

Turnover Intention among Engineering Employees:
A Question about Psychosocial Work Environment Factors and Age?
A quantitative study conducted on a global oil and gas company.

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Acknowledgement

«Not everything that counts can be counted, and not everything that is counted counts» (Einstein 1879-1955). For me, this describes why I used my first years at NTNU conducting qualitative studies. My bachelor theses in psychology and sociology were both qualitative studies. Over the years, however, I have learned the importance of quantitative research and how essential it is to the social science research field and for the society itself. My greatest challenge with my master thesis project was therefore to conduct my first quantitative study.

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I am now looking forward to the road ahead and to step into the working life.

Marielle Paulsen

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Abstract

Title: Predictors for turnover intention among engineering employees.

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Background and purpose: The main goal was to examine which factors in the psychosocial work environment that would predict turnover intention among engineering employees in a larger global company within the oil and gas industry. The second goal was to examine if the predictors would differ for employees under the age of 40, compared to employees over the age of 40.

Method: Data was collected using a self-reported electronic questionnaire designed by Mille Myhre and myself. The analyses included three control variables and seven independent variables, which also encompassed a new aspect of the psychosocial work environment research in relation to turnover intention, namely the personal resources optimism and self-efficacy. The questionnaire was distributed through an e-mail sent from the Vice President HSE, and a sample of 128 participants was used in the analyses conducted in SPSS.

Key findings: The predictors were job satisfaction, leadership and sickness absenteeism, and were found to have different rank of importance for the employees in the two age groups, regarding the predictor's beta value. Optimism and self-efficacy were not found as predictors of turnover intention in the current sample.

Conclusion: To manage the employee's turnover intention the leaders should focus on the employee's satisfaction with their work, keeping a high qualitative transactional leadership and be observant to the employee's sickness absenteeism, but control for the employee's age if they were to initiate actions to control for turnover intention.

Key words: Turnover intention, job satisfaction, leadership, sickness absenteeism, age, engineers, and multiple hierarchic regression analyses.

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The intention of turnover

There is general consensus around the importance of psychosocial work environment as a concept (Eiken & Saksvik, 2011), but despite its increased awareness the last decades there is still a disagreement with regard to the factors involved and their importance. This is an issue of interest for both researchers and organizational leaders. Organizations are today investing large amounts of money in work environment measurements, and initiating interventions to empower the employees. It is not only essential to keep employees satisfied with their work, but it is also essential to avoid losing valuable employees. A problematic phenomena in the current labor marked is high sickness absenteeism, but over the last 10-15 years a problem with an increasing frequency of turnover has appeared. An analysis conducted by Central Bureau of Statistics, based on data from a study called LOGG 2007 (Brunborg, Slagsvold, & Lappegård, 2009), shows that one out of four employees wish to change jobs over the next three years (Kjeldstad & Dommermuth, 2009). When it comes to organizational behavior, turnover is one of the most studied concepts (Price, 2001). As early as in 1973, Porter and Steers presented their Met-Expectation model, a model demonstrating how unmet job expectations may result in dissatisfaction and following turnover. Since then other theories and models have followed (Hom & Griffeth, 1995; Lee & Mitchell, 1994; Mobley, Horner, & Hollingsworth, 1978; Steers & Mowday, 1981). The concept has attracted attention because of its psychological, organizational, as well as its economic dimension (Long, Perumal, & Ajagbe, 2012), and has therefore involved disciplines beyond psychology.

Turnover is often studied as an outcome and in the past tense, but a more interesting approach to the phenomenon is the intention preceding the decision of leaving. In Norway 24 % out of a sample of 1526 employees answered “very likely” or “likely” to the question about the intention to quit and find a new job within the next 12 months (Sousa-Poza & Henneberger, 2004). Turnover intention is positively correlated to actual turnover (Byrne, 2005; Hendrix, Robbins, Miller & Summers, 1998; Steensma, Van Breukelen, & Sturm, 2004) and has been shown to be its strongest predictor (Lambert, Hogan, & Baron, 2001; Mobley, 1977; Steel & Ovalle, 1984). This should attract the attention of the Norwegian companies and their management. “If the precursors to intention to quit are better understood the employer could possibly institute changes to affect this intention” (Dalessio, Silverman, & Schuck, 1986, p.261).

Turnover intention and related constructs have been studied over years, and are integrated in several models designed to summarize the whole turnover process (Bakker & Demerouti, 2007; Bakker, Demerouti, & Verbeke, 2004; Hom & Griffeth, 1995; Lee &

Mitchell, 1994; Mobley et al., 1978; Steers & Mowday, 1981). However, a possible limitation seen in for example the JD-R model (Bakker & Demerouti, 2007) and the work of Price and Mueller (1981), may be their main focus on organizational and contextual demands and resources, which neglects the personal resources the employee may have. Mobley and colleagues, however, refined a model illustrating the cognitive and affective events in the cognitive decision making process of quitting one's job (Mobley, 1977; Mobley, Griffeth, Hand, and Meglino, 1979; Mobley et al., 1978). Fishbein and Ajzen (1975) has a similar direction in their theory with focus on job satisfaction's indirect effect on the intention to quit or to stay, while Steers and Mowday (1981) and Mowday, Porter and Steers (1982) see the desire of intent to stay or leave as a mediator of the relation between affective mechanisms and behavioral outcome. One of the latest contributions that I find interesting is Sweetman and Luthans' (2010) "psychological capital". This capital consists of the facets efficacy, optimism, hope and resiliency, which are thought to work as buffer between contextual demands and turnover intention (Bothma & Roodt, 2012).

Why turnover intention is an important issue

A focus that seems prominent in the organizational culture is dealing with problems when they concur. The leader will attempt to identify the cause of the problem, analyze it, and then initiate to repair it. However, a lot of psychological work environment issues never get further than the mapping phase, or result in an incomplete explanation of the problem (Gamperiene, Grimsmo, & Sørensen, 2007). This work approach has for a long time influenced the field of organizational psychology research. Given the high costs associated with managerial failure to retain a team of well-educated, effective employees (Cascio, 1991; Mirvis & Lawler, 1977), the desire to understand turnover is hardly surprising. A challenge for many companies is the need for continuously maintaining the skills needed to remain a competitive workforce (Rowings, Federle, & Birkland, 1996), which makes turnover a costly matter for the company (Chen, 2006). Considering voluntary turnover, an Australian exit survey found that organizations of 100 employees would have to pay around \$1 million per annum, assuming a staff turnover rate of 18%, and an average salary of \$75,000 (Insync Surveys, 2012). Voluntary turnover is also shown to involve both the very worst and the very best performers, which makes interesting trade-offs for HR strategists (Barrick & Zimmerman, 2005). A report from Society for Human Resources Management (SHRM) tells us that organizations experienced a voluntary turnover rate of 17% during year 2000. And in 2006, Gribbons found that organizations reported an increased concern about voluntary turnover. However, a large amount of the organizations admitted that little was done to

prevent this, which is unfortunate considering that this is something the management can influence directly (Griffeth, Hom, & Gaertner, 2000).

