kept, it might be difficult to replicate the study because of the qualitative assumption that the environment is constantly changing (Marshall & Rossman, 2006). Another issue that should be taken into consideration when replicating the study, is the fact that the thesis authors have used semi-structured interviews to collect data, and even though interview guided framework was provided to the reader, there is no guarantee that results of a replicated study would be absolutely the same as the current research ones.

The forth and last concept is **conformability**. It is impossible to fully achieve this criterion in any type of research. Researchers within the quantitative field of research often have the opinion that qualitative research is too subjective. However, the researchers tried to act in a way so that personal values would not interfere when processing as well as analyzing research findings by practicing and learning to be non-evaluative (Bryman & Bell, 2003).

Conformability is relevant when conducting interviews. Saunders et al (2007) discuss two bias related to it: **interviewer** bias and **interviewee** or response bias. The first, interviewer bias would arise if own values and beliefs are not left out when asking the questions and when researcher interprets and analyzes the responses. The second one is the response bias which can be related to the previously mentioned bias in the terms of how the interviewer perceives participants of the study. When having an explorative purpose of research and

conducting in-depth or semi-structured interviews it is usually related more to the fact that the interviewee may not want to explicitly discuss certain parts of the research questions. A reason for this can be that the response of the interviewee could be followed by more detailed questions which could be sensitive (Saunders et al, 2007).

In order to reduce possible bias and increase trustworthiness of the research results, the authors used number of measures. To decrease the **interviewer** bias, first, the authors practiced their communication skills to become active listeners. Second, the “real” interviews were tape-recorded, which gave opportunity to listen to them again and clarify all the necessary details. However, the authors realize that interviews audio recording has some disadvantages such as it may “switch” the respondent’s attention from interview and focus it on the tape-recorder or inhibit interviewee response (Saunders et al, 2007). Thus it could have a negative influence on the respondents’ answers. To increase the conformability of study, interviewees were asked for permission to record interview. This is discussed in more details in the later part of this sub-section dealing with the **ethical** issues of the authors’ research.

Furthermore, interviews were conducted by two people to obtain a higher level of information gathering process objectivity and when necessary provide additional help. Following Bryman’s and Bell’s (2003) recommendations, researchers ensure that their personal values did not interfere when processing as well as analyzing findings. They tried to take a neutral position during the whole research process, starting from gathering data to its analysis and results’ interpretation. While conducting interviews, in order to not lose the track of the interview objectives, the authors had an interview guide with beforehand prepared questions.

In order to reduce **interviewee** or response bias, respondents were informed that collected information would be used only for academic purposes, and names of participants would be kept absolutely anonymous and not be spread to anyone including their managers and colleagues. The authors of the thesis believe that when making the interview, it is of great importance to provide the participant’s right on anonymity. Otherwise, it can lead to harmful repercussions for the respondent of the interview (Saunders at al, 2007). When conducting interview, the authors of the thesis made it clear to the participants that they have the right on the information confidentiality and anonymity.

Ethics

The thesis authors believe that the ethics is of a great importance when conducting research. The issues of ethics should be seen in every step of the research. Flick (2006) states that the whole research process should be ethically correct, from choosing a topic, identifying a sample, selecting participants to collecting and analyzing the data. Therefore the authors have taken in consideration all these factors and worked carefully in every step to be ethically correct.

It should be mentioned that being ethically correct does not mean that researchers are morally incompetent. In contrast, ethical problems are not always easy to recognize and due to this fact researchers may often get confronted with inappropriate behavior (Thomas, 2004).

In conclusion, the authors of the thesis realize that even though they take number of measures to prevent bias and present trustworthy research results, they are not claiming that all the research results that are introduced in the later sections are absolutely irrevocably true. At the least, the topic is complicated and there might be many ways to conduct the research and interpret its findings.

4 Empirical Findings

This section includes a presentation of the company, the findings from the data collection. The findings are divided into 2 main parts, where the first one discusses findings in the aspect of job performance and the second one discusses findings in the aspect of well-being

4.1 Information about Company X

All the information given about the company X is received through personal communication from production manager on 2008-04-09. Some additional information is used from the company's web page. Due to anonymity of the company the authors of the thesis can not give the exact names of these sources.

Information for the company X given below is essential for this study because it helps the authors of the thesis understand and see facts from both workers and company's perspective. This is done to increase objectivity of the research.

Company X is a well-known Swedish company established both in Sweden and internationally which offers a wide range of products within its market and has a large share of consumers. Company's offices and production facilities are situated in many different countries worldwide. The headquarter office as well as the main production facility are located in Sweden (Hultqvist, **Personal communication**, 2008-04-29). The production facility is the main focus in this study.

The production facility has 350 employees, from which of them 250 are blue-collar workers in the production line working full-time. 40 of the blue-collar workers are working in a particular department from which the interviews were conducted. The blue-collar workers are divided into three shifts: day, evening, and night shift, with production in the first two mentioned (Hultqvist, **Personal communication**, 2008-04-29).

Piece-rate system

On the webpage there is a history of a "piece-rate system" which implies that workers salary is dependent on their performance. This means that when workers perform more and better they earn more and, conversely, when they do not perform enough they earn less. "This is something what keeps their performance at a high level", says production manager (Hultqvist, **Personal communication**, 2008-04-29).

Work schedule in the company

The day shift starts at 6:42 in the morning and finishes at 15:30. The evening shift starts at 15:24 and finishes at 23:48. The overlap of 6 minutes is due to need of communication between the employees in the different shifts. These two are the only ones included in this report since the night shift does not have any production, only cleaning of the machines (Hultqvist, **Personal communication**, 2008-04-29).

Work tools that the company uses

The tools used by the employees in this study are mainly tools like production machines, spanner, hammer, tweezers, tongs, computers, which is used when operating and managing machines. The computer is used to search for information about the production schedule and about instructions for the different products. Different types and forms of raw materials are included in the concepts of tools, since without material, the employees cannot perform. The employees are dependent on suppliers of raw materials which almost always are delivered in time for the production. Some materials are kept in stock to minimize the risk of a stop in production. The last thing included in tools are work instructions necessary to

perform. This is needed since without clear instructions from management, inability to perform can arise, so lack of clear instructions is an obstacle to perform (Hultqvist, **Personal communication**, 2008-04-29).

Heat and noise

In the production facility, machines are running all day thus making the temperature go up. The company has installed a system “air-conditioner”, which is supposed to regulate the temperature, keeping it at a normal level. The system is supposed to keep the temperature at an average of 19-21 Celsius degrees. However, during the summer when the weather is very hot, the temperature in the production facility increases till 24-25 degrees and stays at that level since the system cannot balance the temperature back to 19-21 degrees for a relatively short period of time. The noise is another inevitable issue when working with machines. It is constant at the level of 65-72 decibel (Hultqvist, **Personal communication**, 2008-04-29).

4.2 Well-being and work stressors

▪ *Working tools*

The respondents state that the main cause of stress and negative feelings in the working place are when the machines break down or when the working tools are not where they are supposed to be. Respondent 2 says: “when there is a problem, we have to fix it as fast as possible and then you get stressed because you do not know where the right tool is which means that we have to run around and find it. I feel stressed when it happens.” He explains further that the machines could break down several times in a relatively short period of time. In addition, the same respondent mentions that he feels frustrated and irritated because he already fixed the machines, yet the same error occurs.

Respondent 5 tells the following: “The machine breaks down all the time so you are pretty used to it but of course you can get a little bit angry, if you are in a bad mood [...] you let it go very quickly”. In contrast to the others, respondent 4 answers that he is not having negative feelings when this happens, because in that case he is not able to help to improve the situation himself, so he has a break until the mechanic solves the problem.

▪ *Safety*

Seven of the respondents say they feel safe at work. Opposite to the seven respondents who feel safe at work only respondent 1 claims that he is not feeling safe lately, which he believes is a result due to the management failure to inform employees about the safety issues.

All the eight respondents declared that accidents do not happen so often. Some of them claim that most of the accidents occur because the worker does not take safety precautions advised. Usually accidents that happen are burning injuries on fingers or some injuries caused by squeezing explain some respondents. Respondent 3 and 5 mention an accident with a guy with long hair, which he accidentally got into a machine. They say that this arouses in them feelings of insecurity with their work. Therefore, the respondents say that to avoid such accidents from happening, they use a special blue hat as protection from accidents and as well as for hygiene reasons.

Respondent 8 speaks about how they categorize accidents into two kinds: “ouch” and “oi”. “Ouch” – is if one gets his/her finger squeezed, for instance, and “oi” – if it is slippery on the floor for some reason and you almost fall; if something **could have** happen, but did not

happen. Those people who have worked in the factory know what to do and how to protect themselves from accidents, therefore mainly only new employees are exposed to accidents. However, respondent 7 talks about that all new employees are having a safety run-through, teaching them what to think of in a safety perspective.

Most of the respondents believe that work environment in the production line is designed to reduce occurrence of accidents. They stated that there are many safety devices such as doors, grids, and light sensors that will cause the machine to stop if the beam of light is hindered or stopped. They decelerate that they have lot of emergency bottoms that they can push immediately if something happens, which will cause the machine to stop, instantly.

In contrast, respondent 8 claims the following: "I think that everyone who is working here, have worked for such a long time, so they know what to do or not to do, and thus in general it is not that bad". However, he believes it can be dangerous for new people. This respondent says "I can give you an example. Two years ago there was a girl working in a department where we have big containers and we have emergency buttons, and when you press on them, the whole line stops. That girl was up there alone and accidentally pressed the button and everyone was clapping and saying "woohoo" (in another connected production line), but no one got up there. Then she said what if something actually would have happen to me? You see, people do not take it as seriously as they should have done. That is bad because something could actually happen."

▪ *Noise*

All of the respondents state that the level of noise is high in the production line. However, in order to cope with this problem, they use ear plugs or listen to music to reduce the noise.

Four of the respondents proclaim that they are annoyed by the noise and it affects their hearing. Respondent 1 has answered the following, "I think a lot of the employees in this factory/company have got some damage with the hearing". Two of the four respondents said that they feel tired and stressed of the noise. Furthermore, the following has been stated by the last of the four, "I feel tired! I get very tired both physically and mentally, particularly mentally". However, almost all of the respondents' states that the pause rooms, ear plugs, and mp3 players help cope with the noise efficiently. Respondent 5 says, "Sometimes I can feel dizzy, but we have a pause room which is very calm and I use to relax in."

Four of the other respondents, however, answered that the noise is not a big problem for them and that it does not affect them much.

