



INDUSTRI
ARBETSGIVARNA

COMPETITIVE ADVANTAGE THROUGH VISION ZERO

– primary industry's investments in
improving the work environment, health and safety



Foreword

This review of current knowledge under the heading 'Competitive advantage through Vision Zero' aims to make clear the link between primary industry's investments in improving the work environment, health and safety and increased competitiveness.

In this project, which was financed by Industriarbetsgivarna, we have brought together not only the existing research, legislation and regulations, but also reports and industry knowledge. We have also interviewed researchers as well as key individuals from a number of industrial companies, all of which carry out systematic preventive work environment management, on their views as to how investments in improving the work environment, health and safety are linked to productivity and competitiveness.

The intention is not to produce a comprehensive report of all the existing well-conducted studies, but rather the primary aim is to provide a source of inspiration and know-how support in line with Industriarbetsgivarna's efforts towards Vision Zero for accidents and health issues within industry. In addition to reporting on various classic economic perspectives of occupational health, our ambition – starting from the latest research in the area – is to reveal both the costs and the benefits that are not usually visible. The report authors also wish to emphasise that any interpretations and views presented in this review of current knowledge are the authors' own and not those of Industriarbetsgivarna.

This report takes as its starting point Industriarbetsgivarna's Vision Zero and its three main pillars: leadership, participation and competence. We will shortly describe how working life and the concept of the work environment have developed, after which we will focus on the costs and benefits associated with the work environment as well as health and safety in businesses in general and in industrial companies in particular. In the concluding discussion we link these pillars with the concept of social capital. Social capital can be described as an approach and a culture that is cultivated by strengthening relationships in the workplace, both between managers and employees within the individual department and throughout the organisation. Social capital is a central factor that is associated with many other key factors of direct significance for health, safety, operations and efficiency.

We would like to express our gratitude to everyone who gave up their time to be interviewed and who so readily shared their experience and explained their perspectives on work environment management and its links with health, safety, profitability, productivity and competitiveness. Without these interviews we would not have been able to bring to life the industrial companies' efforts in respect of the work environment and safety culture.

We would like to thank Åsa Dahlfors for acting as project manager. Our thanks also go to the project's reference group, which provided inspiration as well as valuable input in all phases of the project and helped out with contacting the key individuals that we interviewed.

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Industriarbetsgivarna's Vision Zero

Industriarbetsgivarna has adopted a Vision Zero in respect of health issues and accidents. We see Vision Zero as being at the heart of a good safety culture in our member companies and believe it also brings great business advantages and enhances competitiveness.

Vision Zero is based on the conviction that work-related health issues, fatal accidents and other accidents at work can be prevented. Everyone in a workplace has a responsibility for safety and for the workplace climate. It is the management that has the ultimate responsibility for achieving Vision Zero. The advantages of this vision are obvious: it protects the companies' principal asset – their employees – from injuries and health issues. And with healthy employees, the companies become more efficient, productive and profitable. Vision Zero is fundamentally an ethical approach. Industriarbetsgivarna sees a Vision Zero as part of a work environment strategy for safe and sustainable workplaces. For successful and competitive companies, Vision Zero is as obvious as having world-leading products.

At Sandvik we have a well-established physical safety culture – it's something we've been working on successfully for many years. Now we're also integrating an organisational and social safety culture into this work. It's very much about engaging employees by listening to them, showing that everyone's views are valued and allowing everyone to have a voice. What's key to us at Sandvik is that this is a journey we are making together.

Accidents are not just tragic, but also incredibly expensive – partly because they involve many people being taken away from production. For each accident that we can avoid we not only avert injuries and adverse effects on the brand, but of course we also free up a huge amount of time and resources that we can put into production and preventive work environment management. It's a win-win situation.

– **Mona Davik, Health and Safety Coordinator,
Sandvik Materials Technology, Gävle**

THE THREE MAIN PILLARS OF VISION ZERO

Industriarbetsgivarna's Vision Zero is supported by three main pillars that form the foundation of its member companies' safety culture:

Leadership

How management acts is decisive for achieving Vision Zero. Alongside setting a good example in all contexts, it is essential that management establishes the rules that apply in the workplace and ensures that these rules are followed. It is also important to provide a safety culture where open communication between management and employees is seen as valuable. Good leadership is distinguished by everyone who works in a workplace being encouraged by various means to prevent and report any safety deficits. Management needs to involve and motivate employees as regards safety as well as the organisational and social perspectives.

Without effective leadership the work environment deteriorates, which adversely affects production – and then you don't earn any money. Back in the day, these aims were probably seen more as diametric opposites – 'if we keep focusing on the work environment then we won't get around to producing anything'. Today, however, we have no doubt that leadership, the work environment, production and profitability are all linked and we see very clear correlations between these in our measurements and reports.

– Per Renman, Group Safety Director, Boliden

Participation

In a safe workplace everyone shares the responsibility for their own safety and that of everyone else. This means that everyone works to improve safety as a natural part of their job.

It needs to be clear that this is an individual responsibility; that everyone has a responsibility and must act accordingly. A good safety culture – which of course is of the utmost importance when working to create completely safe workplaces – is based on both leadership and individual responsibility.

Competence

Inadequate training and skills can be a cause of accidents and near-misses. Machinery today is often powerful and technically complex, making great demands of those who handle it. Various interventions to increase knowledge and develop skills are therefore needed. In addition, high requirements must be set when recruiting both externally and internally, and the workers recruited must fulfil these requirements. It is crucial that the companies are able to recruit workers with the right skills, and that also applies from a work environment point of view. Regular training must also be carried out at the companies in aspects such as safety and the organisational and social work environment.

During our Safety First initiatives we've seen clearly that when management perseveres with its efforts over time, it bears fruit. You have to practise what you preach and show that the projects together form part of a strategic continual skills development process that in fact never ends. One of the cornerstones of this is that we do not see training and skills development as an expense. For us it's a long-term investment that creates a better functioning company and makes us more profitable. "Keep it up!" is one of our key mottos.

- Mona Davik, Health and Safety Coordinator,
Sandvik Materials Technology, Gävle

As working life has changed, so the concept of the work environment has developed

Society and working life have undoubtedly changed radically in a short space of time. In just over a hundred years we have gone from the breakthrough of modern industry, characterised by manual and physically demanding work, to today's highly globalised, digitalised and increasingly automated working world. Things are developing rapidly, affecting the entire labour market – industry included. Some jobs and tasks are disappearing, while new jobs are being created and existing jobs are getting new content. These changes in technology, business structures and team composition are affecting the entire work environment.

The new working world is creating many opportunities, but at the same time demands new skills of individuals. It is only just over 20 years since the internet became part of our daily lives, and not even 10 years since mobile phones started handling emails. It's enough to make your head spin: in an extremely short time, technology that we now take for granted has changed many people's daily working lives fundamentally. The new working world is seeing a shift from manual and physically demanding work to occupations and tasks that are in the main cognitively, socially and emotionally demanding. Although some elements and tasks will continue to be performed manually, they still call for an ability to manage complex systems, analyse and deal with errors and risk, and maintain focus. On top of this, people need to collaborate and communicate with colleagues who may be in other countries and even on different continents.

Globalisation pressures and demographic trends affect the chances of the Nordics to be prosperous and indirectly threaten the welfare states as we know them.

- Working Environment and Productivity,
Nordic Council of Ministers, 2014

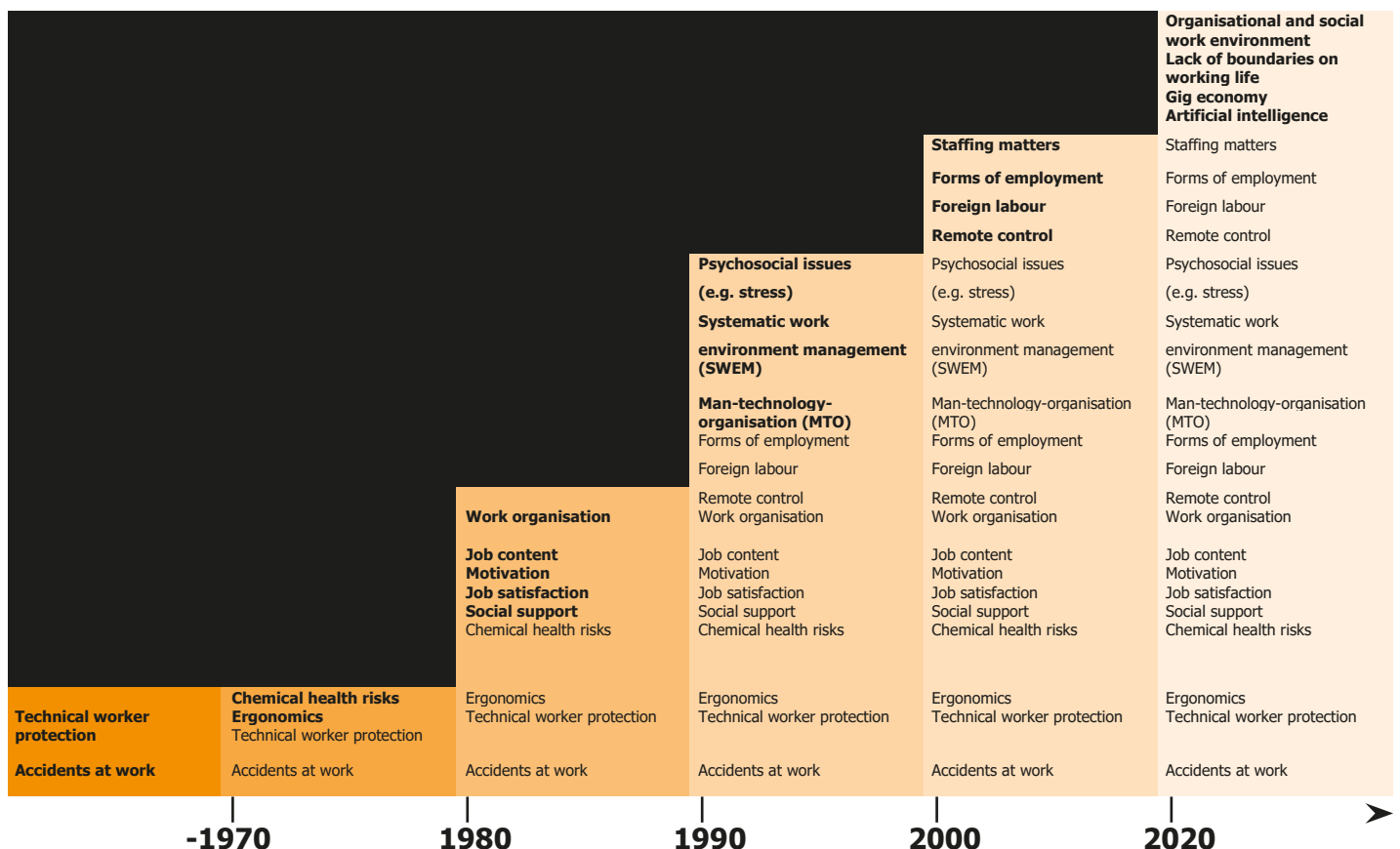


Figure 1. Changes in aspects considered part of the work environment.