Research on turnover intention is mostly generated from a handful of traditional populations (Lambert et al., 2001), largely from the military (Griffeth et al., 2000) and occupations within hospitals (Chan & Morris, 2000; Hom and Griffeth, 1991; Steel & Ovalle, 1984). With the exception of a few studies on an automotive retail store chain (Hom and Kinicki, 2001), probation personnel (Lee, Phelps & Beto, 2008) and IT companies (Korunka, Hoonakker, & Carayon, 2005; Rahman, Naqvi, & Ramay, 2008), the research on the topic has ignored other important professions (Carmeli & Weisberg, 2007; Sun, 2011). Recent research demonstrates that engineers show a lower retention rate within their profession compared with other college graduates (Kennedy, 2006). The reason for this should be of great interest to researchers and engineering management considering that many engineers are working within the oil and gas industry, which is the largest industry sector in Norway. However, most of the sparse research on turnover intention in the field of engineering has been conducted on onshore and offshore employees (Darmar, Jusoh, & Rasli, 2012; Dickey, Watson & Zangelidis, 2009; Meyer & Allen, 1997; Nielsen, Bergheim, & Eld, 2013; Sulimana & Junaibib, 2010; Sun, 2011). Because of the high demand for engineers in general, the importance of gaining more comprehensive knowledge about the factors related to retention of engineers working at headquarters and in the wings of projects have been overlooked (Igbaria & Siegel, 1992). By looking into this specific group of engineers one might find out what explains that this profession has a lower retention rate than other occupations.

Even after 30 years of rigorous research effort researchers and organizational leaders cannot predict much better than chance whether a particular employee intend to quit, (Lee & Mitchell, 1994). The concept is still far from being fully understood. This is partly because of its complexity and its open methodological questions (e.g. Steel, 2002). But what we know is that parallel to employees getting higher education and more experience, the workforce develops a more individualistic attitude. Employees with desirable work skills will increasingly jump between jobs in a more frequent pace than earlier (Kommunal- og Moderniseringsdepartementet, 1999). Employees become more loyal to their career, than to their company. By understanding the factors influencing turnover intention, engineering leaders can understand how they may retain valued employees (Garden, 1989; Igbaria & Siegel, 1992), as well as recruit new staff and increase the probability of keeping them. “Comprehensive models have a practical value in helping managers think heuristically about

possible causes for employees' leaving" (Lee & Mowday, 1987, p. 738). In line with the difficulties for collecting data about actually voluntary turnover from employees who have left the organization, the concept of turnover intention makes the possibility to study the factors antecedent of turnover, as well as unfold an important and interesting step prior to performing the quitting behavior, namely the turnover intention itself. By combining a selection of models and theories from the field of turnover intention research, this quantitative study will attempt to find the predictors of turnover intention among the sample of engineering employees. The study will be directed both at psychological and demographic determinants. Economical determinants will not be look into, however, because of the limited transparency into the organization's payroll levels and others related issues. The research questions are based on this:

1. Which factors within the psychological work environment may predict the engineering employee's turnover intention?
2. How do personal resources predict turnover intention?
3. How do the predictors present themselves in the sample of employees under the age of 40, compared to the employees over the age of 40?

The present study is organized as followed: the forthcoming section presents the theoretical background and the development of the research questions, followed by a presentation of the method and the selected analyses. Thereafter the results will be presented and interpreted, before the final section will discuss the results, implications for the organization in question, as well as the study's methodological limitations.

Theoretical framework

This chapter introduces relevant concepts and theories. The most important contributors to the field of turnover and turnover intention are Mobley (1977), Mobley et al. (1979), Fishbein and Ajzen (1975) and Steers and Mowday (1981). These theories will be presented in more detail. Kasl requested, as early as in 1996 that research should go beyond testing models, and that researchers should look at possible alternatives, even if these alternatives are not formally part of a model or part of a broader formulation (Kasl, 1996). The theory of Psychological Capital developed by Sweetman and Luthans (2010) are therefore included.

Voluntary turnover

Turnover is a phenomenon that all organizations will experience, either the permanent type where the employee leaves the organization, or in form of horizontal mobility i.e. internal turnover between departments (Kirpal, 2004). In terms of the permanent type this can be further divided into two types (Rivai, 2010). Involuntary turnover implies a layoff or firing, while voluntary turnover can be defined as “individual movements across the membership boundary of a social system, which is initiated by the individual” (Price, 1997). Considerable research has been devoted to develop predictive models of voluntary turnover (Tett, Meyer, 1993), and Mobley et al. (1978) proposed a theoretical causal process to explain this type of turnover; First demographic characteristics (e.g. age, tenure) influence an employee’s decision about remaining or leaving a job. Thereafter, job satisfaction impacts a cognitive withdrawal process, and work environment factors that shape the job satisfaction in turn shapes turnover intention. Then, the intention for turnover influences the actual behavior of turnover (Lambert et al., 2001; Mobley, 1977, 1982b; Steel & Ovalle, 1984), which finally makes turnover intention a crucial thought. Traditionally turnover more often than not gets spoken of when the numbers are high. A turnover below 5% can in some cases be a warning, which leaders should look into (Sullivan, 2003). A possible prior warning is the increased use of sick days, especially when it comes to prolonging the weekend (Sullivan, 2000). It is, nevertheless, important to also pay attention when the numbers are low. On the one side, a low voluntary turnover rate can mean that the employees are satisfied with their workplace. On the other side, behind the low numbers it is possible that there is fear of trying something new after many years in the same organization or satisfaction with salary level, or there may be turnover intentions that are not visible to leaders.