▪ *Heat*

Six of the respondents stated that they have problems with the heating or temperature in the factory. Moreover, they say that in the winter it is cold in the factory and in the summer it is very hot there. Four of these respondents stated that they feel hot and sweaty while working. In their opinion, because of the heat they feel less energetic, get irritated, and angry, which decreases their job-related well-being. Respondent 3 affirms that air conditioner in the factory is not always working properly in the summer; therefore, he says, the temperature can go up to 32-33 degrees Celsius.

Beyond the six respondents, respondent 8 and 6 who state that the air conditioning system installed in the building breaks down quite often, and it gets too hot in the production line,

but it does not affect their well-being a lot. One of these two respondents explained that if his job was more physically challenging, the heat would affect him more than it does now.

- ***Workload***

Five of the respondents think that the workload varies, sometimes it is low when the machines work and do not break down often. On the other hand if the machines break down frequently the workload is high. Respondent eight says that sometimes the workload is very high because there is shortage of people in the production line. Respondent 7 believes that he cannot work for many years because it is physically very heavy, which could cause damage to shoulders and neck. When there is too much workload respondent 5 states that it makes him feel tired, however he thinks that this does not happen often and that in this job it is not much to do. One of the respondents said he is easily affected by stress, therefore had to change a department to avoid it and to have more individual work in order to better plan the day, balancing the workload more. Apart from these respondents, respondent 4 differs, believing that his workload is very low and that this does not affect his performance. However, sometimes this can make him bored which he thinks is negatively but it does not affect his performance. Respondent 6 claims that he feels frustrated when the workload is really low, for example when the production stands still because he thinks that is not a positive sign.

A few of the respondents said they are positively affected by higher workload which keeps them more focused and influence to work harder, and they believed that this was a result that workload was not that high compared to their previous jobs.

4.3 Performance and work stressors

- ***Working tools***

All of the respondents answered that they have most of the time, the right tools to perform. Even though, in all of the respondent's opinion, usually there are the right tools to work with, some of them claim that there are situations, when the worker cannot work because of lacking them. Respondent 2 claims that when they do not have the right tools in the line to fix the problem; it is because the needed tool is misplaced or taken by the other workers. Hence, he says that they have to run and search for them and get in another line which takes time. Few others have stated when they cannot perform well as a cause of a major problem with the machine, for which they need an outside help from a mechanic who knows the machine better. Respondents state that machines break down occasionally; it happens more frequently in summers.

Respondent 6 says he sometimes cannot perform as a result of lack in raw material. This is due to late arrivals from the suppliers or the production line just runs out of them. The delivery time might vary noticeably, and it is difficult to predict when it might happen. He believes that the effect of this can be that he does not have the ability to perform. However, he still feels the pressure to do so, because if the production at his department stands for too long the next step in the process of the production also stops, creating a domino effect. This can affect many parts of the factory, which he believes is the main cause of frustration and stress for him.

In addition to the above, respondent 8 says that management task is to provide the production line with the right material, for which sometimes they can make mistakes with the planning schedule that can create confusion. When confusion like this occurs, he claims that employees cannot plan their work day. This can sometimes create stress since the

workload then increases when they have to change the material for one or several production lines in the last second. He thinks that this can affect the performance of the employee because they lose production time, due to disruption in the plan of production.

The majority of respondents state that if the proper tools were provided, it would have a positive effect on their performance.

- *Safety*

Some of the respondents explain that there are safety representatives who are responsible for the safety issues; their task is to check if everything is safe in the production facility. Three of the respondents were such representatives. So if something happens the employee goes to one of those persons and that person helps writing a report about it. Likewise, external inspectors are mentioned, who (that will) visit and control the safety in the company. Respondent 1 states that the employees have several courses in safety regulation, evacuation exercises with the fire alarm (to know where to go and how etc.). Additionally, respondent 6 says that dangerous places are marked; which makes the company not have so many dangerous places. The traffic of the forklift trucks has certain routes and employees know where to go and where not to go.

In addition, respondent 3 compared the safety issues in Sweden with a work place in a company in Croatia where there was almost none safety precautions. He says that after experiencing Sweden, working in Croatia today will cause feelings of anger and that he will "sell propaganda for Sweden in the aspect of safety issues".

- *Noise*

All of the respondents are aware that the noise is very high, but the attitudes about it differ. Five of the respondents claimed that if the noise was to be reduced, their performance could probably be better. In contrast, other two stated that they do not believe their performance will increase if the noise is delaminated. This was mainly due to the fact that ear-plugs were used or mp3-players, making them shut out the noise. Besides, most of them state that although they are aware of the noise as a negative issue, they got used to it.

- *Heat*

Four of the respondent strongly confirmed that the heating in the company affects their performance and as a result they perform less. They said that they cannot perform as good as they could since they feel uncomfortable, tired and sweaty. In addition to that, two other respondents mentioned that when it is really hot in the factory, during the summer, the machines break down much more often what affects their performance, even though they are not the cause of it and cannot do anything about this. The rest of the respondents (two workers) said that the heating is not a big issue that affects their performance.

Also, when it is too cold, and the temperature is lower than average, employees can wear special jackets or sweatshirts provided by the company; if it is warm they can wear just shirts. Thus only respondent 4 stated that low temperature in the production link affects him.

- *Workload*

One of the respondents says that when workload is high, pressure increases his performance. He explains: "when someone (a manager) tells us stocks are getting low and we have to perform as much as possible, it triggers me and makes me work more". Respondent 6 expresses similar attitude to this pressure that arises when an increase in the workload occurs. He believes that the pressure makes him more focused. Furthermore, some of the re-

spondents state that they do not think that high workload has a positive effect on their performance. Respondent 8 says that having temporarily employees during the summer, is resulting in a higher workload, and this is a cause of stress. Together with the heat stressor he says: "In the summer, I can honestly tell you, I am not doing my job 100%."

Some respondents say that in short periods of time it is good to have an increased workload. In contrast the same believe that when the workload is at a constant high level has a negative effect.

4.4 Additional information from interviews

Here some further information are included that could be interesting when connecting the different concepts, but yet does not have as strong importance as the others, and thus is not included in the analysis part as a separate stressor.

- *Work Instructions*

Work instruction problems are mentioned by all eight respondents. Five of the respondents state that even though their work instructions are mostly clear, sometimes there is a lack of them. In such situation respondents feel stressed. According to respondent 8 the information is handed to employees in the last moment. Respondent 8 claims that he experiences a feeling of anger and stress when supervisor does not give him guidelines on how to do certain operations or tasks. Interviewee 7 thinks that the problem is not in the uncertainty performing the work task, but more in general information about the goals or production plans. It makes them feel "left out". In their opinion, it affects them noticeably, "It affects me and my colleagues much [...] If you work there and you do not have clear instructions or you get changes in the production plans in the last moment, then it is difficult to perform as you are supposed to. Because you want to do a good job but it is hard to do when you do not get clear instructions."

However, as far as respondents 1, 3, 4, 5, and 6 are concerned, they say that work instructions are clear to them.

- *Extra hours*

All the eight respondents state that working extra hours is optional. Seven of eight workers work extra hours and it is their own initiative. Respondent 7 does not work extra hours because has a back disease and cannot do it physically. Otherwise he would do it. All the respondents believe that the main reason for working extra hours is money. However, two of them also mention a good atmosphere at work and good relations with colleagues as a factor for taking extra hours.

- *Staff/ co-workers*

Seven respondents mentioned this factor of the working environment. Relationships with their colleagues are important to them. Six of the respondents like their colleagues, and their work environment is good and makes them happy. Good co-workers make them feel more enthusiastic, less bored. One of respondents adds that workers in the production line these days work together much more than they did before. The seventh respondent, however, states that it depends on a person. He does not have good relationships with all the co-workers.

- *Work responsibilities/ Extra responsibilities*

Two of the respondents admit that one of the reasons that makes them more energetic and productive are their job responsibilities. These days they have some extra responsibilities, which they did not have before, and in their opinion, it boosts their job satisfaction and increases their performance. Also, new responsibilities allow them to plan their work on their own. They are more flexible.

- *Dust*

Respondents 3 and 8 mention the discomfort that is connected with the high level of dust in the working place. They say that it is a serious obstacle for their performance, especially at one of the production lines. Respondent 3 says, "There is one production line where they're changing big containers. It gets very dusty there, and it's very hard to breathe. That affects me very much. Many times I could not breathe. Then I'm getting out of there and telling everyone, if you wanna sit here, it's your problem."

- *Prerequisites for a good performance*

When asking question: "**What conditions increase your performance?**" Three respondents were absolutely certain that their performance could be higher if they would be paid more. However, the rest five workers mentioned other factors for their increased performance. Three respondents state that they feel good when they perform at high level. They get internal satisfaction from their work, when they see progress in their work. Nevertheless, one of them would be willing to perform even better, if his efforts were recognized, and not necessarily in terms of a monetary reward. One of the respondents states that his performance increases when in general he feels good and when he works with his colleagues, "I work in a group of very good people, therefore we try to perform well. We help each other a lot so it always works out." Another of the respondents states, "When I have done a good job or when I get responsibility for another task outside my duties, I feel excited and more motivated to work better."

The last respondent said that his ability to perform is limited by machine, and he could perform better if the machines would work better (fewer breakdowns, for instance).

5 Analysis

In this section, the findings of the empirical part are integrated with the theoretical framework. First, thesis authors show how environmental factors influence on the performance; next, how the same factors influence on the well-being. The last part shows the suggested link between job performance and well-being.

The structure of the section Analysis is described in the section 3.5 called “Data Processing and analysis” in the Method part of the thesis.

5.1 The degree of influence of each stressor on performance and well-being

In order to present the approximate level of influence of each of the researched work environment factors, the thesis authors have included 4 ranking questions in their research. (They can be found in appendix 3). The **Ranking** questions are those questions, where respondents ranked the factors in the order of their influence on their performance and well-being (1 – strongest influence; 5 - weakest influence). After the analysis of all the five stressors’ influence on the key concepts of this thesis, well-being and job performance, the authors point out that according to their research results every researched factor has a different level of influence on well-being and performance.

Respondents’ answers on the ranking questions are summarized below:

- Question 1: **How strong is influence of these stressors on your performance? (1- strong 5 – weak)**

Stressor:	Average impact ¹ :	RANK (1- strongest influence; 5 - weakest influence)
Absence of Working tools	4.25	1
High workload	3.63	3
Safety	2.85	4
Noise	1.88	5
Heat	4.13	2

Table 5-1 How strong influence stressor has on performance

Maximum average value can be 5.00.

From the table it can be seen that the respondents show that the strongest influence on their performance have “Working tools” (4.25 out of 5.00 max), then follow “Heat” (4.13), “Workload” (3.63), “Safety” (2.85), and finally, “Noise” (1.88 of 5.00 max).