The consequence of this is that the labour market is characterised by demand on both the (white-collar) salaried employee and (blue-collar) collective side for the best skills within each particular area combined with the cognitive, social and emotional resources that are required for a variable working life. This makes each organisation increasingly dependent on the individual's key skills and attributes, and they must therefore help employees to thrive, develop and be able to produce at a high level in order not to lose out to the competition. The term employer branding is becoming more key than previously.

With these radical changes in the labour market comes also, of course, a different focus to work environment issues. The concept of the work environment has continually expanded as working life has developed (see Figure 1), hand in hand with an improved level of research and knowledge: from the focus in the 1960s on the physical work environment and accidents at work to the early 1980s' focus on the psychosocial work environment. Systematic work environment management (often known as SWEM) forms a basis for all work environment interventions in Sweden. It involves working systematically on the physical, organisational and social work environment alike – everything from hard hats to unhealthy workloads.

To sum up, we can say that the term work environment has developed and gradually expanded. In the 1960s it was about preventing accidents and in the 1970s about preventing health issues, while the 1980s saw the concept of the work environment being integrated with work performance. In recent decades, driven by digitalisation and new ways of working, it has been about the interface between work and personal life and the balance between them (work-life balance). Working from home has become more common and increased further in 2020 due to the coronavirus pandemic. The work environment in remote working has thereby become more relevant.

"IT WASN'T BETTER BEFORE"

In recent decades a clear reduction in the number of fatal accidents can be seen in the "Manufacturing" sector (Arbetsmiljöverket, 2019b). Although the majority of the accidents at work and occupational injuries reported in industry are of a physical nature, occupational diseases as a result of shortcomings in the organisational and social work environment are a growing problem.

Having to wear safety goggles, a hi-vis jacket and a hard hat is absolutely the right specific guidance – but it's not enough on its own. That's where the organisational and social work environment comes in. An employee who feels seen and secure and has rewarding work will be more engaged and will ask when they need help. Being able to trust your supervisor and knowing that you can go to them and talk about anything – however big or small. Engagement must come from both above and below. It's all related.

**- Jennifer Andersson,
Head of Production Section, Boliden Aitik**

The report *Arbetsorsakade besvär 2018* [Occupational complaints 2018] from the Swedish Work Environment Authority generally indicates relatively substantial shortcomings in the organisational and social work environment in Swedish working life (Arbetsmiljöverket, 2018). One of the report's conclusions is that preventive work needs to be tackled, since there is often a lack of systematic investigation and preventive measures in respect of the organisational and social work environment. The report also finds that although to a large extent people are good at preventing and managing physical work environment risks, these risks are still present in industry in connection with an deficits in the organisational and social work environment. One example of this is that stressed employees run a greater risk of suffering occupational injuries and accidents.

For this reason, in later sections of this knowledge review we have decided to place some emphasis on the occupational health economic arguments associated with the organisational and social work environment – without thereby neglecting the physical work environment's links with productivity and profitability.

INDUSTRY AS A BENCHMARK FOR WORK ENVIRONMENT MANAGEMENT

Within industry, work to increase safety and create a good work environment has been going on for decades. It is a sector made up of many companies that have well-functioning systematic work environment management, where people have long worked to develop and improve the work environment, health and the safety culture. Industry has thereby created not only safer jobs, but also more competitive companies. Cooperation between the parties in industry is well developed, with great commitment on both sides to reducing both accidents and physical, organisational and social work environment risks – so it is no coincidence that work environment management in industry has been described as "the cradle of worker protection" (Lundh & Gunnarsson, 1987). As a result, industry's systematic work environment management is often used as a benchmark for other sectors of Swedish working life. Work environment management is a process of continual improvement. To hold their own in the face of international competition, we believe that Swedish industrial companies must continue to develop their work environment management and highlight both the costs and the benefits, as we describe in the coming sections.

Economic consequences of failures in the work environment, health and safety

Failures in respect of the work environment and safety can lead to work-related health issues and accidents which have negative consequences for the individual and extensive costs for the company. The welfare and development of the whole of society is also affected. The International Labour Office has estimated that around 4 percent of global annual GDP is lost as a result of work-related health issues and accidents at work (International Labour Office, 2012). According to the same report, the employer's costs for each work-related health issue or accident are estimated at between SEK 15,300 and SEK 108,000.

Work environment failures can have serious consequences in the form of work-related accidents, mental health issues and repetitive strain injuries, with negative consequences for the individual. They also involve extensive costs for the companies, such as sickness absence (short-term and long-term), employee turnover and lost productivity.

In addition, the welfare and development of the whole of society is affected. The International Labour Office has estimated that around 4 percent of global annual GDP is lost as a result of work-related health issues and accidents at work (International Labour Office, 2012).

WORK-RELATED ACCIDENTS

Work-related near-misses and accidents have fortunately reduced substantially in recent decades (Sjögren Lindquist & Wadesjö, 2012). In 2019 around 34,700 occupational accidents resulting in sickness absence (lost time accidents) were reported. Men are affected to a greater extent than women, and particularly younger men. In 2019 a total of 7.7 occupational accidents were reported per 1,000 employed men, while the corresponding figure per 1,000 employed women was 6.3. The sectors with the most injuries are within mining and minerals extraction, manufacturing industry, water supply and waste management, and in transport and warehousing (Arbetsmiljöverket, 2019).

Incidents, near-misses and accidents in the workplace do not just have serious consequences for those affected and their relatives, colleagues and managers, but also involve extensive costs for the company. In the EU alone the total annual cost of workplace accidents is estimated at EUR 476 billion, according to figures from the European Agency for Safety and Health at Work.

Most of the costs arising from occupational injuries are of two types, the largest consisting of the lost productivity that results from employees being unable to work for a shorter or longer period or no longer having the same productivity as before the occupational injury. When an occupational accident occurs, studies suggest that the lost productivity is roughly two thirds of the total cost (Dorman, 2000; Stewart et al., 2003). The costs making up the cost of lost productivity, to mention just a few, are those associated with production downtime and any shutdown of the workplace in conjunction with:

- investigation;
- repair and replacement of machinery and equipment;
- fines/damages;
- recruitment and training of new employees with reduced productivity; and
- anxiety and less motivation among other employees.

The second element consists of the costs for sickness absence, medical treatment and rehabilitation. According to a compilation of the costs of public healthcare for treatment and rehabilitation in the case of work-related accidents or injuries, the costs per case amount to on average SEK 63,501 for men and SEK 45,148 for women (Sjögren Lindquist & Wadesjö, 2012).

MENTAL HEALTH ISSUES

Mental health issues are a growing problem for employers, individuals and society alike. For some years mental health issues have been the most common reason for being on sick leave in Sweden, accounting for 50 percent of the costs of all sickness absence (Försäkringskassan, 2019). The total social cost of mental health issues in Sweden was calculated in 2019 to amount to SEK 64 billion (Försäkringskassan, 2019; Skandia, 2019), which is SEK 10 billion more than the entire defence and preparedness budget for that year.

Extensive research indicates a link between factors in the organisational and social work environment and the risk of mental health issues (SBU, 2013, 2014). The factors highlighted include high work demands and little influence, little support from colleagues or supervisor, unfairness, imbalance between effort and reward, an inadequate social climate, the work being perceived as emotionally demanding, unclear roles, bullying, long working hours and conflict.

Deficits in the organisational and social work environment are associated with poorer performance among employees and can lead to productivity losses of up to 42 percent, which corresponds to around 16 hours in a working week (Myndigheten för arbetsmiljökunskap, 2019a).

It is not uncommon for failures in the organisational and social work environment to result in work-related stress, which also has negative economic consequences for the organisation – in the form of, among other things, lost productivity (Myndigheten för arbetsmiljökunskap, 2019a). The extent of the lost productivity varies, but those who experience a high level of work-related stress have a loss of at least 9 percent (measured as self-assessed lost productivity as well as the actual loss caused by sickness absence). In most studies, however, the lost productivity has proved to be considerably higher than that, which makes 9 percent a minimum level (Myndigheten för arbetsmiljökunskap, 2019a). In addition to consequences for employee productivity, problems within these areas can also increase the risk of future health issues and also give employers a poor reputation (Avonova Jobbhälsöindex, 2019; Myndigheten för arbetsmiljökunskap, 2019a).

One of the greatest challenges by far in the area of the work environment is the issue of 'work-life balance'. Workloads that cause stress-related health issues have been a great challenge to overcome for many years, and still are. That is true not just of our member companies, but of workplaces and society in general.