Voluntary turnover can lead to both positive and negative outcomes. On the positive side Hollenbeck and Williams (1986) found that 53 % of voluntary turnover is what is called

functional voluntary turnover, where the organization can benefit from an employee leaving the organization. Turnover can be a “necessary evil” for a quick change (Porter & Steers, 1973). A natural change of staff may give an organization the possibility to grow and develop, reach more innovative solutions, expand knowledge and become a healthy organization (Christensen, Aronsson, Borg, Clausen, Gutenberg, Hakanen, Lundberg, & Straume, 2012; Dalton & Todor, 1979). A change of staff dynamic can also lead to a lower propensity of *group thinking* (Janis, 1967; Porter & Steers, 1973). Considering immobility as dysfunctional to innovation, a change in staff would also lead to possible increase of effectiveness (Dubin, 1970). However, in 1992 Levin stated that the negative outcomes of voluntary turnover exceed the positive outcomes (Brorson, 2008). The results from Hollenbeck and Williams (1986) imply that almost half of the voluntary turnover is a non-functional voluntary turnover where the employee who is leaving is a good worker and therefore the turnover is not favorable to the organization. Most of turnover occurs in the first years after recruitment (Mitchel & Braddock, 1994), which means that several of the positive processes mentioned are not in place and the organization will lose the “new” knowledge fast. A second negative side of the turnover process is that the cost correlates with the employee’s tenure (Rivai, 2010), and an estimation of the cost of hiring, training and replacing an employee is around 50 percent of the employee’s annual salary (Johnson, Griffeth, & Griffin, 2000). Knowledge workers like engineers was widely recognized as among the most important organizational members in the marked of the twentieth century (Lee & Maurer, 1997), and still are valuable for today’s labor marked. Losing one of the key members of a team or a senior person who is difficult to replace is not good for an organization (Moynihan & Pandey, 2008). Along with losing an employee comes the loss of knowledge and job experience that the employee will take with them when they quit, and possibly bring into a rival company (Lee & Maurer, 1997). If the management is too focused on running a stable staff they may overlook the possibly negative sides of a too low turnover rate. An example is the low attention to the costs associated with the ones who stay in their job but who have emotionally quitted earlier on (Young, 2008). Employees like this, who does not engage either in their organization or their work tasks may lead to lower productivity as well as limit the organization’s potential because of the lack of motivation. A low turnover rate may imply that some employees do not experience to be challenged in their work, and therefore goes to work without their engagement. To keep a healthy organization it is essential to keep the employees engaged, challenged and provide them with the experience of development in their work (Christensen et al., 2012).

Turnover intention

The voluntary turnover correlates with prevailing turnover models' focus on explaining the employee's motive for withdrawing from the workplace (Rivai, 2010). The intention of quitting may itself have implications for the employees and the organization. The intention may not only influence the employee's work tasks, but also have an impact on the employee's behavior when it comes to job search (Griffeth et al., 2000). Withdrawal cognition drive withdrawal intention, with consequent search decision and the choice of specific job offers from other organizations (Sager, Griffeth & Hom, 1998). Several studies have found that the intensity of the initial turnover intention is positively related to turnover intention measured 4 months later (Brough & Frame, 2004), and 2 years later (Blau, Ward-Cook, & Edgar, 2006). It is also found to positively correlate with actual turnover measured after 6 months (Huffman, Adler, Dolan, & Castro, 2005), 12 months (Allen, Weeks, & Moffitt, 2005) and 18 months (Alexander, Lichtenstein, Oh, & Ullman, 1998). If the intention results in actual turnover, this may also lead to loss of productivity for the organization (Takase, 2010). The human resource employees must manage turnover probabilities so as to fill the recently vacant position quickly (Carmeli & Weisberg, 2007). What makes the interaction between the individual and organizational predicting factors special is the fact that they have a reciprocal relationship, and that in combination they influence the employee's intent to leave a job or not (Peterson, 2004). Several authors have tried to explain why individuals choose to leave an organization, and the link between work engagement, burnout and turnover intention is one of the well-known explanation paths (Bothma & Roodt, 2012). The approach of this study is based on the assumption that turnover is an individual choice of behavior. The best way to prevent unfavorable turnover is therefore to look into the process of intention of withdrawal behavior. By understanding *why* employees quit their job, it is found that 80 % of staff turnover is within the employer's control (Insync Surveys, 2012), which makes it possible to work out ways in how they can retain valuable and skilled employees.

Fishbein & Ajzen: Behavioral intention to turnover

To understand the intention of turnover it is essential to look into what lies behind the behavioral intention itself and how the intention is established. There is most likely a broad support for Brief's (1998) stating that Fishbein and Ajzen's theory of reasoned action is dominating the behavioral intentions literature. Fishbein and Ajzen (1975) developed a model that identifies the distinction between beliefs, attitudes, intentions and behaviors, with a main focus on the relations between the variables. Based on their theory, the single predictor of

individual behavior is the measure of intention to perform the specific behavior. This link is well supported (Abrams, Ando, & Hinkle, 1998; Griffeth et al., 2000; Lee & Mowday, 1987; Michaels & Spector, 1982), which means further support of the link between turnover intention and actual turnover.

Fishbein (1967) early stated that the major determinants of behavioral intention are the attitude towards the behavior itself, together with the individual's perceived subjective norms around him or her. The weight of the two determinants is expected to vary considering the behavior type in question, as well as with the conditions of the action (Fishbein & Ajzen, 1975). Inconsistent relations between some variables and intentions may therefore occur because the employee may or may not consistently consider the normative component of the behavioral intention, or consider his or her beliefs about performing the specific behavior to the same degree as other employees. There are therefore, based on this theory, large variations in how an employee develop turnover intention. The factors contributing to the process of establishing turnover intention may, however, show a pattern among participating employees.

Determinants for turnover intention

Mobley defines turnover intention as “the subjective estimation of an individual regarding the probability that she/he will be leaving the organization she/he works for in the near future” (Mobley, 1982a, 1982b; Mowday et al., 1982). It can also be defined as “[...] the extent to which an employee plans to leave the organization” (Lacity, Lyer, & Rudramuniyaiah, 2008, p.228). The definitions, along with the literature regarding determinants of turnover intention, are multifaceted (e.g. Sager et al., 1998). A multitude of earlier research suggests that particular conditions of employment, like salary and career opportunities are major causes of turnover intention (Iverson & Roy, 1994; Rosse & Miller, 1984, Van Breukelen, 1989). The same is said about the perception of inequity (Geurts, Schaufeli, & Rutte, 1999), or the employee's experience of a “shock”, which is what Lee and Mitchell (1994) call job offers, changes in marital status or firm mergers. One way to look at the determinants of turnover intention is to categorize them according to their effect on the individual, relational and organizational level. To examine the factors predicting employee's turnover intention, it is therefore relevant to divide the factors by these levels. Factors stimulating turnover intention on the individual level is often a result of evaluation of one's experiences in the workplace, which can provoke individual withdrawal cognition and intention to quit (Rivai, 2010). There is especially large support for the link between job satisfaction and turnover intention, job satisfaction being one of the main antecedents

(Mobley et al., 1979; Price & Muller, 1986; Roznowski & Hulin, 1992; Sturman, Trevor, Boudreau, & Gerhart, 2003; Williams & Hazar, 1986). Because of a sparse inclusion of the personal aspects when it comes to turnover intention, Sweetman and Luthers' (2010) psychological capital theory can contribute by looking into how the personal aspect of the employee may influence the employee's turnover intention. When it comes to the relational level social support influence a great deal on turnover intention based on the work of Bakker and Demerouti (2007) and Demerouti and colleges (2001). Another factor that influences turnover intention on this level is leadership, which is found to predict intention to quit (Hughes, Avey, & Nixon, 2010). At the organizational level organizational commitment is well established in the literature of turnover intention, including through numerous meta-analyses together with job satisfaction (Hom & Griffeth, 1995; Steel & Ovalle, 1984; Tett & Meyer, 1993). All things considered one has to explore a large number of factors, both with regards to the individual employee and at the organizational level, to understand turnover intention. And this will be done through the upcoming sections.