¹ Since the thesis authors conducted a qualitative research to see the major trend/pattern, they offer the reader the “average” value of the impact of stressors on well-being and performance. By presenting it they, however, do admit that the average value does not always present the most precise numbers due to possible differences in values. To get more precise results, it would be optimal to use such programs as SPSS to calculate the level of variance, dispersion, and other measurements of validity and reliability. Authors suggest doing this in future; it could be a good topic for a further research. This issue is discussed in the “Discussion” section in the end of thesis.

Thus the “Working tools” factor is ranked number “1”, meaning that it has the strongest influence on their performance than the other factors. The “Heat” in ranked number 2; “Workload” – 3; “Safety” – 4; and the “Noise” is ranked as the “last”, having in respondents’ opinion the weakest influence factor on their performance.

- Question 2: How strong is influence of these stressors on your well-being? (1- strong 5 - weak)

Stressor	Average impact	RANK (1- strongest influence; 5 -weakest influence)
Absence of Working tools	4.00	2
High workload	3.25	3
Safety	3.13	4
Noise	2.75	5
Heat	4.13	1

Table 5-2 How strong influence stressor has on Well-Being

Maximum average value can be 5.00.

The stressor “Heat”, according to respondents’ responses, has the strongest influence on their well-being (4.13 out of 5 max). Then follow “Working tools” with the average impact on the well-being 4.00; then go “Workload” (3.25), “Safety” (3.13), and “Noise” (2.75). The “noise” has the smallest effect on respondents’ well-being, while the “Heat” and “Working tools” (absence of the working tools) have the strongest effect.

Thus, respondents ranked stressors “Heat” (1) and “Working tools” (2) as the most influential of their well-being. The factor “Noise” (5) is ranked as the least influential on the level of well-being. This can be, probably, explained by the fact that the respondents can reduce the level on noise using earplugs, mp3, or going to have some rest to the “pause” room. “Safety” has a rank 3.

Thus, from the tables 5-1 and 5-2 it can be seen that all the five stressors’ impact on the employee varies (even though the authors admit that these may not be the exact numbers representing the degree of influence of each stressor on performance and well-being). Thus, it can be inferred that different stressors affect employees to different degrees.

5.2 How work environment stressors affect performance

5.2.1 Working tools

Carlaw (2002) states that it is not that significant if workers have the most developed technological equipment; the most important is to provide workers with sufficient working tools and to enable them to do a good job. Deming (2000) supports this fact stating that the absence of the right tools or their insufficient amount hinders employees from performing at the desired level. In the company X, the cases when there are no sufficient working tools, are:

- Breakdown of the machine;
- The lack of raw materials in the production line;
- Unclear work instructions;
- Misplacement of the right tool.

In order to make further analysis not that confusing, all the previously mentioned situations will be called “absence of working tools”.

When the problem occurs with the machine, workers should wait until machine gets repaired. It doesn't allow them to perform. In all the respondents' opinion, the breakdown of the machine decreases their performance. Moreover, as one of the respondents said he is willing to perform better and he believes that he mostly performs at high level. However, his performance could be even higher if the machine worked better (fewer breakdowns, etc). The thesis authors' research have also shown that when respondents do not have appropriate work instructions (for example, production planning schedule is confusing or they are not informed of the changes in the production plans), cannot perform at the desired level because they do not know or are not sure of what they are supposed to do. This fact can be supported by Korman (1971) who states that when the worker knows his/her job requirements and tasks well, he/she can be considered as an adequate performer. Opposite, the one who does not perceive the requirements of the job can be considered as ineffective (Korman, 1971).

The results of authors' research have also shown that the lack of the raw materials hinders employees from working. When they do not have right materials, they do not have an opportunity to do their work. In order to continue work, company's workers need to wait until raw materials are delivered and only then they can resume their work again. Thus, their performance is affected to a great extent, negatively.

Previous information portrayed negative influence of the absence of working tools on workers' ability to perform. However, in order to see influence of the absence of working tools from broader perspective, the authors of the thesis have also researched if there is any positive effect of the absence of working tools on job performance. In this connection, the research has not showed any positive effect of the absence of working tools on workers' performance (By stating “positive” the authors mean that factor increases workers' job performance.)

In authors' opinion, the influence of the stressor “working tools” (their absence) on workers' job performance can be depicted in the following way (see Figure 5.1)

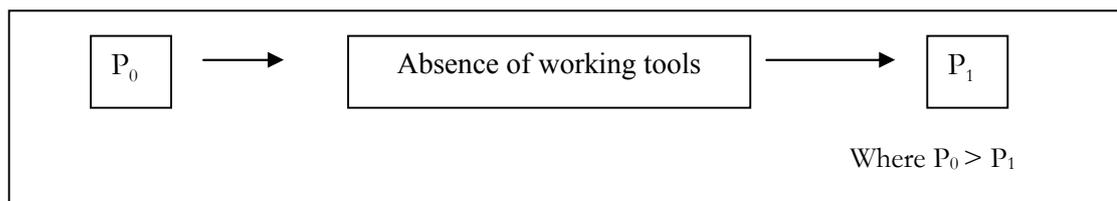


Figure 5-1 The influence of the absence of working tools on employees' job performance

(P_0 - Performance without impact of stressor and P_1 - Performance after negative stressor's impact).

The authors' research findings have shown that influence of the absence of working tools presumably can have a “direct” influence on workers' job performance, meaning that when there are no working tools, employees' performance decreases directly from P_0 to P_1 .

Rank of the influence of the stressor² “working tools” is 1 (out of 5).

² Rank of the importance of the stressor means that this factor, according to respondents' opinion, has the strongest influence on their ability to perform or on their well-being. The thesis authors decided to show

The authors' research showed that the absence of working tools has the strongest negative effect on workers' performance that the rest of the stressor factors.

5.2.2 Workload

For company X there are mainly two reasons that can influence the workload to increase. First one is when breakdown of the machine occurs. Second one is when there is a shortage of workers. Cranwell-Ward & Abbey (2005) supports this fact, stating that the workload can increase when there is a shortage of labor for which the workers are expected to compensate for lack of additional workers.

The empirical findings of this research show that increased workload can have both positive and negative affects on the performance. A few of the respondents say they are positively affected by higher workload which keeps them more focused and influence to work harder, thus their performance increases. This was explained by the fact that the same respondents thought the workload (i.e. the management required output produced by workers) originally was low. It is also important to mention that these employees are with experiences in other companies or industries where they had higher workload. This could be interpreted that with more experience in other businesses or industries, one can have more to compare with.

In contrast, other respondents do not perceive high workload to have a positive effect on their performance. Some days the workload is very high due to many problems with the machines, which affects the performance of many of the respondents negatively. Warr (2002) says that, high workload where there are two or more tasks are a primary cause for decreased performance. Moreover, respondent 8 says that during the summer, it is much to do because a lot of new people are working during the time of vacation, and thus brings a raise in the pressure on the other employees to perform higher to compensate for the newly hired ones. This respondent than says that this has negative effect on the employees, meaning the pressure got to high which causes them stress (which in turn job related well-being decreases), so he admitted he did not do his job fully. Therefore, the workload affects the performance to some extent.

From their research results, the thesis authors can assume that stressor workload can have an "indirect" influence on the respondents' job performance. The research results have shown that, first, the stressor workload affects worker's well-being negatively or positively (arousing the negative or positive range of job-related feelings), and only afterwards that new employee's well-being creates an effect on job performance. The stressor, from the authors' research, does not have a direct influence on employee's performance. This link between workload stressor's influences on employee's performance is illustrated on the figure 5.2:

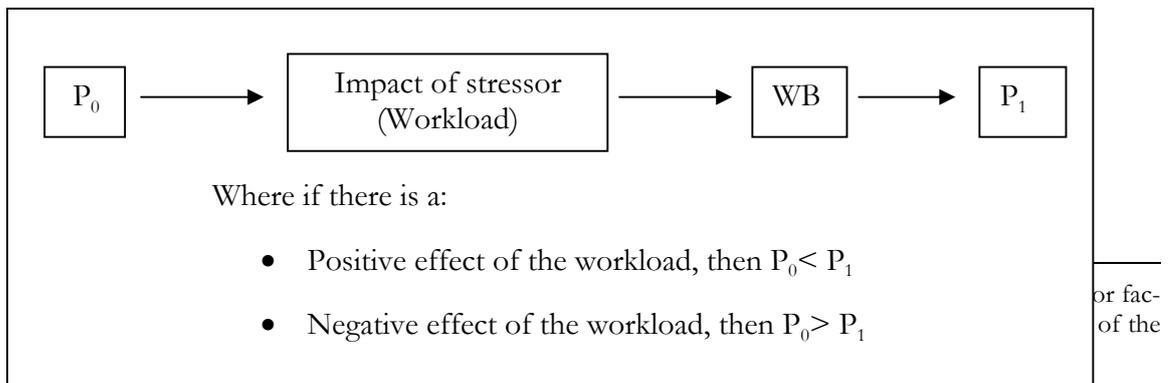


Figure 5-2 Influence of the workload on employee's job performance

(P_0 – performance without impact of stressor, P_1 – performance after negative/positive stressor's impact)

Rank of the influence of the stressor “Workload” is 3 (out of 5).

Thus, this factor is one of the strongest in its influence on the employees' performance. It follows after “Working tools” and “Heat”.

5.2.3 Heat

In the production line of the company X, workers are responsible for different types of operations that differ by the level of task complexity and heaviness. Those respondents who have to perform more strenuous work (at least four respondents) believe that heat in the production line affects their performance and they perform less than usually. Muchinsky (1993) believes that heat is a problem for employees who work around subjects that emit heat (machines in the production line, for example) and it can greatly impair productivity of those who perform strenuous work. In this connection, Korman (1977) suggests that for the optimal performance, desirable dry-bulb temperature for workers who perform strenuous work in the production line should be 15°-16°C; for those whose responsibilities include moderate work it should not exceed +18°C; and the mean preferred temperature in summer normally should be +21°C.

However, in the real life situation in the production line of the company X, the average temperature in summer is about +25 °C, and according to one respondent mentioned, the air can heat up till 32-32°C (!) Thus it can be seen that the “real” temperature in the production line is much higher than the desirable 15°-16°C (suitable for this type of work) required for an optimal performance. 75% of the respondents (6 of 8 respondents) concern about high temperature and state that it affects their performance negatively. One respondent even directly expresses that he does not do his job fully during the summer and this was partly due to heat. According to the six respondents' opinion, the heat causes them the negative range of feelings, which include feeling less energetic, irritated, and angry. They admit it decreases their job-related well-being, and because of the high level of heat, they do not feel well, and that decreases their job performance.