- Åsa Dahlfors,
Senior Advisor Health & Safety,
The Swedish Association of Industrial Employers

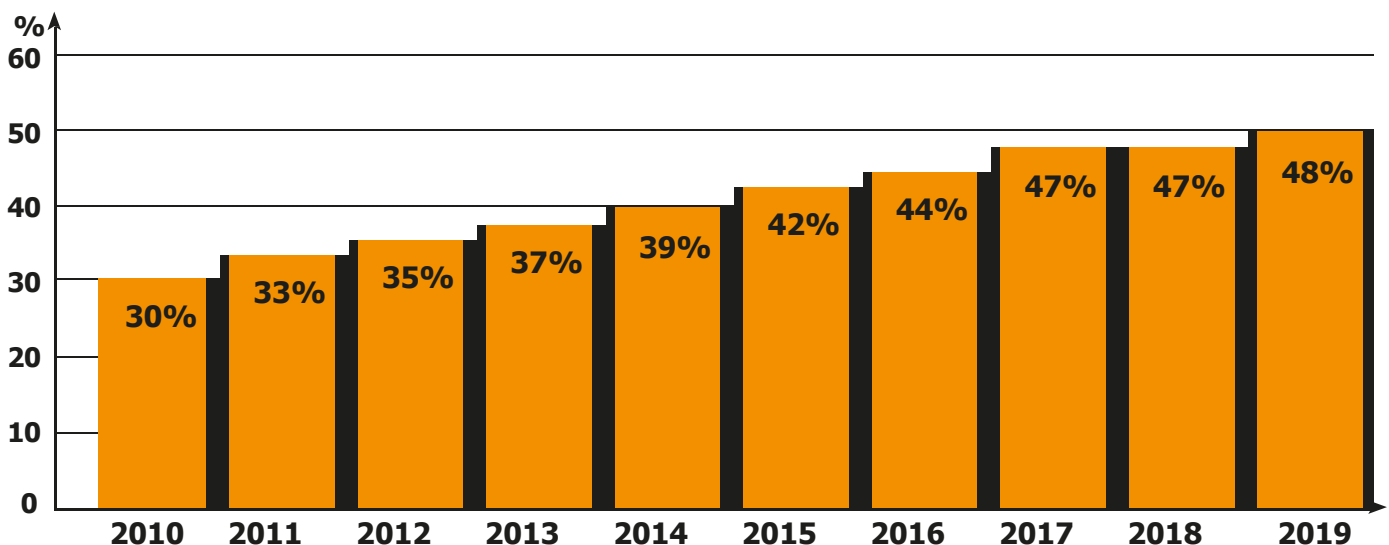


Figure 2. Percentage of sick leave caused by mental health issues 2010–2019 (according to Försäkringskassan and Skandia).

REPETITIVE STRAIN INJURIES

Along with mental health issues, repetitive strain injuries and problems involving musculoskeletal pain – particularly back complaints – are one of the main reasons for sickness absence and functional impairment in Sweden and the rest of the western world. However, this varies by sector, gender and age group. Municipalities and county councils have the highest rates of sickness absence, and this is dominated by mental health issues followed by musculoskeletal complaints. In the private sector, for both men and women, musculoskeletal complaints dominate followed by mental health issues, with back and neck problems accounting for the most cases. Musculoskeletal disorders, particularly neck and back complaints, are the most common type of occupational disease in women and the fourth most common in men.

A recently completed cost analysis shows that the total cost to society for back complaints is around SEK 44 billion per year, taking into account both direct costs (costs of interventions, medical care, drugs etc.) and indirect costs (lost productivity due to sickness absence and sickness presenteeism). This represents a burden on society, employers and employees alike. Studies have also found that salary and career development can be negatively impacted if an employee suffers from long-lasting back problems (Mathew et al., 2013).

Research shows that the big cost to employers is not sickness absence, treatment, rehabilitation or other measures to prevent disabling back complaints, but rather the costs of the lost productivity that arises if the employee is at work despite a complaint or illness that results in reduced performance. This is known as sickness presenteeism.

Sickness presenteeism is common in the case of back complaints and results in a reduction in work performance. Naturally it costs less for both the individual and the employer if the employee is at work instead of being entirely absent due to sickness, at least in the case of short-term sickness absence. However, sickness presenteeism involves lost productivity that most employers do not think about. Lost productivity from sickness presenteeism needs to be investigated in order to analyse the actual costs of sickness. The costs can then be used to assess the value of investing in measures to prevent back complaints that impair function.

SICKNESS ABSENCE

Sickness absence is a broader concept than sick leave and also includes briefer cases of sickness that result in someone being away from work for one day or a couple of days. It is only after 14 days that an employee on sick leave receives sickness benefit from Försäkringskassan. Prior to that, the employer pays sick pay. According to a calculation from Försäkringskassan (Ersättningskollen.se), the employer's cost for sickness absence as a result of health issues or injury is around SEK 11,000 in the first 14 days. This cost has been calculated based on the median pay in Sweden, which in 2019 was SEK 31,700. In total, employers paid out SEK 23.7 billion in sick pay costs in 2018 (Ekonomifakta – Sjukfrånvaro, 2020). That is equal to almost half of Sweden's defence costs for a year. After day 15 Försäkringskassan and any insurance pay sick pay to the employee.

Sickness absence figures for Sweden have varied greatly over time. In 2019 sickness absence in businesses averaged 3.9 percent, made up of 5.4 percent for (blue-collar) collective employees and 2.1 percent for (white-collar) salaried employees (Ekonomifakta – Sjukfrånvaro, 2020); **see Figure 3.**

There is a strong link between sickness absence and failures in the work environment and safety, and reduced sickness absence is often an argument for making an investment to improve the work environment (Lagerström et al., 2008). This applies not least since the cost of sickness absence is relatively easy to calculate compared with estimates and calculations of increases in productivity and quality. See the example above regarding the calculation for short-term absence. With certain simplifications it is even possible to calculate standard amounts that can be used in economic costings.

We find it difficult to measure a number of things that are nonetheless hugely important. Sickness absence, for example, is easy to measure, as is the number of accidents, and we tend to measure whatever is easy to measure. That also governs the way we think and act.

**- Anders Johrén,
Economist and Researcher, Nyckeltalsinstitutet**

Short-term sickness absence

Ten percent of monthly pay is a standard cost for a day of short-term sickness absence that can be used in most contexts (Lagerström et al., 2008). This standard figure is probably on the low side, because the resulting disruption to production is generally considerably greater. The standard amount is based on an assumption that the employee generates significant value corresponding to at least the costs of their salary, annual leave, employer contributions and a 50 percent mark-up for overheads (premises, equipment etc.). The calculation also assumes that the business does not have surplus staff or dips in workload that could mean that the sickness absence does not disrupt production.

Long-term sickness absence

Starting from the 15th day of sick leave, Försäkringskassan bears the bulk of the cost for the employee. In the case of long-term sickness absence it is conceivable that the company will bring in a substitute who takes over the duties of the person on long-term sick leave. This means that the costs of premises etc. are not included in the calculation of the company's costs for the long-term sickness absence. On the other hand, there are additional costs for any recruitment and initial training of the substitute, for possibly lower initial productivity and any rehabilitation costs for the person on long-term sick leave. In a calculation by Johanson och Johrén (2007) the starting cost for a six-month period of sick leave was estimated at SEK 100,000.

EMPLOYEE TURNOVER

The work environment and employees' wellbeing at work affect employees' willingness to change jobs. Research shows that low wellbeing at work correlates with intensified jobseeking behaviour (Böckerman et al., 2012). Moreover, a low level of wellbeing at work is just as good a predictor of changing jobs as dissatisfaction with pay (Tansel & Gazioğlu, 2014). Failures in the work environment can therefore be a cause of employees changing jobs, which gives rise to costs for ending the employment of the person who leaves, recruiting a new employee, and the induction and initial training of the new employee. The total cost of replacing one employee naturally depends on how much time and resources are required to replace the person in question. In a calculation by Johanson and Johrén (2007) at a large state-owned company the average cost of replacing an employee was estimated at just over SEK 900,000.

% Percentage of regular working hours

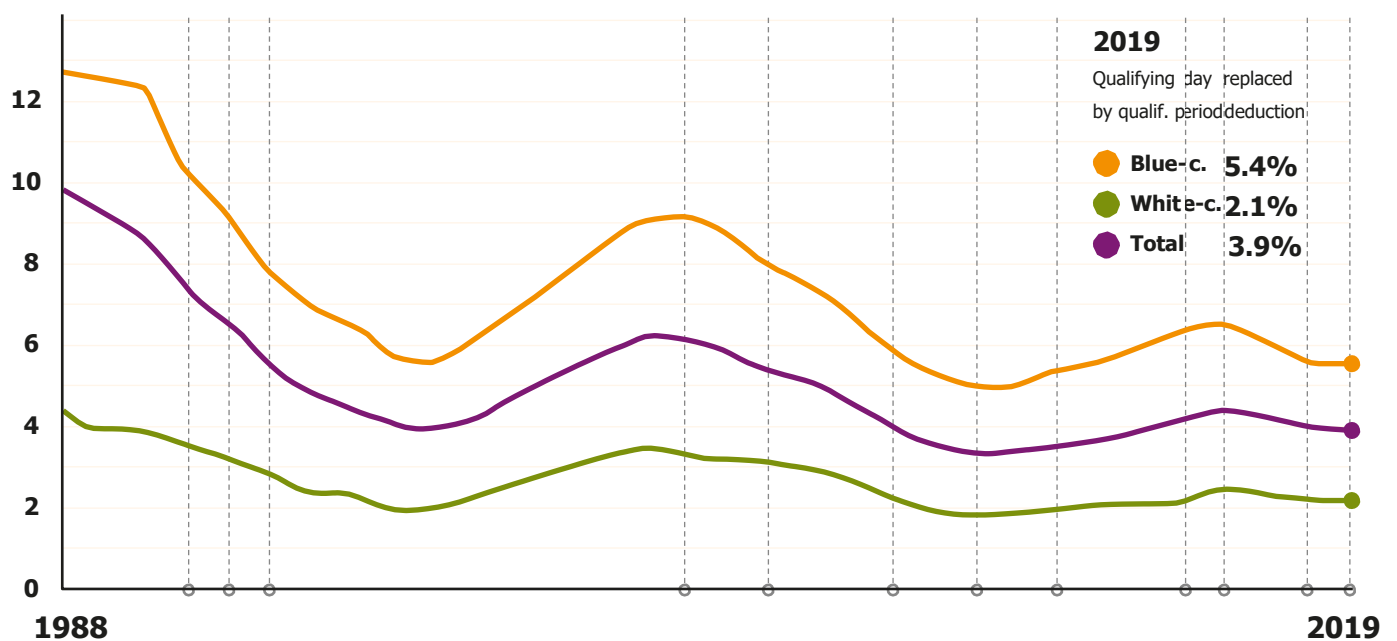


Figure 3. Sickness absence. The information above relates to blue-collar workers and white-collar salaried employees in the private sector. It is based on the Confederation of Swedish Enterprise's time use statistics, which cover a selection of around 500 workplaces, 50 companies and 70,000 employees. The time use statistics stopped being produced in 2018; from 2019 onwards estimates are based on official statistics. Source: FOLA 2020, Svenskt Näringsliv (Confederation of Swedish Enterprise).