Mobley's model of turnover intention. The employee turnover decision process by Mobley (1977) is one of the models that for a long time have contributed to shape the field of turnover intention research, and can be traced back to March and Simon's theory of turnover (1958) and the model of met-expectations and intent to leave by Porter and Steer's (1973). In contrast to March and Simons, however, Mobley describes turnover as a cognitive stepwise sequence, which is particularly sensitive to the individual employee's job satisfaction. Low job satisfaction can stimulate to thought of quitting, leading to evaluation of alternatives, intention to quit, and finally the withdrawal behavior in itself (Mobley et al., 1978). This model is later replicated (e.g. Hom & Griffeth, 1991), and it supports the hypothesis from Fishbein's (1967) behavioral intention theory, as well as the establishment of turnover intention being the immediate precursor of actual withdrawal behavior (Mobley et al., 1978; Price & Mueller, 1986).

Job satisfaction. The concept is generally defined as a "positive or pleasurable emotional state resulting from one's own appraisal of the job or of one's own work experience" (Locke, 1976, p.1300). Brief (1998) defines it more specifically as "an internal state, which is expressed through affective and/or cognitive evaluations of a job experience with some degree of approval or disapproval" (p.86). It thus involves an affective reaction to - and evaluation of - how the work situation and the circumstances satisfy the individual's work values (Freeman, 1978; Mottaz, 1988). The size of the gap between the individual's

expectations and their experience of their work is what determines the degree of satisfaction that is expected to have a predictive effect on turnover intention (Løvland, 1999).

Job satisfaction, an important part of the first step of the model, is the work attitude that has received the most attention in turnover research (George & Jones, 1996). It has been extensively studied both as a dependent and independent variable (Lambert et al., 2001; Mobley, 1977) and it is seen as a trigger to the turnover intention in several models (Mobley, 1977; Hom, Caranikas-Walker, Prussia, & Griffeth, 1992). The concept is seen as one of the situational work factors with the strongest effect on turnover intention (Hamermesh, 2001; Lambert et al., 2001; Mobley, 1977; Porter & Steers, 1973; Price, 1977), as well as moderates the effects of work environment and demographic variables on turnover intentions (Lambert et al., 2001). Employees with low job satisfaction more often plan to change their current job, than those who have medium or high job satisfaction (Kjeldstad & Dommermuth, 2009). Job satisfaction has showed association with turnover intention in studies conducted in over 25 countries (Sousa-Poza & Henneberger, 2004), which provides support for Griffin and Bateman (1986) stating that job satisfaction is a global concept. Job Satisfaction among engineers is also showed to have a strong cross-cultural relation to turnover intention, not only in Europe, but also in Africa and Asia (Dardar et al., 2012; Dickey et al., 2009). Studies conducted on engineers within the oil and gas industry found that their overall job satisfaction resulted, among other factors, from good relations, satisfaction with workload, and good communication among other factors (Dickey et al., 2009). This is comparable with Griffin and Bateman's (1986) under facets of job satisfaction stated as satisfaction with work, pay, benefits, leadership, work conditions and organizational practices. The main focus in research on job satisfaction has increasingly been on the effect of situational factors such as turnover intention (Staw, Bell, & Clausen, 1986).

The Job Demands-Resources Model. Based on the assumptions underlying the JD-R model, there are reasons to believe that turnover intention as an organizational outcome may be in relation to both job demands and resources. This model focuses both on the negative and positive indicators for employee wellness at work, and it is regarded as useful in various professional contexts with regard to employee wellbeing and satisfaction (Bakker & Demerouti, 2007). Considering the importance of running the model on several sets of dependent variables like turnover intention (Bakker, Demerouti, & Euwema, 2005), this model can provide plausible explanations as to why individuals may choose to leave an organization (Bakker & Demerouti, 2007; Bakker et al., 2004). The main assumption is that every occupation has its own risk factors associated with organizational outcomes

(Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). The risk factors are associated with characteristics of work environments, and are incorporated into different types of context dependent job demands and resources. The second assumption is that these categories promote two relatively independent psychological processes. The health impairment process is where high demands lower the employee's mental and physical resources, and the motivational process is where job resources promote work engagement (Demerouti, Bakker, DeJonge, Janssen & Schaufeli, 2001; Schaufeli & Bakker, 2004). The last assumption is that job resources especially affect the employee's motivation and engagement when the job demands are high (Bakker & Demerouti, 2007), and for instance buffer the relationship between job demands and burnout (Bakker et al., 2005). The focus of the present study is not to test the process of the model, but to use the model as a foundation for selection of independent variables with possible predictive effect on turnover intention. One assumption is that both job demands and the selected job resources may directly predict turnover intention, not only indirectly through job satisfaction. However, since which job demands and resources will play a role in specific organizations depends on the specific job characteristics that exist (Bakker & Demerouti, 2007) there is no guarantee that the selected factors will predict turnover intention in the current organization.

Job demands. Job demands refer to physical, social or organizational aspects of the job that require sustained physical and/or psychological effort and are associated with physiological and/or psychological costs. Examples are excessive workload, unfavorable working conditions, time pressure (Bakker & Demerouti, 2007) or complexity and usefulness of obtained knowledge and skills (Skogstad, Knardahl, Lindström, Elo, Dallner, Gamberdale, Hottinen, & Ørehede, 2001). Engineering employees are seen as an occupational group with a high level of job demand considering that most of them have project based work, which may include both large workloads and intense time pressure. It is also assumed that they need constant skill update (e.g. Rowings et al., 1996). It is therefore assumed that job demands may have a positive relation to turnover intention.

Job resources. Job resources refer to physical, social or organizational aspects of the job that a) are functional in achieving work-related goals, b) reduce job demands and the associated physiological and psychological costs, and c) stimulate personal growth and development (Bakker & Demerouti, 2007). Job resources are drawn from the organization, the work itself, and from interpersonal and social relations. They are important when it comes to reducing the negative effects of high job demands, but also in conjunction with Hackman and Oldham's job characteristics theory (1980) they have a motivational potential when it

comes to work tasks in terms of autonomy and feedback. DeCuyper, Mauno, Kinnunen and Mäkikangas (2011) found that job resources relate directly to turnover intention on the note that poor level of job resources makes employees more inclined to have the intention of quitting. Additional research links turnover intention to resources like salary, supervisory support, role clarity, and empowerment (Bakker, Demerouti, Taris, Schaufeli, & Schreurs, 2003; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), as well as the more personal characteristic resource optimism (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). In the present study, the job resources encompass the variables leadership and social support, and the personal resources optimism and self-efficacy. They are believed to have a negative correlation with turnover intention meaning that having work related resources will lower or hinder development of turnover intentions.