Thus, from the thesis authors research results, it can be assumed that the stressor “heat” (as a “workload”) has an “indirect” influence on the respondents' job performance since, first, the stressor influences employee's well-being, and only afterwards, that new well-being affects employee's job performance. This indirect link between the stressor and performance is illustrated in the figure 5.2 in section 5.1.2.

Rank of the influence of the stressor “Heat” is 2 (out of 5).

The factor “Heat” has the 2nd strongest influence on employees' performance. It follows after the “Working tools”. This factor has a noticeable influence on respondents' ability to perform even when it is not “reinforced” with combination of other factors.

5.2.4 Safety

This part elaborates the impact on performance as a cause of the absence of safety in a workplace. Included in this section is the respondents' answer on security and comfort that in some aspects is connected to safety. As Muchinsky (1993) says dangerous working conditions may influence not only employees' performance and work outcomes but also generate stress.

If the company focuses on safety issues actively, the environment would reduce accidents, which all the respondents confirmed to be true.

All the respondents are satisfied with how the company manages safety issues which could indicate that this is something they work with continuously. From this the authors assume that this consideration of safety has a positive effect on the long-term performance, both of the employees and the company.

Furthermore, respondents answer that instructions on how to perform safely are existing. Respondents, say that they have lot of emergency bottoms that it can be pushed immediately if something happens, which will cause the machine to stop, instantly. The researchers of this work assume that workers in company X feel secure while performing, which does not take much of their energy to avoid any danger and thus does not reduce their work efficiency.

All the eight respondents decelerate that accidents do not happen so often. Some of them, however, claim that accidents occur as a result when the worker does not take safety precautions advised. Three of the respondents mention that when accidents happen their feeling insecure in their work. The authors assume when such feelings on insecurity appear can cause negative affect on the well-being which can cause the decrease in the performance. This process can be called "indirect" and can be seen in the figure 5.2.

Rank of the influence of the stressor "Safety" is 4 (out of 5).

This factor has an average influence on employees' performance. However, if this stress factor is incorporated with one or several of the other factors mentioned in this thesis, their combination can bring a noticeable influence on performance.

5.2.5 Noise

According to Muchinsky (1993) noise can affect the quality of work and the level of performance, especially when those tasks are concerned that require concentration. In order to keep employees performance at a desirable level, frequency of noise should not exceed 90 dB (Muchinsky, 1993, & Korman, 1977). In the production line of the company X, frequency of noise is approximately equal to 65-72 dB and the nature of noise is steady, which, according to Korman (1977) should not have a sufficient negative effect on workers' performance and workers can adapt to it to certain degree. Also, in the respondents' opinion, even though the level of noise in the production line is very high, they do not think that that it could affect their performance. The use of earplugs, mp3 players, and pause rooms help cope with noise reduce the amount of noise respondents hear to a great extent. Even though the use of earplugs does not seem to be an ideal solution to this situation (since it still causes certain level of discomfort) it still helps cope with the problem of an excessive noise quite effectively. Thus with the use of earplugs workers in the production line can perform well, and they get used to the noise since it is a constant factor. In

such a way even though the level of noise in the production line is quite high, there are some things that can be done to reduce its negative effect on workers.

Rank of the influence of the stressor “Noise” is 5 (out of 5).

According to respondents’ opinion, this factor has **the smallest** influence on their performance or almost does not have it at all. It can be partially explained by the fact that workers have an opportunity to decrease negative influence of this factor taking a number of measures listed above.

5.3 How work environment stressors affect well-being

5.3.1 Work tools

The majority of respondents (87.5% of respondents) state that inability to perform caused by factors connected with the absence or inappropriateness of the working tools causes them feeling of stress that affects their well-being in a negative way. For example, the respondent does not have the right tools, and at the same time he/she still has the production plan that should be fulfilled during his/her shift. That causes high pressure on him/her. All the respondents except one mentioned that in these cases they experience stress. The feelings mentioned by respondents when they do not have working tools are illustrated in the Figure 5.3, and they include: 45% of respondents feel frustration; 9% get irritated; 37% get angry; and 9% stay calm since they know that they cannot do anything about that situation.

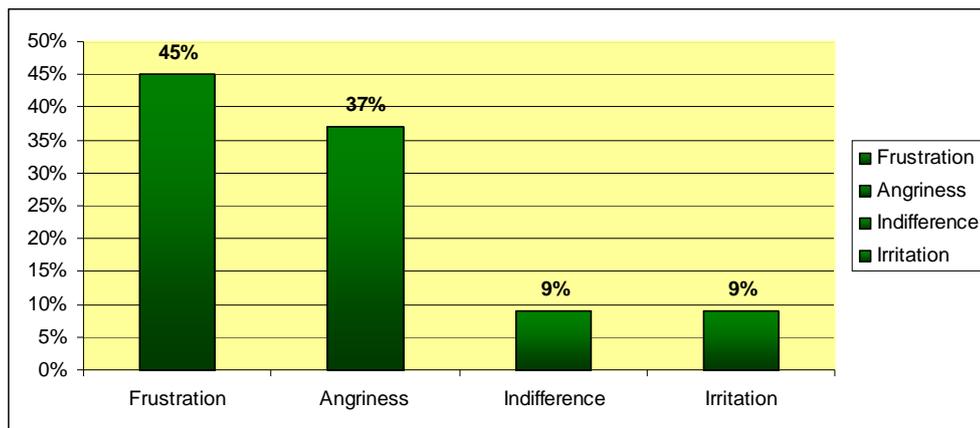


Figure 5-3 Range of feelings occurring when sufficient work tools are not provided.

Thus, when the worker (respondent) cannot perform due to a number of obstacles connected with the absence or inappropriateness of working tools it causes him/her negative feelings. According to the authors’ that research these negative feelings, they in turn, affect the level of employee’s job-related well-being by reducing it. This influence of the stressor can be shown in the figure 5.4:

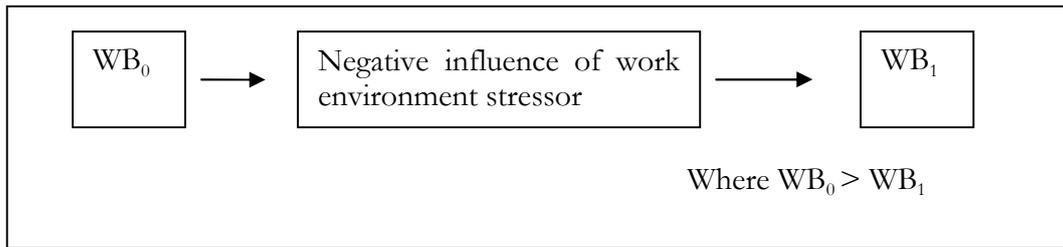


Figure 5-4 The influence of the stressor on well-being

(Where WB_0 – well-being without impact of stressor; WB_1 - well-being after negative impact of stressor)

Rank of the influence of the stressor “working tools” is 2 (out of 5).

Thus, this factor is one of the strongest in its influence on the employees’ well-being. The 1st position takes “Heat”.

5.3.2 Workload

The findings of this research show that the majority of respondents do not experience positive effects when the workload is high with the exception from two respondents. They are workers that expressed that they get triggered and are more focused with increased workload. The same respondents state that they feel good from performing both their normal and additional tasks. Opposite, most of the other respondents think that the workload varies or increases at times, and when it increases to a great extent for a long period of time, they say they feel tired and stressed. For the majority of the respondents high workload affected their job-related well-being negatively.

When the workload is too high, respondents feel tiredness, frustration, and stress. The range of feelings can be seen in the Figure 5.5.

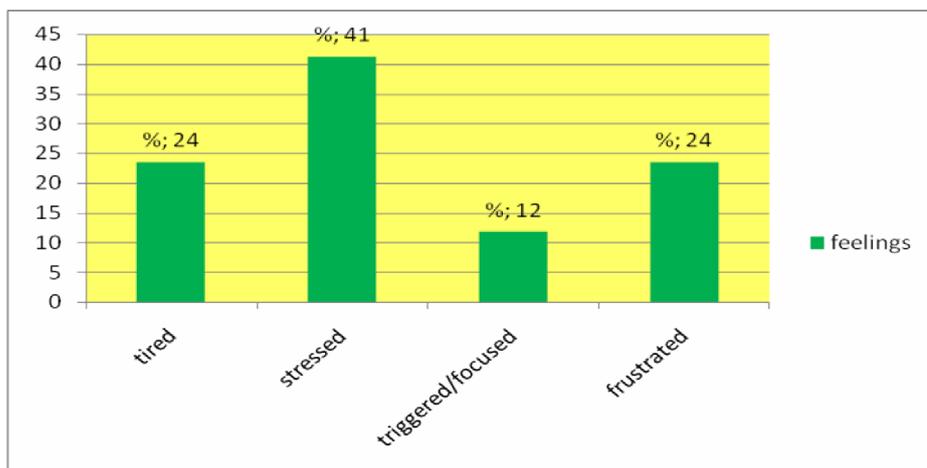


Figure 5-5 Feelings occurring when workload is perceived as too high

From the respondents’ responses it can be seen that when the workload gets too high, 41% of them feel stressed, 24% - tired, or 24% - frustrated. These feelings represent the negative spectrum of feelings that are included in the concept of well-being (see appendix 2); when these negative feelings outweigh the positive range of feelings employee feels, that reduces employee’s well-being.

The workload is not always too high but it can be too low as well. Respondent 4 says when the workload is too low, he feels bored and it affects his well-being negatively. This is something that the management should consider, since if it is aware of this fact, then in order to increase worker's performance management can give him additional tasks and search for ways of increase challenges in his work. This fact is supported by Cranwell-Ward & Abbey (2005) who state that it is important to provide employee with the sufficient pressure making the negative feeling of boredom removed, thus making the well-being and performance increase.

Thus, from the facts mentioned above, it can be seen that the employee's initial well-being is affected by the stressor (in this case, "workload"), which creates a negative/positive effect on it, reducing/increasing it from WB_0 to WB_1 (for more details, see figure 5.4)

Rank of the importance of the stressor "Workload" is 3 (out of 5).

Thus, this factor is one of the strongest in its influence on the employees' well-being. It follows after "Working tools" and "Heat".

5.3.3 Safety

All the interviews indicate that the company focuses much on the safety issues. They say that when accidents happen, they do not get much affected in a negative way, rather, they feel sorry for the person who got injured. Respondents state that they feel safe at their work place. Mostly it is because they have a special reporting system that helps make the work place as safe as possible. As a result, the employees feel comfortable and calm at their work. The safety management could be seen as one major factor that makes employees feel secure and comfortable at their work place, thus increasing their well-being.