LOST PRODUCTIVITY

That sickness absence due to a poor work environment or work-related injuries or accidents can disrupt production may seem obvious; but shortcomings in the work environment also affect the input of those still at work. Work environment problems can lead to employees feeling that they lose a third – or even more – of their performance capacity at work (Lohela-Karlsson et al., 2015). Lost productivity is defined as the difference between an employee’s normal productivity and their productivity when affected by health issues or work environment problems. As the figure below illustrates, it is not uncommon for work environment problems – whether physical, organisational or social – to result in sickness presenteeism. Sickness presenteeism refers to reduced work performance or productivity due to health issues or sickness. Unless the work environment problems are remedied or the health issue worsens, the employee can end up having periods of alternating sickness absence and sickness presenteeism; **see Figure 4.**

According to a Swedish study carried out among around 5,900 university and municipal employees, a large proportion (42–55 percent) stated that they experienced work environment and/or health issues (Lohela-Karlsson et al., 2015). The average lost productivity, in the same groups of subjects, was 5.8–7.5 hours per employee and week. Applying the same loss of productivity to industry, this corresponds to a low estimate of around 65 million working hours per year or around 36,000 full-time equivalent employees (FTEs) in industry and mining (SCB, 2019). The calculation illustrates that the hidden costs resulting from lost productivity make up by far the lion’s share of the cost of failures in the work environment, safety and health. To provide further motivation for investments in the work environment and safety that pay off in the long term, it may be important going forward to build up occupational health-economic expertise within Swedish industrial companies in order to calculate these costs and make them visible.

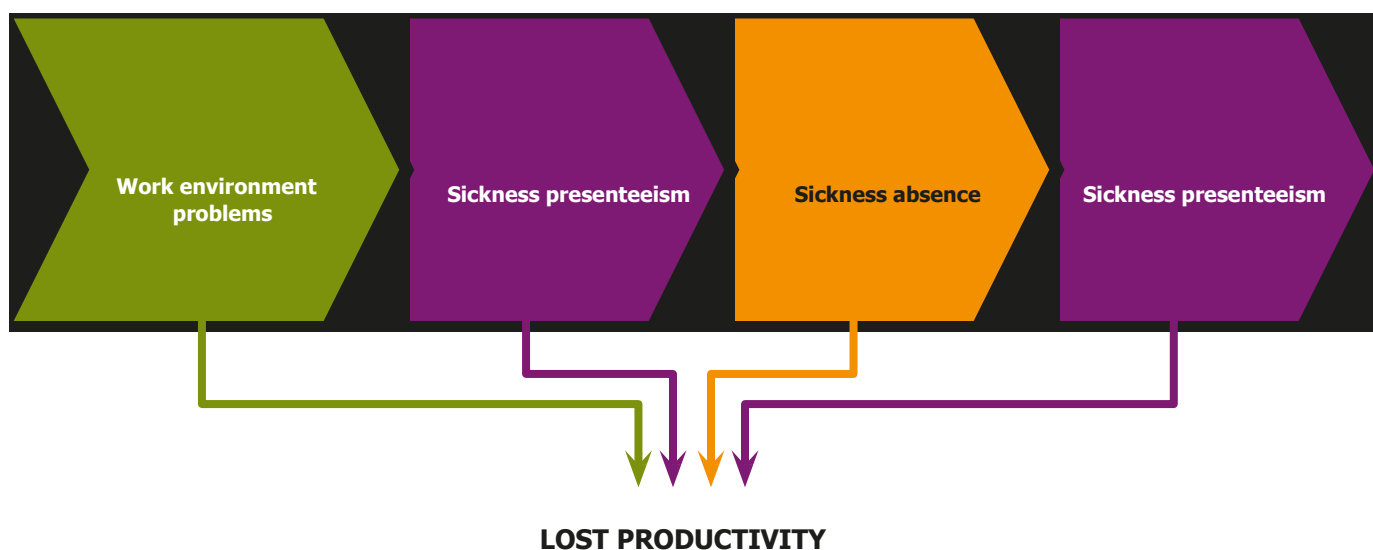


Figure 4. Causes of lost productivity.

A gram of preventive work environment management is worth a whole tonne of rehabilitation, from both an ethical and an economic perspective.

- Mikael Rehnberg, work environment expert



Does it pay for industrial companies to invest in the work environment, safety and health?

In the preceding section “Economic consequences of failures in the work environment, health and safety” we highlighted the main costs of deficits in both the physical and the organisational and social work environment. Although it is difficult to separate the above costs from benefits that result from investing in a good work environment, safety and health, in the following section we have focused as far as possible on the profitability perspective. In other words, to what extent do investments in preventive work environment management pay off from a business-economic perspective?

Investments in preventive work environment management (for example, training supervisors and managers in preventing accidents or conflict in the workplace) are to be regarded like any other investment; in other words, the return depends on the ratio between investments made (cost) and results achieved (benefit). When analysing whether preventive measures pay off, it is necessary to distinguish between different types of effects of preventive measures:

- direct (i.e. preventing accidents in the workplace);
- indirect (i.e. improving the brand);
- short-term (i.e. the operating costs of preventive measures); and
- long-term (i.e. the sustainability of the benefits of preventive measures).

In 2010 the International Social Security Association (ISSA) began an international study “Calculating the international return on prevention for companies: Costs and benefits of investments in occupational safety and health” (Bräunig & Kohstall, 2013). The study investigated the extent of the benefits from preventive work environment management among companies in manufacturing industry. The aim was to develop a cost-benefit analysis (return on prevention, or ROP).

Those interviewed were asked to estimate the costs and benefits of work environment interventions based on their experience. In total, 300 companies in 15 countries took part in the interviews. The results of this extensive study show that there are great advantages to investing in preventive work environment management from the point of view of the manufacturing companies. The results show an average return on the preventive work environment interventions of 2.2 times the investment; **see Figure 5**. In standard terms this means that for each SEK per employee and year that is invested by companies in preventive work environment management, the companies can expect on average a potential economic return of SEK 2.20.

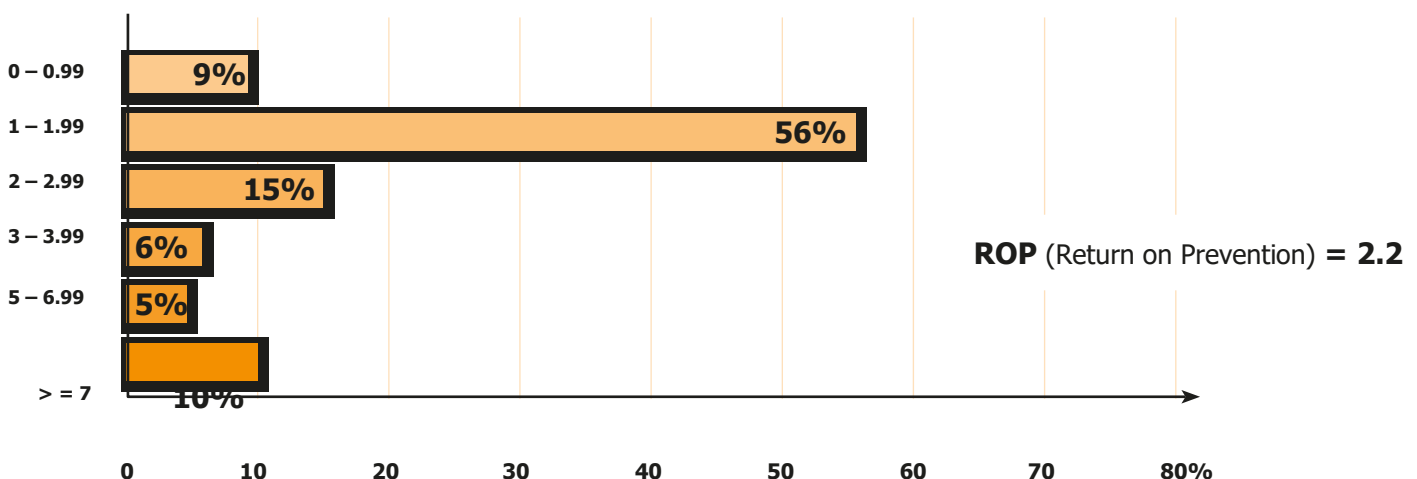


Figure 5. Estimated return on preventive work environment interventions (Source: ISSA).

The companies were also asked to state what costs and benefits they were able to associate with the preventive work environment interventions; see Figure 6. Among the main items on the cost side they specified training and guidance, health checks, investment in protective and safety equipment and company healthcare services. One of the three greatest benefits was healthier and more committed employees. Another benefit was an enhanced corporate image for the employer; in short, that they had boosted their ability to attract and retain skilled staff. However, the third benefit – accounting for the largest contribution to the total – was a productivity increase in the form of, among other things, fewer disruptions, reduced wastage, improved quality and more innovation (Bräuning & Kohstall, 2013). Companies with established systematic work environment management increase their productivity. The costs mentioned at the beginning should

therefore be regarded primarily as investments, in that they create clear added value in the form of greater profitability and enhanced competitiveness.

Another study investigated share price development on the stock exchange (USA, S&P 500) among 26 large corporations in industry, health and medical care, financial services and IT which had won awards for being the best companies in the area of the work environment, health and safety (Goetzel et al., 2016). The results showed that the companies that had won a Koop Award outclassed the average share price development by 2.25 to 1; see Figure 7. The Koop Awards are given annually, with companies that apply to take part in the competition being scrutinised in respect of a multitude of parameters relating to their work environment, health and safety.