Sweetman & Luthans' Psychological Capital Theory. To this day much of the research on turnover intention has emphasized work related characteristics, and in some cases the balance between work and private life. Other factors of importance like the role of employees' personal resources and the role of personal agency are therefore to a certain degree dismissed (Tremblay & Messervey, 2011). Personal resources can be described as aspects of the self linked with resiliency and referring to a sense of control and impact upon the environment (Hobfoll, Johnson, Ennis, & Jackson, 2003), and can be important in determine the employee's adaption to their work environment (Hobfoll, 1989). Findings suggest that resourceful work environment activates employees' optimism and efficacy, which in turn make them feel more capable of controlling their work environment (Luthans, Avey, Avolio, Norman, & Combs, 2006). Optimism and self-efficacy have also been found evident to affect employee's turnover intention (Avey, Luthans, & Jensen, 2009; Xanthopoulou et al., 2007) and together with hope and resilience negatively relate to employees' intention to quit (Avey et al., 2009a). Sweetman and Luthans (2010) introduced the concept of "psychological capital". That includes personal resources such as self-efficacy, optimism, hope and resilience, which may act as a buffer between contextual demands and turnover intention (Bothma & Roodt, 2012). A recent study found job satisfaction in a mediating role between the psychological capital and turnover intention (Lok, 2011), while another study found that psychological capital in fact has a direct negatively relation to intention to quit (Avey, Luthans & Youssef, 2009). By including personal resources in the present study the aim is to expand the understanding of turnover intention, and see how personal resources operate in this cognitive behavior process. In relation to the JD-R model, the assumption is that the feeling of efficacy and optimism will engage and commit

employees to remain in their job (Hackman & Oldham, 1980). The two personal resources included in the present study are therefore optimism and self-efficacy.

Optimism. Optimism refers to a person's tendency to believe that one generally will experience a good outcome in one's life (Scheier & Carver, 1985). Employees who learn how to respond to situations with optimism have greater persistence (Seligman, 1991), and have increasing tendency to take action and deal with threats (Aspinwall & Taylor, 1997) and stress leading to turnover intention (Avey et al., 2009a). Employees will differ in how they perceive potential demanding events at work, but people who score high on optimism and perceived self-efficacy perceive stressful events as less threatening or negative than people who are low in optimism and perceived self-efficacy (Jerusalem, 1993). They are therefore believed to have a higher threshold for turnover intention as well.

Self-efficacy. Bandura and Wood define the concept as "beliefs in one's capabilities to mobilize the motivation, cognitive resources, and courses of action needed to meet given situational demands" (Wood & Bandura, 1989, p. 408). A more general definition of self-efficacy is: "individuals' perception of their ability to perform across a variety of different situations" (Judge, Bono, Erez, & Locke, 1998, p. 170), which may give a greater understanding of an employee's self-assessment of one's competence to deal with a wide range of demanding or novel situations at work (Schwarzer, 1994). Earlier findings with regards to the variable shows that social support is promoting self-efficacy (Lee & Ashforth, 1996), and that that the higher self-efficacy, the lower turnover intention (Luthans, Zhu, & Avolin, 2006). However, earlier research and building of theory on self-efficacy has mainly been context specific to other occupations, which makes it interesting to look at the concept with regard to engineering employees.

Leadership. Leaders are said to influence both employee's job demands and resources (Demerouti & Bakker, 2011). When it comes to the correlations with turnover intention, leadership is proven to have both non-significant (Mobley et al., 1978) and significant correlations with the intention to quit (Hughs et al., 2010). Mulki, Jaramillo and Locander (2006) found that the trust in one's supervisor is a critical component of a climate leading to higher job satisfaction, and lower turnover intention. Later Wells and Peachey (2011) have found that the satisfaction with the leader in general mediated the negative relation between leadership and voluntary turnover intention. A feasible and much used classification of leadership was developed by Burns in 1978, and consists of the categories transformational or transactional leader. A transactional leader focuses on an exchange process between oneself and the employees. They focus on the task and the results, and how

they can get there effectively. On the other hand, a leader who shows transformational leadership is characterized as a supervisor who inspires and challenges the employees, who stimulates them to do their best at work and maximize their performance, and who gives feedback (Avolio & Bass, 2004; Emery & Barker, 2007). This division has been used in much of the leadership research over the years (Dale & Fox, 2008). The transactional leadership appears to have a negative influence on staff retention (Kleinman, 2004), and the transformational leadership type is more associated with employees with low turnover intention (Mulki et al., 2006).

Kennedy (2009) found in interviews that one out of two main factors linked to turnover intention was the failure of leaders to show recognition for different levels of performance, which was found especially applicable to engineers over 40 years of age. Lord and Farrington (2006) supports this by concluding that retention of junior knowledge workers is more related to the material benefits of earning a salary, but the older workers stay because of their sense of pride in their results. Failure by the leaders to provide the necessary recognition to the senior engineers, may contribute to a voluntary career change (Kennedy, 2009). The leadership role is of special importance in project and teamwork. Employees without a superior project leader will experience higher job demands (Hackman, 1986). When employees have to deal with several superiors at the same time, the main leader to whom a team report, is essential to a project's success (Druskat & Wheeler, 2003; Hackman, 1986).

Social support. The definition of social support has shown considerable variation in psychological research, and the definitions are often so vague or broad that the concept almost loses its distinctiveness (Barrera, 1986) and can lead to problems (e.g. Blazer, 1982). The definition, which I find most suitable for the present study, describes social support as “the overall level of social interaction that is available at work, both from colleague and management” (Karasek & Theorell, 1990, p.69). Perceived social support has been shown to work as a buffer against job demands (Karasek & Theorell, 1990), to recruit employees with new skills and resources (Cohen & Wills, 1985), to contribute to the overall job satisfaction (Ducharme & Martin, 2000) as well as to correlate negatively to turnover intention (DeCuyper et al., 2011; Houkes, Jansse, DeJonge, & Nijhuis, 2001; Moynihan & Randey, 2007; Pomaki, DeLongis, Frey, Short, & Woehrle, 2010). The experience of a friendly workplace (Bertelli, 2007) and satisfaction with coworkers (Golden, 2007) are both negatively associated with turnover intention, and replicated in later studies (Regts & Molleman, 2013). When it comes to the social support through the leader-employee

interaction, this is through meta-analysis showed to be the more precise aspect to predict voluntary turnover (Griffeth et al., 2000; Hom & Griffeth, 1995), which could therefore in addition be important for the turnover intention. In the present study the social support comprise of both the support one gets from family and friends and co-workers, and the support one gets from one's supervisor and day-to-day superior. These are all under facets of social support that are shown to be antecedents of intention to leave a job as among computer professionals (Lee, 2004), and are therefore expected to have a negative predictive effect on turnover intention.