However, if some employees ignore the well-developed instructions for how to behave and act at their workplace in order to reduce accidents, accidents could happen. One of the respondents states that accidents are more likely to happen to new people, since those who have worked in the company's production line for a long time, know how to act and what not to do not to get injured. If one employee ignores the safety precautions, he/she might not only put him/herself to risk, but others too, thus affecting their well-being negatively (Some of the respondents have mentioned such cases). The influence on the stressor "safety" can be shown in the figure 5.4.

Rank of the importance of the stressor "Safety" is 4 (out of 5).

5.3.4 Heat

There are number of negative effects of the heat on the well-being of the workers in company X. The air conditioner does not always work and it tends to be really hot in the production line in summers (the average dry-bulb temperature in the production line is app. 24-25°C).

25% of the respondents state that heat does not affect them much. However, they still would prefer if the temperature in summers would be lower. The rest of the respondents (75%) admit that heat noticeably affects their well-being. When it is too hot, they are feeling sweaty, less energetic, irritated, under pressure, and angry. These feelings raise workers' negative range of feelings (see appendix 2), thus affecting their job-related well-being in a negative way. Thus, the influence of the stressor "Heat" on well-being is similar to that described in section 5.2.1 on the Figure 5.4.

Rank of the influence of the stressor "Heat" is 1 (out of 5).

It means that this factor has the strongest influence on the employee's well-being. When it is hot in the production line, it has a substantial influence on respondents' well-being decreasing it noticeably.

5.3.5 Noise

Even though a high level of noise in the production line of the company X does not seem to affect workers' performance very much, it still has effect on their Well-Being. According to Korman (1977), noise can have a negative effect on the physiological health of working individual in terms of the physiological damage. The level of noise in the production line of the company X is substantial, and at least 50% of the respondents claim that noise annoys them and affects their hearing. From the empirical findings it can be seen that high level of noise affects workers causing negative range of feelings such as tiredness, stress, or irritation, thus creating a negative effect on their well-being. Nonetheless, almost all of the respondents admit that pause rooms, ear plugs, and mp3 players help cope with the noise efficiently. Thus, the rest of the respondents (the other 50%) believe that noise does not seem to affect their well-being at all because they can eliminate it or noticeably reduce its level.

Rank of the importance of the stressor "Noise" is 5 (out of 5).

Thus, this factor has one of the weakest influences on employees' well-being. Thus, even though its influence on the employees' well-being is not that substantial, the authors may assume that when this factor is incorporated with one or several of the other factors mentioned in this thesis, their combination can bring a noticeable influence on employee's well-being.

5.4 The suggested link between well-being and performance

The previous analysis was concerned about every stressor's influence on both well-being and performance. From the sections 5.1 and 5.2 it can be seen that job performance and well-being have a link.

Therefore with the subsequent analysis, the thesis authors attempt to suggest what kind of link there could be between well-being and job performance. In order to do that, **first**, it is needed to understand how job-related well-being can influence employees' job performance by the means of stressors (described in section 5.4.1). **Second**, how employees' job performance can affect his/her job-related well-being (section 5.4.2). Third, combine the findings into one model (section 5.4.3).

The thesis authors, should, however, point out that the subsequent analysis will be based mostly on the authors' empirical research findings acquired from the company X (from its respondents) and analysis in sections 5.1 and 5.2, therefore the possible relation between well-being and job performance is only authors' suggestion, and they do not claim that these findings can be applied to other environments and settings.

5.4.1 How Well-Being could affect Performance

In this subsection, the authors give examples from their research findings concerning how well-being could affect employee's job performance. These findings can be related to all the stressor factors researched, however, to portray the findings to the reader easier, the au-

thors will only use two stressors: “heat” (to show the negative effect on performance), and “workload” (to show the positive effect on performance).

Examples provided below are based on authors’ research findings, i.e. analysis of respondents’ answers.

- **Negative impact on performance** (example with “heat”)

In the sub-section 5.1.3, after analyzing the stressor “heat”, the authors came to conclusion that it could have an indirect influence on employee’s performance (as well as the rest of the factors researched in the thesis except “working tools”). By company’s X respondents the “Heat” is perceived negatively since in their opinion it hinders them from performance and decreases their job-related well-being. Thus, the authors of the thesis to simplify further analysis call this factor “**negative**”.

Thus, “heat” has a negative effect on the well-being of the employee because when it is hot employee feels hot and sweaty. That arouses feelings such as irritation or anger, which reduce initial level of well-being. That decreased well-being, in turn, diminishes the original level of performance. Thus the new level of performance, P_1 , is lower than the initial one - P_0 . This can be seen in the Figure 5.2 (and which was developed by the thesis authors in the section 5.1.3) and eq. 1:

$$P_0 + (-I_s^{WB_0}) = P_1 \quad (Eq.1),$$

or, alternatively,

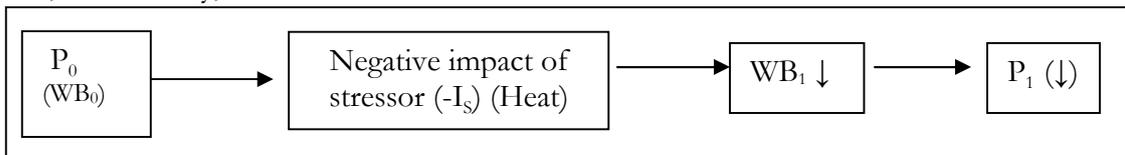


Figure 5-6 Influence of the workload on employee’s job performance

where, $P_0 > P_1$ given when $(-I_s)$ is negative.

P_0 = Performance without impact from stressor $-I_s^{WB_0}$ = Negative impact from stressor on WB_0 WB_0 = Well-Being without impact from stressor (original well-being) P_1 = Performance after negative stressor’s impact

In order to find a partial support to thesis authors’ suggestions concerning how well-being could influence job performance in a negative way, the authors offer integrate their findings into the Model of Stress (offered by Melhuish, 1978, and cited in Cranwell-Ward & Abbey, 2005), which is described in section 2.3 of the Theoretical Framework (see Figure 5.6). The authors decided to use this model to verify their findings, since this model in their opinion can be applied to different settings, including the company’s X production line workers.

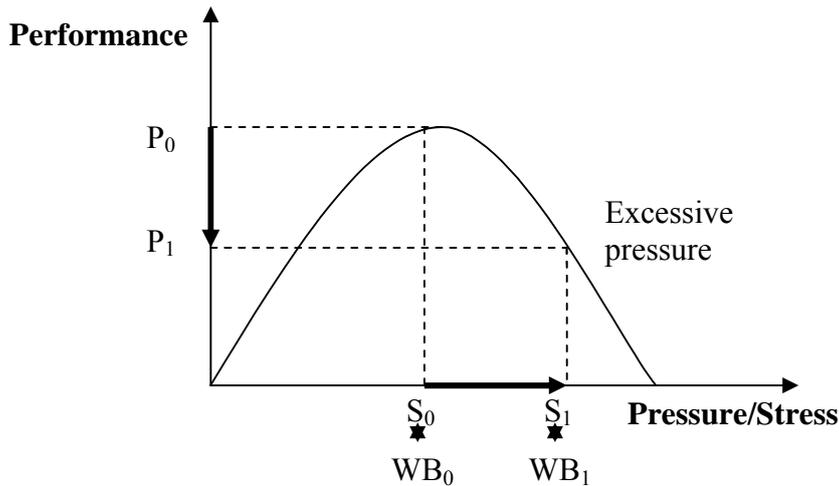


Figure 5-7 Negative impact of well-being and stress on performance

Melhuish, (1978); (Cited in Cranwell-Ward & Abbey, 2005, p. 125), self adopted model

From the Figure 5.6 can be seen that stressor “heat” (from the previous example) affects the level of stress the worker feels. When it is too hot in the production line, the worker is sweaty and angry, which increases his/her level of stress (from S_0 to S_1). These changes in the level of stress (from S_0 to S_1) decrease workers’ well-being from WB_0 to WB_1 arousing negative range of feelings. According to the model, that increased level of stress and pressure decreases worker’s performance from P_0 to P_1 .

Thus, since the Figure 5.6 shows analogical data to what the thesis authors have offered from their analysis of empirical findings, they may infer that probably their suggestions portrayed with the Figure 5.6 are true (at least for the company’s X production line workers).

- **Positive impact on performance:**

In the section 5.1.2 the authors of the thesis discovered that stressor “workload” can have both negative and positive influence on workers’ well-being, and that it could affect the performance indirectly (as the rest of the researched factors of the thesis excluding work tools).

The example of a positive impact of job-related well-being on job performance mentioned by respondents is when the workload is initially too low. When the workload is low, it affects the workers job-related well-being negatively since they feel bored (WB_0). However, after workload increases (appears additional influence of the stressor “workload”, I_s), the feeling of boredom disappears, workers (respondents) admit they start to feel “triggered” and more energetic, what increases their well-being to WB'_1 ; and that increased well-being makes them willing to perform better and leads to P'_1 . This can be illustrated by Eq.2 and Eq.3, and, again, can be derived from Figure 5.2, and illustrated below:

$$WB_0 + (I_s) = I_s^{WB_0} = WB'_1 \quad (Eq.2)$$

Where $WB_0 < WB'_1$ given that I_s is positive
 (If I_s is negative, then $WB_0 > WB_1$),
 thus

$$P_0 + (I_s^{WB_0}) = P'_1 \quad (Eq.3)$$

or, alternatively,

WB_0 = Well-Being without impact from stressor
 WB'_1 = Well-Being after positive stressor's impact
 I_s = Positive Impact from stressor

$I_s^{WB_0}$ = Positive impact from stressor on WB_0
 P'_1 = Performance after positive stressor's impact

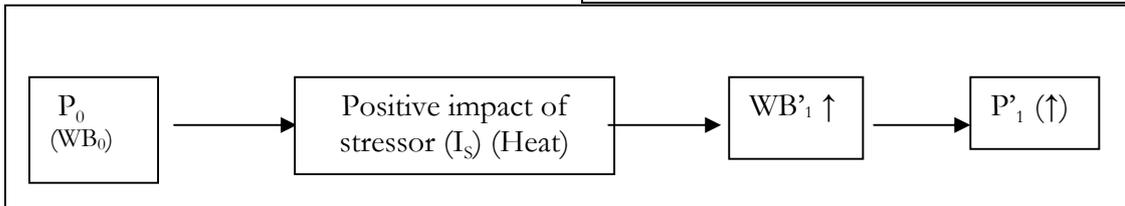


Figure 5-8 **Influence of the workload on employee's job performance**

Where $P_0 < P'_1$ given that I_s is positive.