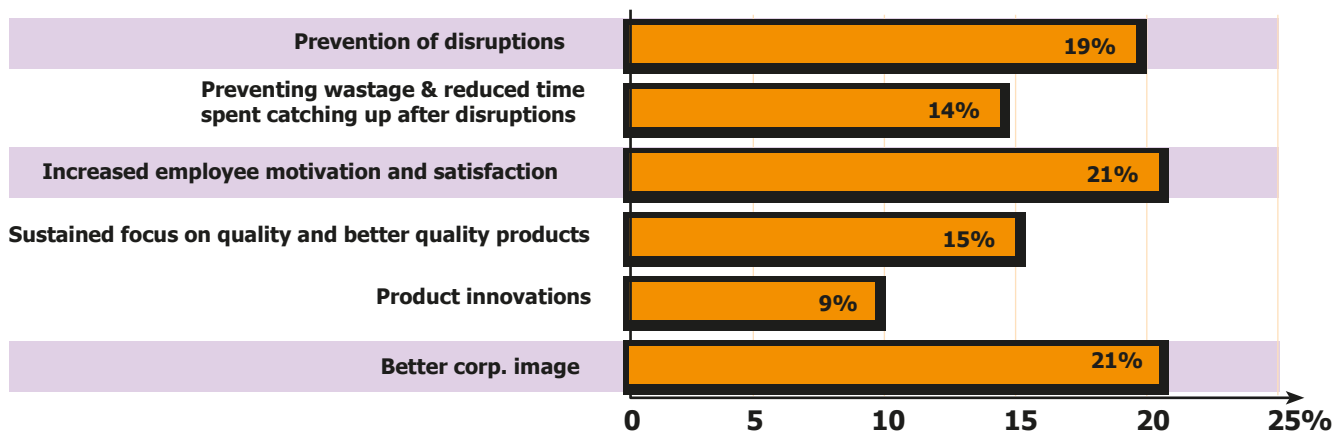


Figure 6. Relevant examples of benefits associated with investments in preventive work environment management.

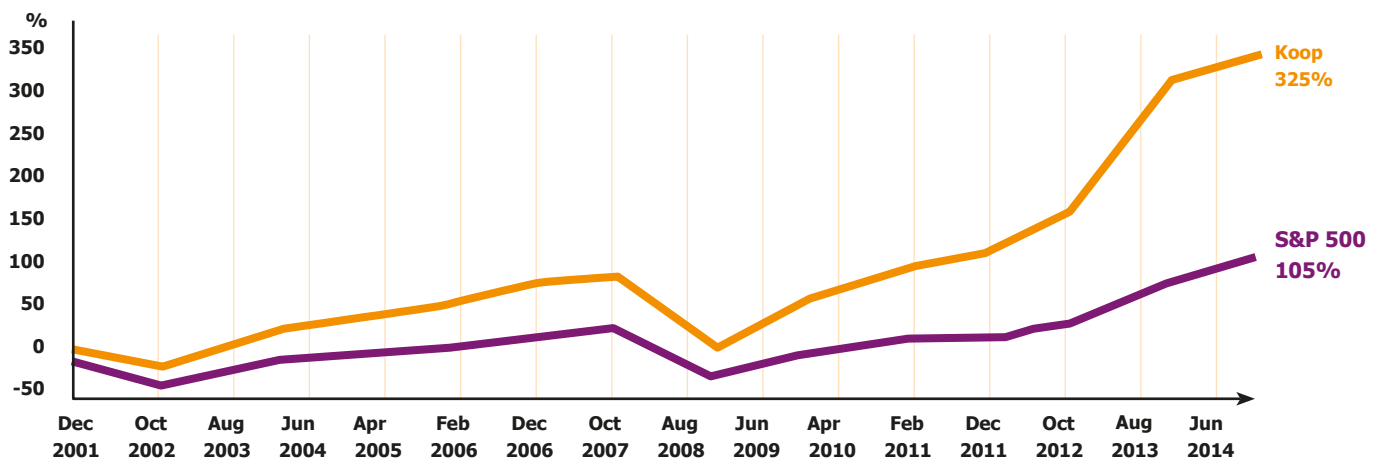


Figure 7. Average share price development in companies with a Koop Award compared with general share price

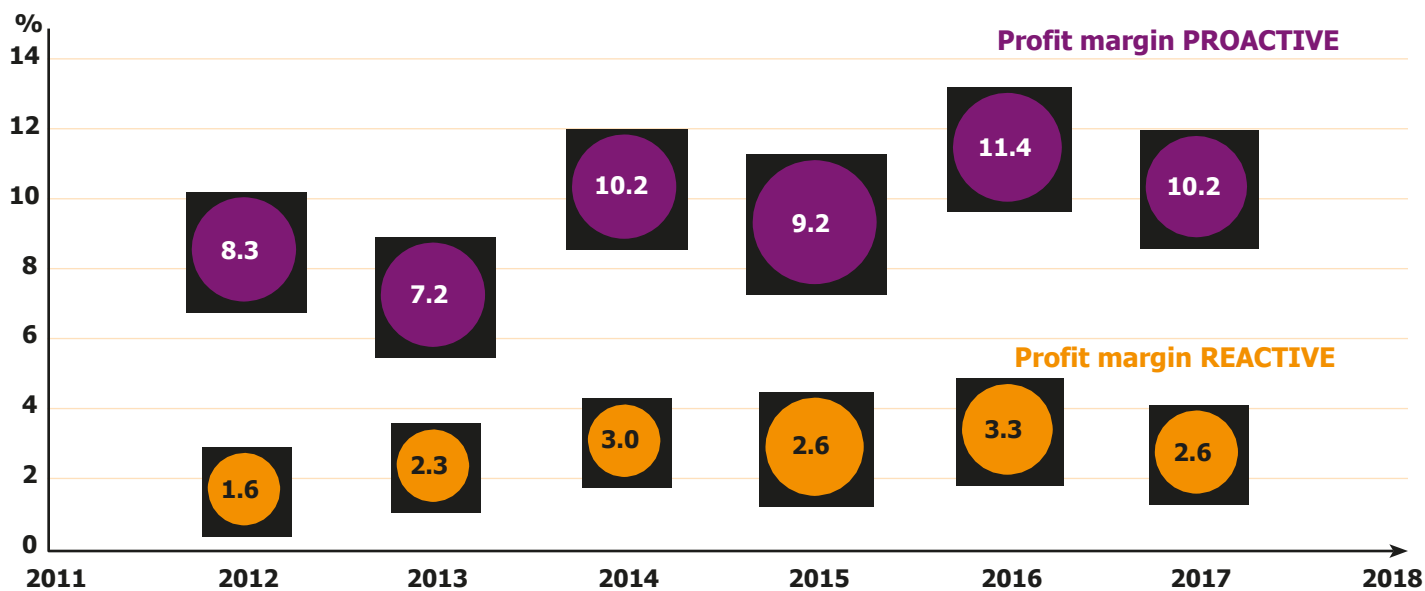


Figure 8. Average profit margin in proactive and reactive companies respectively.

Finally, a study by occupational healthcare provider Avonova AB shows profit margins five times greater among companies that work preventively and systematically on the work environment, health and safety (Avonova Hälsa AB, 2019); **see Figure 8**. Companies that invest more in preventive measures have a 10 percent profit margin on average, while the corresponding figure for companies that work more on reactive measures in the workplace is 2 percent. The analysis is based on just over 300 companies, the majority within manufacturing industry, with a total of 90,000 employees. The companies purchased healthcare services from Avonova during the period 2012–2018.

Tool: Annual follow-up

In annual follow-up, also known as a work environment audit, the employer and the health and safety representatives together go through the fundamental elements of the systematic work environment management. The checklist for annual follow-up (see Appendix 1) deals with both how the work should be implemented and what must be documented, and is in brief a review of how well the business is meeting the requirements set out in the provisions on systematic work environment management (AFS 2001:1). A satisfactory result in annual follow-up not only demonstrates compliance with the law, but also provides proof that the investments made in preventive systematic work environment management have been successful.

In the next section we will show how improvements both in physical factors and in organisational and social factors in the work environment result in profitability and competitiveness for industrial companies. All this naturally assumes good systematic work environment management. In simple terms, well-established work environment management produces a good work environment which in turn results in profits.

A GOOD PHYSICAL WORK ENVIRONMENT IS A COMPETITIVE ADVANTAGE

In this section we report on a number of inspiring examples of the now extensive research that supports the assumption that investments in the physical work environment – sound, lighting, air and ventilation – affect the health, wellbeing and productivity of workers and managers. We also illustrate a summary model and end the section with a simple investment costing. Our aim as authors is that readers will see their next safety inspection from an investment perspective.

A good physical work environment is positively correlated to higher productivity and also leads to other competitive advantages such as attracting and retaining personnel. This is the overall conclusion of a large compilation of research in the area commissioned by the Nordic Council of Ministers (Foldspang et al., 2014).

As we will see below, there is quite clearly an opportunity for companies in industry to start thinking more progressively and to use investments in the physical work environment to create competitive advantages. Since energy and premises usually make up a relatively small proportion of the total costs for a company in comparison with personnel costs, for example, improvements in such things as ventilation, thermal comfort, access to daylight and ergonomics are generally simple measures that result not only in a better work environment but also in increased productivity and profitability.

Our reporting system covers everything – however large or small. What I think is positive is that we do not just focus on technology and machinery, but also on creating pleasant surroundings around these. As an example, we had reports that the walls in a department were very dirty – so they were repainted to make them white and fresh, and the fluorescent tubes etc. were replaced. Those measures cost almost nothing, but they created a very positive feel among those working in these departments and we were also able to see in measurements that they were actually happier in their workplace. It's difficult to measure in economic terms, but I'm convinced that there is a lot to be gained from these simple measures – or low-hanging fruit, as I usually call them. It makes a huge contribution overall.

– **Mona Davik, Health and Safety Coordinator,
Sandvik Materials Technology, Gävle**

VENTILATION

101% increase in 'cognitive score' when working in green, well-ventilated offices

HEATING AND COOLING

6% decrease in staff

performance when the office is too hot and **4%** decrease if office is too cold

DAYLIGHT AND LIGHTING

46 minutes

more sleep for those working at a workstation near a window

66% decrease in staff performance as a result of disruptive noise



ARCHITECTURE AND DESIGN

Flexible workspaces help staff feel more in control of their workload and creates loyalty

GREEN PLANTS

7-12% improvement in processing time at a call centre when the staff had a view of nature

EMPLOYEE ENGAGEMENT

Healthy offices have employees who are regularly consulted and use feedback to drive continual improvement

Figure 9: Summary of benefits gained from interventions, with various examples (heating, cooling, daylight, ventilation).