Organizational commitment. Even though Mobley (1977) did not include organizational commitment in his studies of turnover intention, job satisfaction is suggested to be a causal antecedent of organizational commitment (Morrison, 2004; Porter, Steers, Mowday, & Boulian, 1974; Steers, 1977), and commitment is found to be correlated to voluntary turnover (DeCotiis & Summers, 1987). Both job satisfaction and organizational commitment are affective responses, but while job satisfaction focuses on the work environment and the satisfaction in response to specific aspects of the job, organizational commitment focuses on the attachment to the organization as a whole (Lee, 2000; Williams & Hazer, 1986).

Organizational commitment can be understood in several ways, but the possibly most cited operationalization of the concept is the one developed by Meyer and Allen (1990), which describes organizational commitment as a psychological state operationalized into three different under facets (Allen & Meyer, 1990, 1996; Meyer & Allen, 1997). The facets are the employee's identification with the organization (the affective commitment), the employee's involvement in the organization (the continuance commitment) and the employee's loyalty and obligation to the organization (the normative commitment), which together influence an employee's turnover intention (Jaros, 1997). A recent meta-analysis revealed that out of the three, affective commitment was the strongest predictor of overall withdrawal thoughts (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002), as well as being the only significant predictors of an intention to quit (Whitener & Walz, 1993). According to Meyer, Allen and Smith (1993): "Employees with a strong affective commitment remain with the organization because they want to, those with a strong continuance commitment remain because they need to, and those with a strong normative commitment remain because they feel they ought to" (p. 539). DeCotiis and Summers (1987) and Meyer and Allen (1997) are two of the few studies that have directly examined the relationship between organizational commitment and turnover behavior. Both studies found a negative correlation between the

two. Other turnover-related intentions have also showed high correlations with organizational commitment (Bakker, Demerouti, & Schaufeli, 2003), e.g. intention to search for job alternatives ($F = -.60$) and intention to leave one's job ($F = -.46$) (Mathieu & Zajac, 1990). A study conducted on four different samples of bank employees was able to replicate organizational commitment's indirect effect on turnover intention through job satisfaction in all samples (Van Dick, Christ, Stellmacher, Wagner, Ahlswede, Grubba, Hauptmeier, Höhfeld, Moltzen, & Tissington, 2004). This demonstrates the close relationship between the two concepts job satisfaction and organizational commitment and their effect on turnover intention. Earlier research also found that the greater the satisfaction and the higher the commitment level, the less likely it is that the employee will develop turnover intention (Igarria & Siegel, 1992; Martin & Roodt, 2008).

Sickness absenteeism. There are no shortage of research linking psychological work variables with organizational outcomes like sickness absenteeism and turnover. It is believed that if an employee experience high levels of job demands and other strains from the workplace, this will lead to high levels of absenteeism, which may in turn result in turnover. A study conducted of Morrow, McElroy, Laczniak and Fenton (1999) showed that sickness absenteeism was positively related to voluntary turnover, which is also found between sickness absenteeism and turnover intention (Borda & Norman, 1997). There are, however, few other studies that have examined the relationship between absenteeism and turnover intention in particular. Ferris (1987) found sickness absenteeism to be correlating with the intent to leave, but that the relation was a function of tenure as a moderator. Ferris found, nevertheless, that employees with low tenure who where frequently absent tended to be less inclined to leave, while employees with high tenure who were frequently absent reflected a stronger inclination to leave the organization. Albion, Fogarty, Machin and Patrich (2008) did not find any relation between absenteeism and turnover in their study, but if taken into account their measurement of absenteeism, this may be caused by the use of an index covering both the frequency and the length of absenteeism. While a measure of the length of absence for every time of absence is a measure of health concerns, and therefore correlated with burnout (Bakker, Demerouti, DeBoer, & Shaufeli, 2003), Bakker and colleges stated that the measure of frequency of absence from work is a measure of withdrawal behavior. By combining these two types of measures, this may explain the lack of correlation between absenteeism and turnover.

A study of Norwegian employees shows that 80 % of all employees will be absent less than 1 % of their working days due to infections and virus diseases, also called

“everyday diseases” (Markussen, Røed, & Røgeberg, 2011). There are few signs of an aggravated psychosocial and physical work environment in the labor market. The sickness absenteeism level in Norway is, nevertheless, high (Arbeids- og Sosialdepartementet, 2000). In regard to the earlier research the employees’ sickness absenteeism is believed to correlate positively with turnover intention.

Tenure. Tenure and turnover intention have been found to correlate both negatively (Chiu & Francesco, 2003; Igarria & Siegel, 1992; Porter & Steers, 1973; Price, 1977) and positively (Jacobs, 2005; Lum, Kervin, Clark, Reid, & Sirola, 1998). Other scholars have also found that tenure is not a predictor for turnover intention (Griffeth et al., 2000). Bedeian, Ferris and Kacmar (1992) suggested, however, that prestige and confidence are likely to increase with age, and that middle age employees generally engage in behavior that encourages stabilization. As tenure increases within an organization, so may the potential for formal and informal benefits (Hellman, 1997). This is supported by Mobley et al. (1978) who earlier suggested that older employees with longer tenure will have lower turnover intention because they are more satisfied with their work than younger, but also because they perceive a lower probability of finding an acceptable alternative. This is recently supported by Lee et al. (2009) and DeCuyper et al. (2011), where both studies found that younger employees and employees with less tenure were more likely to express greater turnover intention than older employees with more tenure. It was also found that employees with tenure of 0-3 years have the strongest turnover intention (Lee et al., 2009), and employees with fewer than ten years of tenure had higher turnover intention compared to those with ten years or more (Hellman, 1997; Igarria & Siegel, 1992). Considering that Igarria and Siegel (1992) also found that turnover intention have a direct effect on job satisfaction and organizational commitment among engineers, there is reason to believe that the present study will find a relation between tenure and turnover intention.

Age. Companies that mainly comprise of engineers are about to experience a change in the staff structure. The employees, who took their engineering education in the early days of “the Norway’s Oil adventure” i.e. the sixties and seventies, are now getting old and will therefore soon be thinking of retirement. These organizations will therefore have to recruit large numbers of newly educated engineers to take their place when they retire. A review of the literature has shown that age-related differences exist for a number of work attitudes and behaviors, among them turnover intention. Older employees were more satisfied and committed to their job than younger employees (Rhodes, 1983). The fact that age has a positive effect on job satisfaction (Rhodes, 1983; Reiner & Zhao, 1999; Wang, Tao,

Ellenbecker, & Lui, 2012) is especially visible in Siassi, Crocetti and Spiro (1975) findings stating that workers over 40 years of age - regardless their tenure - have higher levels of job satisfaction than those under the age of 40. Considering the findings of a correlation between turnover intention and job satisfaction it is no surprise that research also show that the turnover rate for older employees is lower than for younger employees (Cho & Lewis, 2011; Smith & Hoy, 1992).