Thus, in situations, when stressors are perceived positively it increases employee's level of well-being, and that, consequently, influences the original level of job performance positively.

In order to simplify Eq.2 and Eq.3 and make them more comprehensible to the reader, the authors suggest Eq. 4, which can conditionally portray the link between well-being and performance. Thus, when substituting $(I_s^{WB_0})$ into Eq. 3 with WB_1 we get:

- $P_0 + WB_1 = P_1$ (Eq.4) (negative effect of stressor on performance)
- $P_0 + WB'_1 = P'_1$ (positive effect of stressor on performance),

Where $WB'_1 = WB_0 + (I_s) = I_s^{WB_0}$

These equations tell that the performance of an employee (P_1) is dependent on his/her well-being. However, the well-being is dependent on the stressors existing in the work place (I_s). After well-being is influenced by work environment stressor, this new well-being affects the original level of performance (P_0) positively or negatively depending on how the stressor is perceived by the worker. That, finally, leads to a new level of performance carried out by the employee (P'_1 or P_1).

Again, in order to find a **partial** support to thesis authors' suggestions concerning how well-being could influence job performance in a positive way, the authors offer to integrate their analysis findings into the Model of Stress (offered by Melhuish, 1978, and cited in Cranwell-Ward & Abbey, 2005). See Figure 5.7.

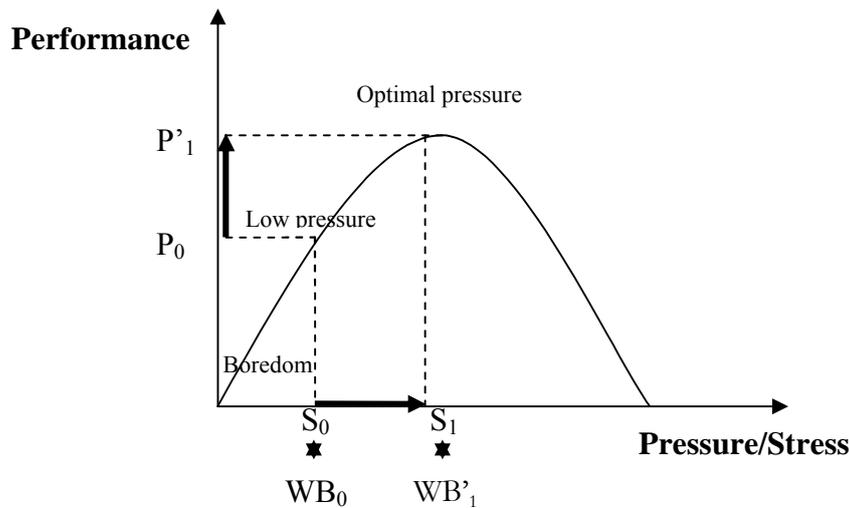


Figure 5-9 Positive impact of well-being and stress on performance

Melhuish, (1978); (Cited in Cranwell-Ward & Abbey, 2005, p. 125), self adopted model

Figure 5.7 refers to the example of a situation when there is very low workload. In this case, according to respondents' responses, they feel bored. Their level of stress is low (S_0) and the initial level of well-being is WB_0 . At that level due to the low workload, employees' performance also is also relatively low corresponding to P_0 . However, after the increase in the amount of workload, employees' feeling of boredom disappears, and they start to feel "triggered" by work. The level of stress increases (for example, till S_1), and that increases their level of well-being (from WB_0 to WB'_1) and, afterwards, also the level of performance (from P_0 to P'_1).

Thus, it can be seen that Figure 5.7 shows analogical relation to what the thesis authors suggest from their analysis of empirical findings. In such a way, they may infer that probably their suggestions portrayed with the Figure 5.2 are true (at least for the company's X production line workers).

5.4.2 How Performance could affect Well-being

The majority of respondents state that they feel satisfied when they see progress in their work. When there are no obstacles for performance connected with the absence of the work tools, workers feel comfortable at work, and their job-related well-being increases. One of the respondents states, "When I have done a good job or when I get responsibility for another task outside my duties, I feel excited and more motivated to work better."

Thus the ability to produce much and work effectively increases workers' well-being causing a wide range of positive feelings. Empirical findings have shown that, in general, respondents feel good when they perform well. This can be **partially** explained by the fact that production line workers' salary in company X is dependent on the production output delivered per 1 unit of time. Thus, when employee knows that he/she can produce and earn more, he/she feels good³ (However, from respondents' statements it can be seen that sal-

³ According to all the respondents' emphasized willingness to work **extra hours**, it was defined that the main motive for that was "money". Thus, it can be assumed that salary could be one of the key motives for a high

ary is by far **not** the only factor that influences workers' performance. Mostly that is internal feeling of satisfaction the worker gets when he/she performs well and achieves good results in work). Thus, from these research findings, the authors offer Eq.5 and Figure 5.8, which shows **positive influence of job performance on worker's well-being**:

$P_0 + \text{No obstacle} = P_1^{\text{NO}} \rightarrow \text{WB} \uparrow$ or does not change (Eq.5),

When the employee performs as he/she is required with no obstacle present, he/she gets a feeling of satisfaction and happiness which makes him/her feel good and thus positively affects their well-being. The respondents' answers have shown that in this case their well-being can be affected in two ways: increase (from WB_0 to WB'_1) or not change at all (WB_0 stays the same).

P^{NO} = Performance with no obstacle

WB_0 = Well-Being without impact from stressor = Initial well-being that was not influenced by work environment stress factor

WB'_1 = Well-Being after positive impact of the absence of stressor

It can also be seen on the Figure 5.8

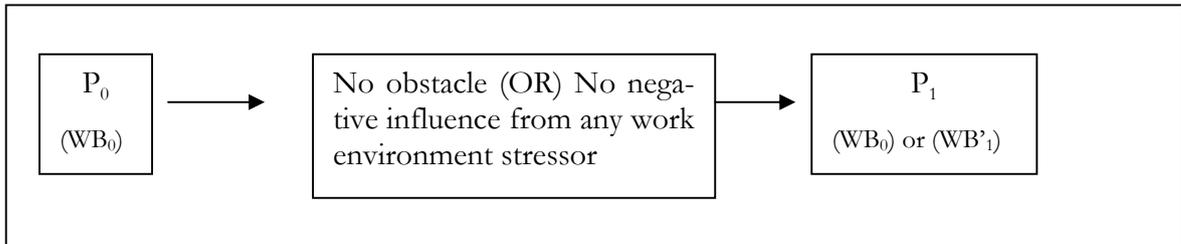


Figure 5-10 Positive influence of job performance on worker's well-being

- The example portrayed above showed the positive influence of workers' performance on their well-being. However, there can be also different situation - when **job performance affects worker's well-being negatively**.

The example pointed out by the majority of respondents was following: when there is, for example, absence of working tools, then he/she cannot perform. Worker, however, wants to perform at least because of 2 reasons (**reason 1** – because not depending on the situation in the production line certain amount of products should be produced; if employee cannot produce this work at present moment, he/she will have to do this work later but in a shorter period or time; **reason 2** – worker gets positive emotions and feelings from his/her high performance and good work results). Thus, inability to perform causes increase in the level of pressure and stress the worker feels, and that decreases his/her well-being. This can be portrayed in the Figure 5.9.

performance (because of the piece-rate payment system in the company X, where workers' salary is proportional to their produced output, and thus performance). However, some of the respondents also mentioned other factors as an important motive for their increased performance such as their satisfaction with job performance and work results as such.

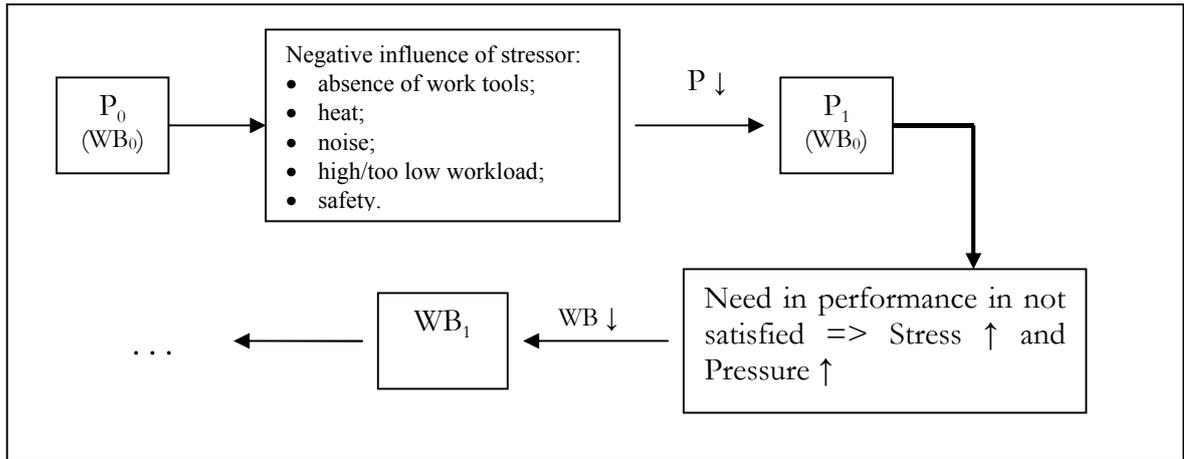


Figure 5-11 Negative influence of job performance on worker's well-being

The same can be shown by Eq. 6:

$$P_0 + \text{obstacle} = P_1 \rightarrow \text{WB} \downarrow \quad (\text{Eq. 6})$$

(P_1 = Performance after negative stressor's impact)

Referring to the respondents' example above, illustrated by Eq. 6 and Figure 5.9: when an employee is required to perform, but there is an obstacle present, he/she performs at P_1 , since he/she is not able to perform better. That decrease in performance increases worker's level of stress and pressure since the worker still should produce certain amount of product; however he/she cannot do it (This causes pressure to perform from the side of management or employee's personal motivation). That affects the worker's job-related well-being negatively decreasing it from WB_0 to WB_1 .

WB_0 = Well-Being without impact from stressor = Initial well-being
 P_0 = Performance without impact from stressor
 P_1 = Performance after negative stressor's impact
 WB_1 = Well-Being after negative impact of stressor

5.4.3 Well-being and Performance Link

Based on the respondents' answers and previous analysis in sections 5.4.2 and 5.4.1, the thesis authors tried to portray the possible relationship between well-being and job performance from the two perspectives (job-related well-being influence on job performance **and** job performance influence on job-related well-being), the thesis authors suggest incorporating those findings into one model.

In order to make the link between well-being and performance more comprehensible, the authors illustrate the relationship between well-being and performance as a "circle", where well-being and performance influence each other mutually. This model displaying the relationships between the concepts "job-related well-being" and "job performance" is conditionally called by the thesis authors "performance – well-being link" and is shown on Figures 5.10 and 5.11 and it is created from the analysis of respondents' interviews.