Air quality

The health and productivity advantages of good quality indoor air are well established (Wargoeki & Seppänen, 2006). Research shows that productivity improvements (measured in number of units produced or number of pages written) of 8 to 11 percent are not uncommon as a result of better air quality, in the form of low concentrations of carbon dioxide and pollutants along with a high ventilation rate (Wargoeki & Seppänen, 2006). The compilation also shows that the optimal ventilation rate is between 20 and 30 litres per second, which is higher than in most workplaces.

Temperature

Research shows that temperature/thermal comfort has a significant effect on satisfaction in the workplace. A study by Wargoeki and Seppänen (2006) showed a 10 percent decrease in performance (measured as performance in tests of concentration, speed, memory etc.) at both 30 °C and 15 °C compared with 21–23 °C. A later study found similar results, with a performance decrease of 4 percent at cooler temperatures than usual room temperature and 6 percent at warmer temperatures (Lan et al., 2011). The study also shows that employees themselves having control over the temperature in the workplace seems to play a part and can in itself result in improvements in productivity.

Daylight and lighting

Good lighting is crucial for the employees' visual ergonomics, work positions and satisfaction, and our understanding of the significance of light for health and wellbeing is growing all the time. It can be difficult to distinguish the advantages of daylight from the advantages of having a view from your workstation. A study showed that lack of access to a window was the biggest risk factor for dissatisfaction with lighting (Newsham et al., 2008). Another study showed that employees who work close to a window received 173 percent more light exposure during working hours and on average slept for 46 minutes more per night. Employees without a window reported poorer quality of life and sleep, as well as more physical problems and sleep disturbance (Boubekri et al., 2014). In addition to daylight and lighting, the furnishings – in the form of green plants in the workplace – appear to affect our performance, providing an increase of between 7 and 12 percent (Nieuwenhuis et al., 2014).

Noise

Noise is one of the primary causes of dissatisfaction with the work environment (Kim & de Dear, 2012). Noise is not just a clear distraction that prevents employees from performing their work correctly and efficiently, but can also have a harmful effect on health and stress levels. For example, a comprehensive compilation by the Swedish Agency for Health Technology Assessment and Assessment of Social Services (SBU, 2015) shows that noise in the work environment is one of the main risk factors for cardiovascular disease. Other studies have found up to a 66 percent decrease in performance when duties are carried out in noisy environments (Banbury & Berry, 1998).

Ergonomics

Research has shown that employers can reduce their costs through effective measures to combat repetitive strain injuries and musculoskeletal pain. Among others, Tompa et al. (2009) conclude that manufacturing industry in particular has a lot to gain from making ergonomic work environment interventions. Swedish studies within process and engineering industry showed that measures to improve the work environment and health led to a 3 to 5 percent increase in productivity, measured in terms of such factors as units produced and deadlines met (Jensen & Roos, 2004; Ødegaard & Roos, 2014). The lost productivity from sickness presenteeism due to back complaints is calculated as 10 to 15 percent on average, which corresponds to 4–6 hours per week for a 40-hour working week (Joish & Brixner, 2004; Lahiri et al., 2005). In the studies, lost productivity was calculated as number of hours and days of sickness absence as well as number of self-reported days of reduced productivity. Finally, compilations show that the return on investments in workplaces to counter back complaints is 2.5 to 7.7 times the money spent (Myndigheten för arbetsmiljökunskap, 2019b). Overall, the research shows that the most cost-effective measures combine individual interventions with interventions at the workplace. It shows that both sickness presenteeism and sickness absence decrease and that there is an increased rate of return to work as a result of such interventions.

Investment costing for interventions in the physical work environment

There are great opportunities for companies to start thinking differently and to use their physical premises to create competitive advantages. The method proposed below could be used by all companies wanting to get the best out of their business.

When it comes down to it, personnel costs (including salaries and benefits) today account for a large proportion of the operating costs in modern industrial companies. For white-collar salaried employees in an industrial company a simple standard costing can be used, in which personnel costs account for around 90 percent of the business's operating costs while energy costs make up only 1 percent and the cost of premises 9 percent (World Green Building Council, 2014).

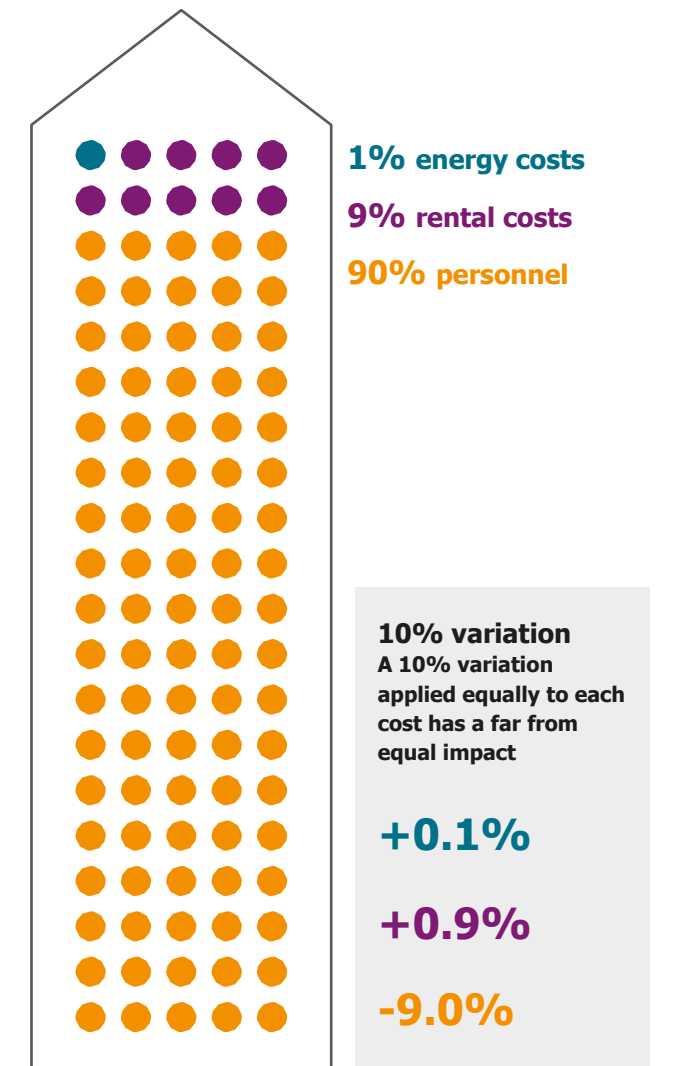


Figure 10: Calculation example.
Typical operating costs in service companies.

As shown in the calculation example for investment costing in **Figure 10**, a 10 percent saving in energy costs results in a decrease in total operating costs of just 0.1 percent and a 10 percent reduction in the area of the premises reduces operating costs by a modest 0.9 percent. However, if these ‘savings’ in the physical work environment (for example, poorer ventilation, colder/warmer, noisier) lead to a 10 percent decrease in productivity among employees, they result in an operating cost increase of a full 9 percent. So to sum up, modest savings in the physical work environment have led to dramatic cost increases as a result of poorer productivity.

Vice versa, however, a small investment in a better physical work environment which leads to a fairly small improvement in employee productivity can have a very great economic benefit for the company – a benefit that is many times greater than some other economic savings.

In other words, if we better understand the relationship between the physical work environment, people’s wellbeing and productivity, the potential for practical application is significant and could be a vital business decision. Individual organisations can apply this costing to their own business before deciding on investments in the physical work environment.

Tool: Physical safety inspection

In a physical safety inspection for offices or manufacturing, the manager responsible and the health and safety representatives together go through questions concerning how the premises, machinery and workstations are designed. The checklists (see Appendix 2 and Appendix 3) begin with some general subject areas and end with some typical risk areas and frequently found workspaces.

A satisfactory result following a safety inspection not only demonstrates compliance with the law based on a great number of work environment regulations, but also shows that the costs of the measures you have taken in the physical work environment should in actual fact be regarded as investments.

A GOOD ORGANISATIONAL AND SOCIAL WORK ENVIRONMENT IS A COMPETITIVE ADVANTAGE

In this section we report on various inspiring examples of research that supports the assumption that investments in individual factors in the organisational and social work environment – such as leadership, workload, trust and clarity – affect the health, wellbeing and productivity of employees and managers. We will also illustrate a simple and dynamic model for a well-functioning and profit-driven organisation, and will end the section with a checklist and an occupational health economic analysis tool.

As mentioned previously, growing mental health issues in society in general and within working life in particular have increased interest in the organisational and social work environment. Work environment factors such as unhealthy workloads, a lack of boundaries on working life and victimisation have come increasingly into focus in our industrial workplaces. Clearer rules on and requirements of the organisational and social work environment were therefore demanded, resulting in the Swedish Work Environment Authority's provisions on the organisational and social work environment (AFS 2015:4) that came into force in 2016. The provisions are adapted to working life today and clarify what employers and employees must do within the organisational and social work environment in the context of systematic work environment management.

Some of the work-related factors that increase the risk of mental health issues can be changed through interventions in respect of the organisational and social work environment. This reduces lost productivity and sickness absence, which also reduces the employer's costs. Current collective knowledge in the area of the organisational and social work environment shows that there are a number of interventions that affect sickness absence and lost productivity. These include workplace-related initiatives and support, fair and supportive leadership, a good social climate, clarity of roles and control over decisions, as well as trust between management and employees (Aronsson & Lundberg, 2015; Myndigheten för Arbetsmiljökunskap, 2019c).

When it comes to the economic effects of interventions to prevent or reduce stress in the workplace, there are only a few published studies. The majority of these interventions are aimed at the individual and show that such interventions in the workplace are cost-effective, with an average decrease in sickness absence of 25.1 percent as well as a 24.5 percent decrease in healthcare and medical costs (Chapman, 2012).