Age correlates negatively with turnover intention (Lambert & Hogan, 2009; Porter & Steers, 1973; Wang et al., 2012). Lee et al. (2009) found that the age group 20-34 in particular showed the strongest turnover intention. This may be explained by the fact that younger employees are less likely to have found a good person-job fit or person-organization fit, making them more willing to seek other jobs (DelCampo, 2006; O'Reilly, Chatman, & Caldwell, 1991). The time to amortize the cost associated with a job change also decreases with age, which will make a job change less attractive for older employees (Sousa-Poza & Henneberger, 2004). Younger knowledge employees were found to retain because of their fixation on payment and recognitions for one's work, while older workers remain in a job because of enjoyment and the feeling of pride in what they do (Lord & Farrington, 2006). Senior engineers (i.g. over 40 years of age) are, however, reported to look for other jobs despite having no intention to quit the current job. This is because they perceive to be easily replaceable by younger graduates who can work for a lower salary (Kennedy, 2009). The most likely causes of turnover intention may depend upon the age of the employee. Age seems to affect what individuals value in a job or an employer, the employee's expectations regarding one's future within one's organization, and how central one experience the work at the particular stage in one's life (Finegold, Mohrman, & Spreitzer, 2002). This substantiate Moynihan and Landuyt (2008) life cycle stability hypothesis which claims that older and more settled employees are more likely to have familial obligations which in turn makes them less likely to quit.

Given that the older employees will have a dominant role in the labor marked over the next two decades (Ng & Feldman, 2008) it is essential to acquire a better understanding of the possible age differences in the impact of psychosocial work environmental factors. The fact that there are somewhat inconsistent findings on the topic consequently made me more interested in age differences. Based on Ng and Feldman's recent review on age differences where older workers were defined as those who are at the age of 40 or above, I chose to extend the scope of the current study to look at the employees above the age of 40, compared to the reference group- employees who are younger than 40 years. This is found to be an

acceptable cutoff considering that the active workforce is typically 16-65 years old (Ng & Feldman, 2012).

Hypotheses

To the extent that specific aspects of a job held by an engineer contribute to the level of turnover intention, and these aspects are within the control of the organization, retention levels could be increased through appropriate actions designed to minimize the employees' turnover intention. However, if these aspects are outside the organization's control, this will not be possible. Based on the presented research and theories, the present study has been focusing on the following variables and the following hypotheses for the relationships between the variables and the organizational outcome turnover intention.

- H1:** Job satisfaction will be negatively correlated to turnover intention. The lower level of job satisfaction, the higher predicted turnover intention.
- H2:** Job demands will be positively correlated to turnover intention. The higher level of experienced job demands, the higher predicted turnover intention.
- H3:** Leadership will be negatively correlated to turnover intention. The lower level of the experience of a good leadership, the higher predicted turnover intention.
- H4:** Social support will be negatively correlated to turnover intention. The lower level of experienced social support, the higher the predicted turnover intention.
- H5:** Organizational commitment will be negatively correlated to turnover intention. The lower level of organizational commitment, the higher predicted turnover intention.
- H6:** Self-efficacy will be negatively correlated to turnover intention. The lower level of self-efficacy in one's job, the higher predicted turnover intention.
- H7:** Optimism will be negatively correlated to turnover intention. The lower level of optimism, the higher predicted turnover intention.
- H8:** Sickness absenteeism will be positive correlated to turnover intention. The higher the use of sickness absenteeism, the higher predicted turnover intention.
- H9:** Tenure will be negatively correlated to turnover intention. The lower the tenure, the higher predicted turnover intention.
- H10:** Age will be negatively correlated to turnover intention. The senior employees will have lower predicted turnover intention than the younger employees, which mean turnover intention predictors will vary depending on which age group the employee belongs to.

Method

This chapter introduces the methodology of the present study. The first section introduces the organization in question and the procedure of data collection and the sample. The second section addresses the survey measurement, followed by section three with a presentation of the variables and their validity. The final section sums up the chosen statistical analysis, the following procedure and research ethics.

Background

The intention of the present study was to investigate which factors that could predict an engineering employee's turnover intention. The study covered the factors job demands, job resources like organizational commitment, leadership, social support, job satisfaction and personal resources like optimism and self-efficacy. The selection of factors was based on Fishbein and Ajzen's (1975) and Mobley's (1977) theories, Sweetman and Luthans (2010) concept of psychological capital, as well as the original framework of the job demand-resources model (Bakker, Demerouti, Taris, Schaufeli & Schreurs, 2003; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), a model where turnover intention as a dependent variable and personal resources as moderators are required inclusions (Bakker et al., 2005; Tremblay & Messervey, 2010).

Information about the organization

The sample was obtained from an organization comprising of 800 engineers from various nations, located in Oslo. The company is a leading technical consultancy, providing front-end studies, engineering, procurement and project management services for the oil and gas industry, both onshore and offshore. The organization seeks to contribute with new technology and products, along with new knowledge and methods for an environmentally friendly exploitation of the oil and gas reserves. This leads the organization to work with employees who are both permanent based employees, and project based consultants. Because of this division of employment types, the organization has a distinctly hierarchic leadership and management structure.

When it comes to the organizations turnover rates, the numbers for the last 12 months as per July 2013 showed a voluntary turnover rate of 6.19 % and 5.20 % in the two different business units represented in the present study. The total turnover, which includes those who reached retirement age or died, was at 7.43 % and 6.36 %. Hom & Griffeth (1995) conducted a meta-analysis of studies examining the relationship between voluntary turnover and 35 possible antecedents, and found that intentions to quit had the strongest relationship to actual voluntary turnover. Based on the findings of the relation between turnover intention and

voluntary turnover, it was feasible to believe that the levels of turnover intention in this organization would be low.

Sample

The sample was selected on basis of convenience considering the rush of ongoing work projects in the organization. Table 1 displays the descriptive statistics of the sample. The average respondent was male (72.5 %), with an average age within 30-39 years (SD = 1.24), and with a master. Minding the gender distribution, the sample showed a normal distribution when it comes to similar companies with more than 100 employees, but less than 1000 (Lotherington, Alteren, & Moilanen, 2006).