From the analysis of each work environment stressor in section 5.1 it can be assumed that there can be two kinds of situations when stressors influence well-being and performance.

In some cases it happens **directly**, and in some **indirectly**. Each of the cases is explained to the reader below.

- **Direct influence of stressor on performance**

Direct influence is shown on the Figure 5.10. “**Direct**” link means that the stressor has a **direct** influence on workers’ ability to perform, i.e. the absence of working tools directly creates worker’s inability to perform regardless of his/her well-being. The well-being gets influenced by inability to perform only afterwards through arousal of feelings such as anger or frustration, for instance; and that decreased well-being, in its turn, creates a negative impact on the posterior performance.

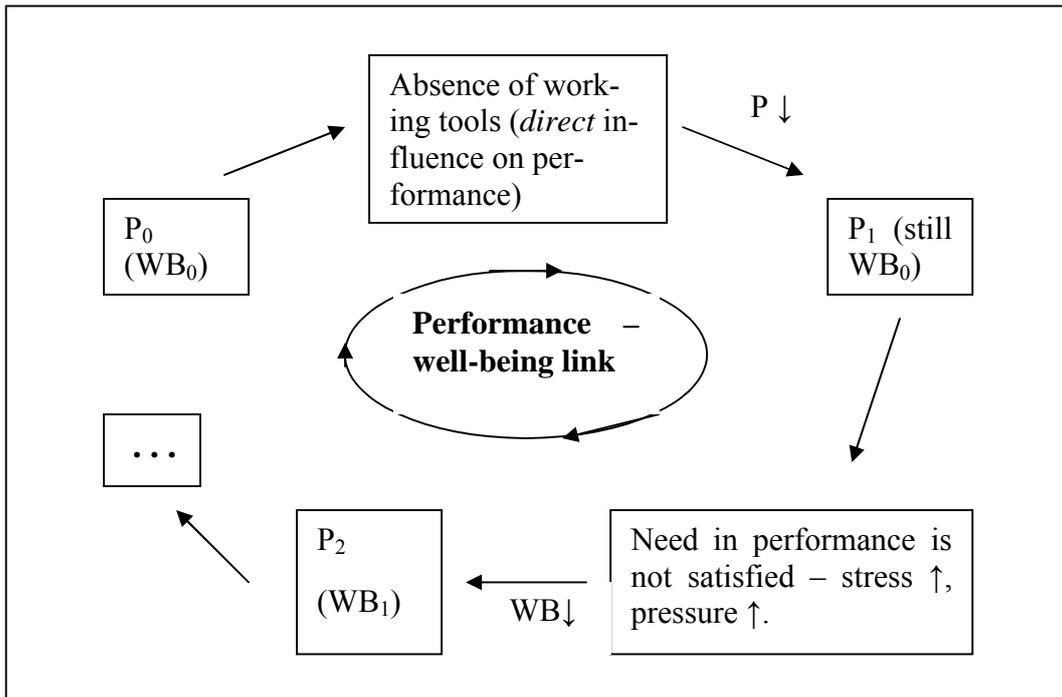


Figure 5-12 Performance – well-being link (the case of a *direct* influence)

Where P_0 = Performance without impact from stressor; WB_0 = Well-Being without impact from stressor; P_1 = Performance after negative stressor’s impact (decreased performance); WB_1 = Well-being after the negative impact from stressor; and P_2 = Performance after negative impact of well-being.

--- Absence of **working tools** creates the direct influence on performance.

- **Indirect influence of stressor on performance and well-being**

Indirect influence on performance is created by the rest of the analyzed stressors (**heat, workload, noise, and safety**). Indirect influence means that, for example, stressor “Workload” increases or decreases employee’s well-being indirectly.

To make it clearer, let’s consider the case of a negative influence of a workload – when the workload is excessive. Thus, firstly, the initial well-being (WB_0) is influenced by the stressor excessive “workload”, which creates a range of negative feelings such as tiredness or anger. Also the level of stress the employee feels increases. That makes employee feel worse than before when the workload was optimal. Thus initial level of well-being decreases from WB_0 to WB_1 , and that new well-being, WB_1 , influences performance thus decreasing if from P_0

to P_1 (see Figure 5.11). This decreased performance - P_1 creates an increase in the level of pressure and stress the worker feels, since he/she wants or needs to make a good job that would at least correspond with management requirements. That, in turn, again creates a negative impact on employee's well-being, decreasing it even further from WB_1 to WB_2 . Afterwards, the circle goes on like that negatively influencing posterior performance and well-being unless something positive happens that could influence employee's level of well-being. This situation is shown on the figure 5.11.

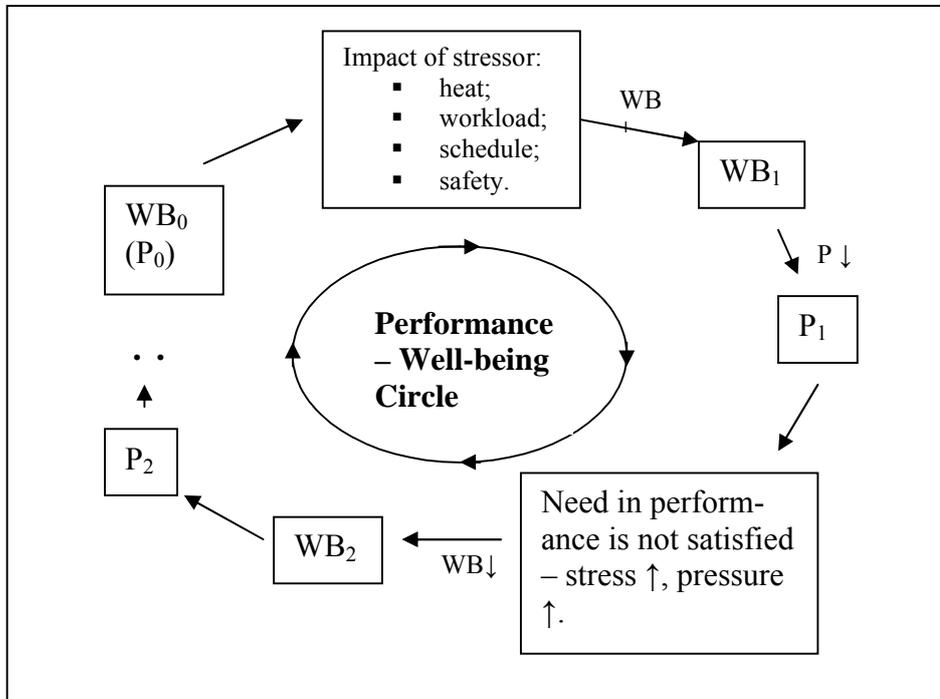


Figure 5-13 Performance - well-being link (the case of an *indirect* influence)

Acknowledgement for section 5.3.3

The authors have shown the relationship between job performance and well-being in the shape of circle to make the suggested relationship between the two concepts more comprehensible. The **rectangular with three dots** is present on the picture due to the fact that, probably the relationship between well-being and performance could be a continuous process, where well-being and performance influence each other mutually. In this case the well-being-performance link could possibly look like a spiral. However, the authors of the thesis cannot state that the relationship between well-being and job performance should look exactly like a circle, spiral or anything else since exploring the shape of the figure was not included in the purpose of the thesis. The authors admit that the relationship between well-being and performance is a very complex topic of research and will need a further research.

6 Conclusion

The purpose of this thesis was exploring and understanding the relation between job performance and well-being. It has been fulfilled by using the environmental stressors as tools, meaning that the authors have proposed the possible link between job-related well-being and job performance.

From established literature and research existing today, factors of performance are stated to be mostly influenced by a number of motivators such as rewards and appraisal, although there are ambiguous results. Through this report, it has been seen that factors influencing performance and well-being are not only motivational aspects; rather, there can be different kinds of environmental stressors, such as work tools and workload. The authors not only intended to see how each factor affected each concept separately, but also to use the stressors as tools to see the link between the two concepts.

Work tools together with heat had the strongest effect (although in slightly different order) on both performance and well-being. Also, all the stressors were expressed in such way that they were seen as obstacles in the work environment thus affecting well-being and performance negatively (except from workload that at certain times could be seen positively).

The empirical findings showed that the link between performance and well-being is provided via positive feelings arising when workers perform as required. However, when the stressor causes an obstacle to perform, the relation between well-being and performance occurs via negative feelings causing stress, which in turn cause decrease in both well-being and performance.

To portray the reader link between the two concepts, the “Performance – well-being link” model was used showing how well-being and job performance could affect each other. There were two different situations shown: direct influence and indirect influence.

When a “direct” influence occurs, the findings show that the performance decreases instantly due to the stressor, which in turn results in decreased well-being because of the existing and constant pressure to perform required from management.

In the situation of an “indirect” influence the model shows that the well-being is negatively affected by feelings of tiredness, frustration, and stress which then make the employee less willing to work, thus decreasing job performance. It could be seen that only work tools do not affect the performance indirectly via the well-being.

Even if the stressors usually are seen as negatively affecting the performance in obvious ways, they are still integrated with the well-being of the employee in a complex way, making the impact on both performance and well-being larger by going through more steps in the circle of the suggested model. What is noticeable is that when two or more factors are combined, they create negative synergies on the performance, directly and indirectly via the well-being.

Due to the fact that each worker has different characteristics, it can be assumed that there is not one way of handling the issue of increasing the performance and well-being of employees by their manager. These are rather experiences, attitudes, and feelings of the employees that shape how they act and response to the different stressors and influences, directly or indirectly.

The thesis authors suggest that there is a link between performance and well-being via those stressors. If companies aim at achieving increased performance of their employees, they should be aware that both well-being and job performance are intertwined and have both cause and effect on each other.

7 Discussion

The end discussion section of this thesis includes a discussion on the subject with the authors' personal thoughts and opinions. They discuss contributions of the thesis, limitations, the strengths and weaknesses of the research and the applicability to another setting. Finally, this section includes suggestions for further research.

7.1 Contribution

Previous studies have mainly focused on internal motivation and developed certain theories on how to make employees motivated in order to have a good level of performance. Nevertheless, according to this study it is found that work environment factors also have noticeable influence on employee's well-being and performance. Being aware of the influence of the environmental factors, managers can better realize how these factors contribute to job performance of their employees and to company as a whole. The findings of this research are, thus, of great significance for managers.

When managers know that there is a new perspective to the issue with raising the performance, they will better understand that it can be approached differently. Not only the manager should focus on rewards in different forms and expect the performance to boost, but also to reduce negative factors to create an environment which will be free of obstacles (to a possible extent).