Leadership

Looking through the research into what characterises a healthy and well-functioning workplace, the impact of leadership on mental health is the most frequently investigated factor. It has been found that good leadership – for example, leadership that is fair, supportive and clear – produces positive health changes (Lohela-Karlsson et al., 2009). It also results in both increased wellbeing (Stansfeld et al., 2013; Tuomi et al., 2004) and increased job satisfaction among employees (Munir et al., 2012), as well as reducing lost productivity and sickness absence and thus costs to the company (Munir et al., 2011; Schmid et al., 2017). Vice versa, an extensive German study shows that non-supportive leadership results in 1.54 times higher costs for sickness absence and sickness presenteeism among employees (Schmid et al., 2017). Finally, research shows that safety-focused leadership increases safety within industry and reduces the risk of near-misses, accidents and downtime (Wu et al., 2008, 2011).

Control

Control at work is essential for improved mental health (Munir et al., 2011). By control, or freedom to act, is meant both the authority a person has at work and how much they are able to make decisions. A high level of control has been associated with wellbeing (Stansfeld et al., 2013) and has a protective effect against high demands, meaning that stress does not increase in such situations (Dalgard et al., 2009). Stress is also reduced where someone has control over their time, so that working life does not infringe on personal life (Moen et al., 2013). High levels of control at work have proved to be correlated with higher work performance (measured as speed of identifying errors and targets achieved), sickness absence and lower employee turnover (Bond et al., 2006).

Balancing demands, workload and reward

Reasonable demands and workload (Bond et al., 2006; Dalgard et al., 2009; Tuomi et al., 2004) and balance between effort and reward (Siegrist, 1996) are important factors for the individual's mental health and wellbeing. In a large study from the UK (North et al., 1996), a very high workload and high demands combined with little control were seen to increase sickness absence by 10–20 percent. Similarly, Bond et al. (2006) found that work teams in various sectors with a high workload have higher employee turnover.

Social support

Employees who feel that they have well-functioning social support from, for example, their supervisor and colleagues have proved to develop fewer stress symptoms than others (Karasek & Theorell, 1992). Examples of support include guidance on the work, feedback on what they have done or camaraderie among the team. Studies have shown that employees in industry who feel supported by their supervisor and/or colleagues have higher productivity (Patterson et al., 2004) and a lower level of sickness absence, and are less inclined to seek other jobs (Bond et al., 2006).

Fairness

Fairness, also known as organisational fairness, is the subjective assessment of fairness in resource allocation, procedures and treatment of employees. Employees who perceive general fairness in the workplace run a lower risk of taking sick leave due to mental health issues (Elovainio et al., 2013). Similar results from the Netherlands showed that where fairness in the workplace was assessed to be high, depressive symptoms were assessed to be lower and there were lower levels of sickness absence (De Boer et al., 2002). Fairness can also balance out other problems with the work environment. For example, research shows that employees who had experienced problems with the work environment but at the same time also fair leadership, a good social climate, clarity of roles and control over decisions had considerably lower levels of lost productivity than employees who also reported inequality (Lohela-Karlsson et al., 2015).

Well-functioning organisation

A well-functioning organisation is essential if the organisational and social work environment management is to result in profitability and competitiveness. But how do you bring about a functioning organisation in all areas?

Research suggests that leadership is key. The two dimensions of leadership, i.e. supportive and constructive leadership, are expressed differently and have different effects on the organisation. Supportive leadership means leadership that supports and listens, thereby creating cooperation, trust and confidence. The second dimension is constructive leadership, i.e. getting to grips with things, setting targets, making decisions, follow-up/evaluation and rectification. Constructive leadership creates good conditions for the ‘machinery’ of the organisation to work.

The two different dimensions of leadership have different effects on the organisation and on business results. The main effect of constructive leadership is on how the organisation works: people work systematically, while goals, roles, responsibilities and authority are clear and unambiguous. In constructive leadership the focus is on effectiveness and ‘good order’. The main effect of supportive leadership is on the social work environment; in other words, that there is support, trust and cooperation between colleagues. Another element of the social work environment is that people feel able to ask for help and to address errors and mistakes.

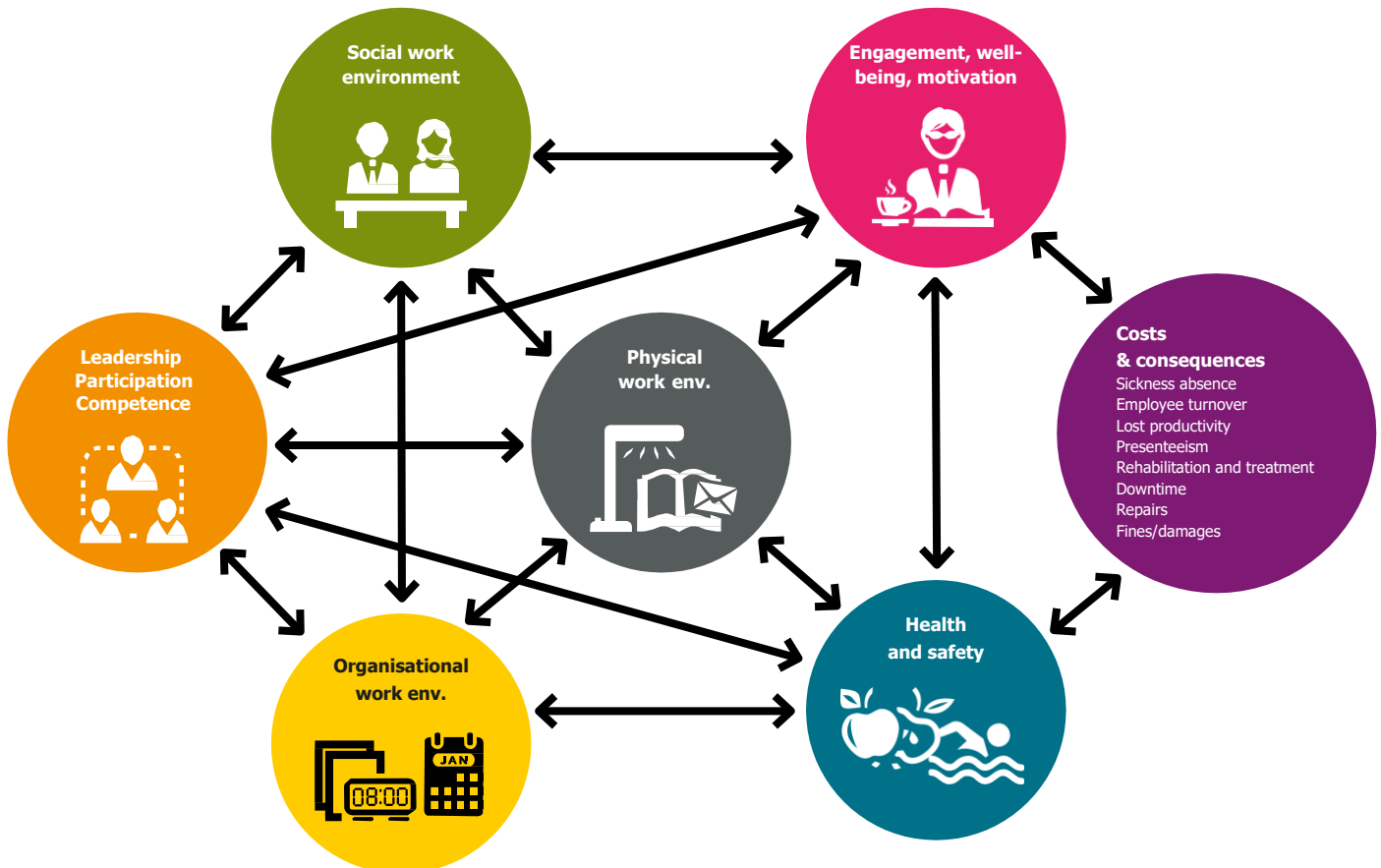


Figure 11. A well-functioning organisation (Source: Stefan Blomberg, 2020).

When there is an imbalance between these two dimensions it creates problems in the organisation and for the organisation's results. If there is too much emphasis on constructive leadership and good order, in the short term this has positive effects on both effectiveness and results. However, it affects trust – which gradually reduces, both between employees and between employees and supervisors, and this can in turn result in collaboration problems, conflict, bullying and harassment. If we instead have too much focus on supportive leadership and the social work environment, but little in the way of good order, then wellbeing and collaboration increase in the short term. Without good order and structure, however, little gets done and it also becomes unclear who should do what – which in turn increases the risk of collaboration problems and conflict.

A good balance between supportive and constructive leadership, the organisational and social work environment, and between trust and order creates wellbeing, engagement and health as well as effectiveness, safety and in the final event also profitability and competitiveness.

Occupational health economic analysis tool for mental health issues in the workplace

Karolinska Institutet, in partnership with the Swedish Agency for Work Environment Expertise and the industry organisation for corporate healthcare Svensk företagshälsövård, has produced an occupational health economic analysis tool designed in accordance with the model used in systematic work environment management (Myndigheten för arbetsmiljökunskap, 2019a). This tool complements the *Riktlinjer för psykisk ohälsa på arbetsplatsen* [Guidelines on mental health issues in the workplace] produced previously (Myndigheten för arbetsmiljökunskap, 2019a). The analysis tool provides employers with support in their work on mental health issues by identifying interventions that meet the business's goals and needs. The aim is to bolster work to counter health issues and to promote health by providing the economic arguments that are often demanded.

The analysis tool is structured according to three matters frequently raised ahead of decisions on work environment and health interventions:

- Economic effect of the health issue
- Calculating the cost of interventions
- Economic effect of interventions

The analysis tool is split into two parts: business analysis and costing.

The **business analysis** provides support for performing a status analysis and surveying your own business based on, among other things, the situation of supervisors and the work situation of employees. It deals with such matters as the balance between demands and control and clear roles.

Tool: Organisational and social work environment survey

One way to investigate how well the organisation has worked is by using an established organisational and social work environment survey. Such a survey captures risk and health factors within the organisational and social work environment in areas such as leadership, workload, recovery and victimisation (see Appendix 4). Employees, supervisors and management all complete and get feedback on the survey.

Once the survey has been carried out, the important work on together making improvements and finding measures in the areas that need to be developed begins. A good score in the organisational and social work environment survey indicates a good organisational and social work environment and a well-functioning organisation where employees are happy and good results are achieved.

Costing of mental health issues involves an economic analysis of sickness absence, sickness presenteeism and interventions. The costing is carried out for both short-term and longer sick leave. Since research has shown that the majority of those suffering mental health issues do not take sick leave, it is important that lost productivity as a result of sickness presenteeism is also calculated.

The occupational health economic analysis tool helps the organisation's management, economists, supervisors and HR managers to produce a good documentary basis for decisions on investments in the business. It can also be used by work environment teams/safety committees and in partnership with corporate healthcare services. To make an occupational health economic calculation you need to have a detailed knowledge of work-related mental health issues.

To measure stress levels among employees it is helpful to use the Karolinska Exhaustion Disorder Scale (KEDS; see appendix) which is a battery of nine questions in which people rate their own experience against various statements concerning ability to concentrate, sleep, memory etc. (Beser et al., 2014). One aim is to draw the respondent's attention to risk behaviour that results in high stress levels and exhaustion-related symptoms. The higher the points scored, the greater the risk of being affected by stress-related health issues. Another aim, linked to the example below, is to anonymously collect the results from all employees who took the test. Those scoring 19 points or more in the test are placed in the 'high stress' group.

How much do stress-related health issues cost your company? E.g. industrial company 1,000 employees



Figure 12: Yr. 1

A total of 40 percent of supervisors' employees have moderately high or high stress levels. The costs of long-term and short-term sick leave make up only a very small proportion of the costs of health issues in the organisation. Lost productivity (measured as loss due to sickness absence and sickness presenteeism) from moderately high and high stress levels among employees who continue to go to work is estimated at 20 percent, which is highly likely in an organisation with a mix of (white-collar) salaried employees and (blue-collar) collectively employed workers. In pure service organisations with high cognitive requirements,

research shows that it is not uncommon to have productivity losses of 35–40 percent (Myndigheten för arbetsmiljökunskap, 2019a). The costs of health issues in the example organisation total just over SEK 67 million, of which only SEK 2 million consists of the costs of long-term and short-term sick leave. A full SEK 65 million are costs that arise as a result of productivity losses among employees and supervisors who remain at work with high stress levels. This corresponds to 150,000 working hours or 87 lost full-time equivalent employees (FTEs) on a full-year basis.



Figure 13: Year 2.

After organisational interventions to reduce stress among employees and supervisors. Now the proportion of stressed employees has decreased from 40 percent to 15 percent. In numerical terms this means a cost reduction for stress-related health issues in the organisation of just over SEK 40 million or that the number of lost working hours has been reduced by

89,000 hours, corresponding to 52 FTEs compared with the previous year. This in turn means that if SEK 40 million has been invested in preventive measures, the company will break even as early as year 2. If SEK 20 million has been invested then there is a Return on Investment (ROI) or Return on Prevention (ROP) of a full SEK 20 million after just one year.

Discussion

The occupational health economic aspects of the work environment at an industrial company and of that company's work environment management are something that cannot be captured in a simple description. As we mentioned at the beginning, our aim with this report was not to explain the multifaceted complexity of organisations' work environment in general or to provide a comprehensive review of occupational health economic aspects in particular.

Rather our intention was to provide examples and inspiration, and to show how today we can in fact measure and reveal correlations that we were perhaps not previously able to see so clearly. Employers tend to measure and calculate what can be measured; what exists in the systems. This in turn steers both thoughts and behaviours, and can result in people missing the 'invisible cost elephant in the room' – which is the fact that the greatest costs of health issues in an organisation are not sick leave, but rather lost productivity as a result of sickness presenteeism. Here the message is clear: a gram of prevention is worth a tonne of rehabilitation, including from an occupational health economic perspective.

There is therefore a large and somewhat unexploited economic potential in producing even earlier warning systems, such as for stress-related health issues, in industrial companies. Thus from a legal, ethical and economic perspective we should not only achieve a good work environment, but also prevent health issues by avoiding high and moderately high stress levels.

Both research and the authors' proven experience indicate the importance of stepping up companies' proactive or preventive work yet further – not least in the form of better systems for catching risks in time, carrying out risk assessments before organisational changes or other changes in the business, and continuous risk assessment in respect of the physical, organisational and social work environment. A work environment that results in a high level of hidden presenteeism while substantial resources are put into high sick leave figures is naturally not the way forward for modern Swedish industrial companies.

In the report we have also given a number of examples of how integrated actual production work is with the practice of work environment management. We have shown how individual work environment factors can directly contribute to productivity, and by extension profitability, in industrial companies.

In light of the above, the main pillars of Industriarbetsgivarna's Vision Zero – leadership, participation and competence – provide more than just a foundation for the physical work environment and the organisational and social work environment. They also provide a basis for greater competitiveness.

The common denominator in leadership, participation and competence, and what brings these together, is good cooperation and good collaboration between all levels of the company. In recent years the importance of an organisation's social capital for performance, engagement and wellbeing in the workplace has increased. Social capital can be defined as the potential that can be achieved through trusting cooperative relationships, fairness and respect for each other. Social capital in a workplace is a key factor for ensuring that shared tasks and work environment management are both carried out in the best way within the framework of what is possible. Social capital – provided it is measured – can be used as a kind of key indicator, and is essential for occupational health economic benefits.

A basic mutual trust that the other party is acting in everyone's best interests is high up in an organisation's 'food chain'. This is not a new management philosophy that can be easily implemented, but rather an approach and a culture that can be cultivated by strengthening relations in the workplace – between management and employees, within the individual department and across the organisation. It is particularly important to safeguard social capital in conjunction with organisational changes.

- Hanne Berthelsen, Associate Professor of Leadership and Organisation, Malmö University

Research results show that social capital is linked to other key factors that are of direct significance for operations and effectiveness, such as sickness absence, employee turnover, productivity, quality, engagement at work and in development work; **see Figure 14**. Employees in workplaces with high social capital feel that they generally have more influence, get better support and more recognition

from their immediate supervisor, have better opportunities to develop, are more inclined to help each other and perform better. With this in mind, it is not so strange that employees in workplaces with high social capital are generally also happier, healthier, more satisfied with their jobs and show fewer symptoms of overload.



Figure 14: Social capital as a viable key indicator.

In summary we can say that when the three pillars of leadership, participation and competence are combined with good cooperation and trust at all levels vertically and horizontally in a company, this creates an organisation with strong social capital and a good safety culture.

Safety culture is the shared attitudes, values, beliefs and practices among individuals in an organisation concerning the importance of health and safety and the necessity for effective systematic work environment management.

- Booth (1996)

In this report we have made a number of reflections and pointed to research on how much there is to be gained from factors in, on the one hand, the physical work environment and on the other, the organisational and social work environment. We have introduced calculation models and made reference to specific checklists and surveys that are commonly used in work environment management.

The research, Industriarbetsgivarna's three main pillars and the proven experience of the interview subjects and the authors all point in the same clear direction. It is about building a corporate culture where the goal of the work is to profitably and effectively deliver quality goods and/or services to satisfied customers. This goes hand in hand with the work environment goal of preventing health issues and accidents and of achieving a good work environment. None of these goals is possible without leadership, participation and competence. Many reports end with the words 'more research is needed' - but as regards these general and robust links, it is not primarily more research that is required, but rather yet more leadership, participation and competence.

On measuring social capital and safety culture

Various well-validated measuring instruments have been developed to measure social capital, safety culture and the psychosocial safety climate. A good score for the questions below indicates good social capital and a good physical and psychosocial safety culture, which together provide fertile ground for a well-functioning organisation which is still a profitable and competitive business. Questions concerning social capital, the psychosocial safety climate and safety culture can be found in Appendixes 5-7.

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Appendices

1. Annual follow-up
<https://checklists.prevent.se/checklist/answer/182>
2. General safety inspection – offices
<https://checklists.prevent.se/checklist/answer/90>
3. General safety inspection – manufacturing
<https://checklists.prevent.se/checklist/answer/100>
4. Occupational and social work environment survey
<https://www.prevent.se/osaenkatnen/>
5. Occupational health economic analysis tool
<https://avonova-heat.azurewebsites.net/?config=se>
6. KEDS (Karolinska Exhaustion Disorder Scale)
<https://keds.nu/>
7. Safety culture – safety indicators
<https://www.prevent.se/sakerhetsvisaren/>
8. Social capital. The questions below relate not to your own job, but to your workplace as a whole:
 - a. In general, do the employees trust each other?
 - b. Does the management trust the employees to do a good job?
 - c. Can the employees trust the information that comes from the management?
 - d. Are the employees able to express their views and feelings?
 - e. Are conflicts resolved fairly?
 - f. Are duties distributed fairly?

Response options:

Very much; A lot; To some extent; A little; Very little

9. Psychosocial safety climate. The following statements concern how the employees' work-related mental health and safety are managed in your organisation. Answer with the option you consider appropriate:
 - a. In my organisation, senior management acts quickly to resolve problems that affect employees' mental health.
 - b. Senior management acts purposefully if problems arise that concern employees' mental health.
 - c. Senior management supports stress prevention efforts in the organisation.
 - d. Employees' mental wellbeing has a high priority in this organisation.
 - e. Senior management shows by its actions that employees' mental health is important.
 - f. Senior management considers employees' mental health to be as important as the organisation's performance targets.
 - g. There is good communication on psychosocial safety matters among the employees in our organisation.
 - h. Employees in our organisation get information on matters concerning work-related mental health.
 - i. There is an openness in our organisation to employees' suggestions concerning mental health.
 - j. Health and safety representatives, trade unions and employees cooperate on matters concerning mental health and safety in our workplace.
 - k. Employees are encouraged to engage with issues relating to mental health and safety.
 - l. Stress prevention efforts involve all levels in our organisation.

Response options:

Strongly disagree; Disagree; Neither agree nor disagree; Agree; Strongly agree



Industriarbetsgivarna is the employers' organisation for the steel, metal, mining, pulp, paper, sawmill, construction materials and bottle glass industries and for the welding engineering industry. Industriarbetsgivarna represents nearly 1,000 member companies with around 90,000 employees.