Furthermore, from this research, it can be realized that the importance of controlling the level of pressure that occurs from the environmental work environment stressors is essential. The study shows how performance affects the well-being and how well-being affects performance. This is relevant since, when looking at the circle, it would allow the manager to see where to interfere and what measures should be taken in order to achieve the desired work results efficiently.

Moreover, the whole research is of importance because it gives good insight of seeing well-being as a link to performance which previously was not done by any other research. Awareness of the mutual link between the two concepts adds value to companies since they can increase their effectiveness in job performance and at the same time raise the well-being of their employees through maximal elimination of obstacles that are caused by environmental stressor factors.

7.2 Research Limitations and Further Research Suggestions

Most of the previous researches have focused on the concept of job satisfaction. By establishing focus on the concept of well-being, authors of the thesis managed to explore the same problem, however from another, broader perspective. After weighing research findings, they may suggest that there is, possibly, a link between performance and well-being, at least when certain stressors are present in the working environment. That, in authors' opinion, is a significant strength of their research work since they offered new insights on the

problem and showed that it deserves a further research. In this connection the authors also admit that the use of qualitative method (in particular, interviews) has justified their hopes and allowed reach their thesis goals. The authors, however, suggest conducting a further research and try to explore the same problem from the quantitative perspective. That would be the most relevant for getting more precise and reliable information concerning stressor factors' "ranking" according to the strength of their influence on performance and well-being.

Furthermore, a good recommendation for further research would be to test and supplement present research results conducting experiment and exploring how every particular factor influences well-being and performance of employee at the exact point of time. Here, the use of the performance measurement techniques would be appreciated if more precise information on this issue is needed. Furthermore, even though, the stressors chosen for the study provided sufficient ground for linking the two concepts together, the authors have discovered that there are also other environmental stressors that could act as a tie between well-being and performance, such as relations with colleagues, their general well-being not related to work and work responsibilities and researching them further would be a good idea.

The limitation of the research findings is, perhaps, the fact that this research is applicable to settings similar to those where research was conducted. By this authors assume that research findings could be only relevant to blue-collar workers, who work in a production line and to higher extent to those whose salary is dependent on their performance. Also, there is no guarantee that same findings can be applied to companies working in other industries, countries, and cultures, as well as companies having different structure of the work organization. However, this topic could be researched further to see how findings of this research would apply to those particular settings.

Authors of the thesis believe that acknowledgement of the strength and weaknesses of their research, as well as recommendations and suggestions for further research would allow interested parties to get a deeper understanding of phenomenon and obtain a more detailed and comprehensive picture of it in different environments and settings.

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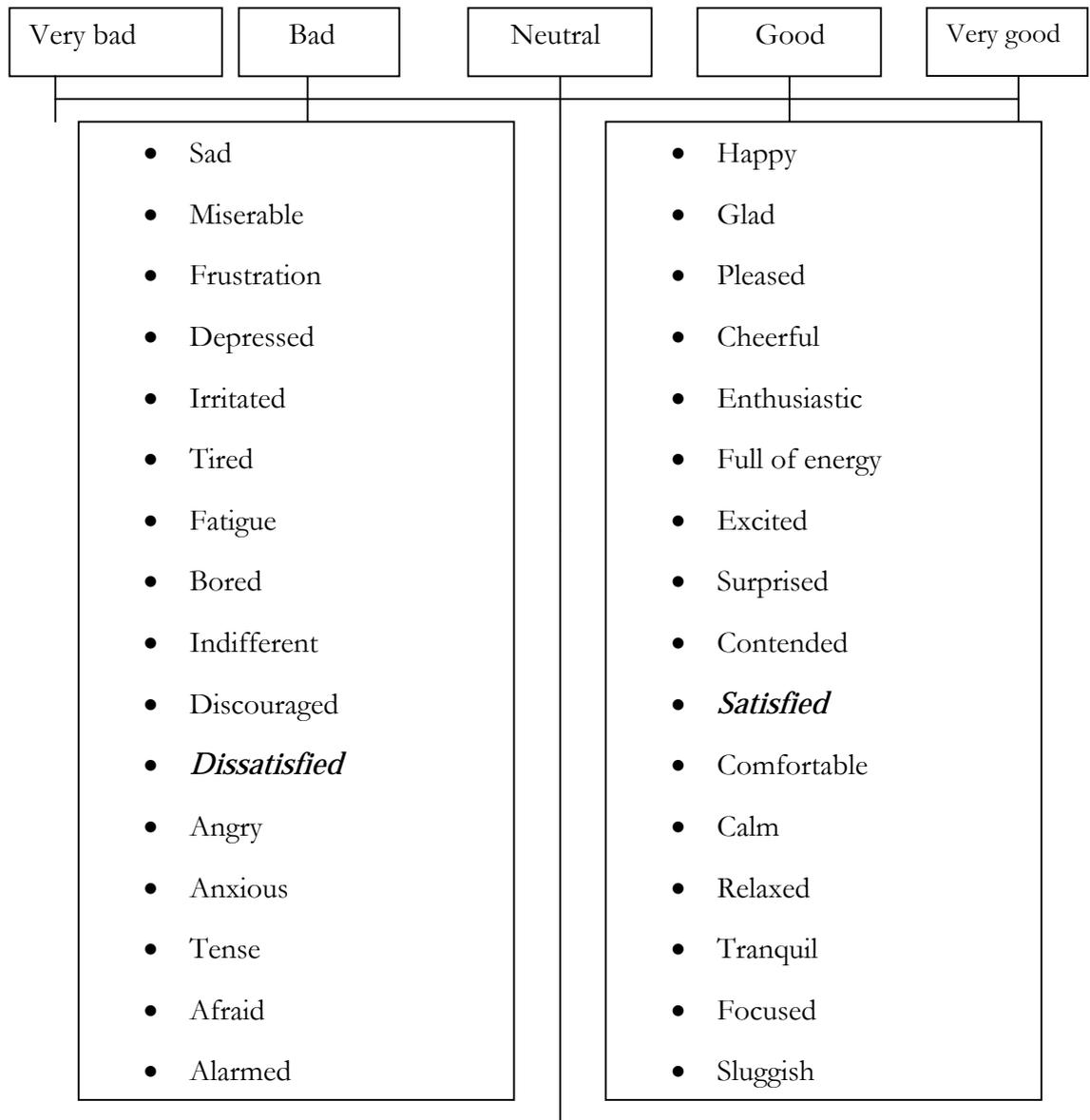
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Appendix 1

Average correlations between job satisfaction and performance (Argyle, 1989, p.11)

Average correlations between job satisfaction and performance		
	n.	av.r
A. Productivity		
▪ Brayfield and Crockett (1955)	26	+.15
▪ Iaffaldano and Muchinsky (1985)	74	+.15
▪ Petty et al (1984): Supervisors and above	11	+.31
Below supervisor	9	+.15
B. Absenteeism		
Hacket and Guion (1985)	31	-.09
McShane (1983)		-.22
C. Labour turnover		
	47	+.22

Appendix 2



STRESS

A two-dimensional view of psychological well-being. Warr, 2002, p. 2 (self-adopted)

Appendix 3

Examples of questions that was used during the interviews

Questions concerning employee's performance:

- What kind of feelings do you have when you cannot perform as you want as a cause of different kind of obstacles?
- Do you meet the demands of your work?
- If you did not do your work properly what was the reason?
- How do you feel after you have achieved and performed well (as required)?
- What conditions increase your performance?
- Does the heat affect your performance? If so, how?
- Does the noise affect your performance? If so, how?
- Are your job responsibilities and duties clear to you?
- Does your work schedule affect your performance?
- Do you have the adequate (proper) tools to perform?
- Have you ever been in a situation where you could not perform because of not having the right tools? If so, how did this affect your performance?
- How would you explain your workload? (High/low)
- Could a change in your workload a have an effect on your performance?

Questions concerning employee's Well-Being:

- Do you feel comfortable at you work? What do you think of your working conditions?
- Do you always feel safe at your work? If not why?
- Do accidents happen often?
- If yes, what kinds of accidents? How does this make you feel?
- Is the work environment designed to reduce accidents?
- If you have the possibility to change something in the work environment, would you change something and what would it be?
- When you have too much workload, what feelings do you have?
- Could a change in your workload a have an effect on your Well-being?
- Do you work extra hours? Is this optional?
- If you have to work extra hours how does that make you feel?
- Is the work repetitive? If so how does it affect you?⁴
- Could you give an example of work situation when you have felt stress?
- Is the work environment designed to reduce stress in some way? If so, how?
- Could you give an example of work situation when you have felt frustration?
- Could you give an example of work situation when you have felt tired?
- Could you give an example of work situation when you have felt enthusiastic (pleased)?
- Could give an example of work situation when you have felt energetic?

⁴ When conducting the information from the interviews, both for the empirical and analysis part, this question no longer showed any relevance aligned with our purpose, and hence is not included in those parts.

Questions concerning the stressors effect on employee's Performance:⁵

- How much does each stressor affect your performance?
(Choose between 1-5 where 1 has little effect and 5 has a large effect)
 - 1) Work tools (absence of working tools)
 - 2) Workload (high workload)
 - 3) Safety (when you perceive your work not to be that safe and secure)
 - 4) Noise
 - 5) Heat
- Rank the following stressors in accordance to how they affect your Performance, by the numbers 1-5 (Where 1 is given to the stressor that affects your performance the most, and 5 is given to the stressors that affects your performance the least)
 - 1) Work tools (absence of working tools)
 - 2) Workload (high workload.
 - 3) Safety (when you perceive your work not to be that safe and secure)
 - 4) Noise
 - 5) Heat

Questions concerning the stressors effect on employee's Well-Being:

- How much does each stressor affect your Well-Being?
(Choose between 1-5 where a 1 has little effect and a 5 has a large effect)
 - 1) Work tools (absence of working tools)
 - 2) Workload (high workload.
 - 3) Safety (when you perceive your work not to be that safe and secure)
 - 4) Noise
 - 5) Heat
- Rank the following stressors in accordance to how they affect your Well-Being, by the numbers 1 - 5 (Where 1 is given to the stressor that affects your Well-Being the most, and 5 is given to the stressors that affects your Well-Being the least)
 - 1) Work tools (absence of working tools)
 - 2) Workload (high workload.
 - 3) Safety (when you perceive your work not to be that safe and secure)
 - 4) Noise
 - 5) Heat

⁵ These questions have more quantitative features than qualitative, which is not the approach chosen in this thesis. The questions were however only used as additional ones, after the interview was conducted. This was done to see if some trends and patterns could be discovered on whether one of the stressors had more impact on the employee than one of the other stressors.