Table 1: Distribution of respondents

Variable	Category	Frequency	Percentage
Sex	Man	103	73
	Woman	38	27
Age	Under 30	17	12
	30-39	39	28
	40-49	38	27
	50-59	26	18
	Over 60	21	15
Education	Bachelor	43	30
	Master	82	58
	PhD	9	6
	Other	8	6
Sickness absenteeism	No	50	35
	Yes	92	65
Tenure	<1	12	9
	1-5	50	35
	5-10	23	16
	10-15	22	16
	>20	35	24
Work experience	<1	2	1
	1-5	19	13
	5-10	22	16
	10-15	37	26
	>20	62	44
Managerial position	Yes	41	29
	No	101	71
Position type	Project-based	104	73
	Permanent	38	27

Note: N = 142. Age, tenure and work experience are presented in years. Yes for sickness absenteeism indicate one day or more.

The average employee had worked in the organization for 1-5 years ($SD = 1.35$), with work experience of 20 years or more ($SD = 1.12$), and with one or more days of sickness absenteeism during the previous 12 months ($SD = .47$). The two business units represented in the sample were both adequately represented, with approximately 50 % employees from each business unit. The respondents were both from project-based (73 %) and base (27 %) employment, and consisted of employees from both managerial (47 %) and non-managerial positions (53 %).

Procedure

The first meeting with the organization was in January 2013, with two employees from the HSE unit. After receiving approval for the study, a fellow MS student, Mille Myhre, joined the project. Thereafter we had three informal meetings to receive information regarding the company and their employees, which lead us to designing the questionnaire and deciding on the course of the study.

Before the questionnaire was distributed to the employees, it was tested on five people. These individuals were two engineering students from NTNU, and three employees from the company management. The pilot subjects spent about 10 minutes to complete the survey, which was an adequate time. Considering that we were going to conduct the survey on an engineering staff with a tight schedule, it was essential that we made a brief, but comprehensive, survey.

Upon receipt of permission from the CEO of the organization and the approval of The Norwegian Social Science Data Services (See Appendix C), we asked a sample of the employees ($N=280$) to participate in the study. The modified, final questionnaire was distributed through an e-mail that was sent from the leaders of the different business units to their employees (See Appendix B). The e-mail briefly described the purpose of the project in which they were requested to participate in. An assurance that participation was voluntary and that the subject had the possibility to withdraw from participation at any time, was also included. A link to an electronic questionnaire was included in the e-mail, which made it easy for everyone to answer from any location. By submitting the survey, the respondents agreed to participate in the study.

The data was collected during one week in the fall of 2013. In total 280 surveys were distributed, and 196 of them were returned. The final random sample which was used in the regression analysis, however, consisted of 128 participants because of some incomplete questionnaires, and some questionnaire links that were just opened, but not conducted. That

represents an answer rate of 45.7 %, which is considered a good rate (Grady & Wallston, 1988).

Materials

The questionnaire was designed by Mille Myhre and myself, and consisted of various parts from already validated questionnaires (See Appendix A). It was important to include many variables, since we were two students working with different research questions. In total the questionnaire consisted of 36 questions covering 17 variables, supplemented by an open-ended data field where the employees could add their own questions or comments about the survey. The variables were personal background variables and work characteristics (i.e. tenure, work experience, department of employment, managerial position, and employment type), job demands, leadership, social support, organizational culture, job commitment, role expectations, mastery of work, work motives (Skogstad et al., 2001), trust (Pejtersen, Kristensen, Borg, & Bjørnar, 2010; Skogstad et al., 2001) work engagement (Schaufeli & Bakker, 2003; Schaufeli & Bakker, & Salanova, 2006), optimism (Scheier, Carver, & Bridges, 1994), self-efficacy (Schwarzer & Jerusalem, 1995), general health (Aronsson & Lindh, 2004), turnover intention (Rooth, 2004; Nadler, Jenkins, Cammann, & Lewler, 1975), and job satisfaction (Hackman & Oldham, 1975). A large part of the questionnaire was similar to QPS Nordic, which has been tested frequently and validated by STAMI among others (Skogstad et al., 2001). When it comes to the other indexes they are all used in earlier research, and showed good signs of validity. Based on the theoretical approach of the present study, not all topics are covered. The present study focused on the factors presented in the upcoming section.

Bearing in mind that some of the indexes and questions (i.a. general health) only existed in Norwegian, we got two fellow students to translate these into English, and two other fellow students to translate them back to Norwegian. We used the English translation that showed the least discrepancy between the original Norwegian sentence and the translated one.

Background variables

The demographic variables was gender (male = 0, female, 1), and age divided in categories of “under 30”, “30-39”, “40-49”, “50-59”, “over 60”. Age was dummy coded into a dichotomy variable (below 40 = 0, above 40 =1). Tenure was measured by asking employees to indicate how long they had been working for the organization, in the categories “under a year”, “1-5”, “5-10”, “10-20”, “20 years or more”. Data about the employees’ sickness absenteeism was obtained from a single validated item asking the employee to

indicate the total number of days of sickness absenteeism during the last 12 months (Aronsson & Lindh, 2004). The answer alternatives were “never”, “1 day”, “2-5 days”, “5 days or more”.

Dependent variables

Turnover intention. The outcome variable was measured using three items from Roodt (2004) questionnaire, and two rephrased items from Nadler, Jenkins, Cammann and Lawler’s (1975) Michigan Organizational Assessment Package. The motivation for putting together a new turnover intention index was that most instruments in the literature measure turnover intention on only a relatively small number of items within the same aspect of the behavior. Some researchers have used a single item scale (Guimaraes, 1997; Lambert, Hogan, & Barton, 2001), while only a few studies have used more than three items (Becker, 1992; Lum et al., 1998; Roodt, 2004). We wanted to broaden the focus to a more comprehensive meaning of turnover intention, and cover two perspectives of the phenomenon. We were able to look into the specter of the last 9 months period, with questions like “During the last 9 months, how often have you considered leaving your job?”. The answer was indicated on a 5-pointed answer scale going from always to never. This gave strength to the variable index through inclusion of a specific time frame to which the measure applies, recommended by Hom and Griffeth (1991). We were also able to explore the mindset around the thought of a new job in general by giving statement such as “I think I will be working in this organization five years from now” and “I rarely think about applying for a new job in a different company” with a 7-pointed answer scale with a range from totally disagree to totally agree. Four statements were reverse-scored so that the greater the score, the greater the turnover intention. Considering the two different answer scales the variable was converted to z-score. The Cronbach’s Alpha showed a value at .69, which is lower than the only accessible comparable alpha value showing an alpha of .80 (Bothma & Roodt, 2012). With a lower number of items the alpha value would automatically decrease, however, the value was indeed close to the accepted value of .70 (Field, 2009).

Independent variables

Job demands. Job demands were measured by a validated index from QPS Nordic. We chose 7 items that covered quantitative, decision and learning demands. An example of a question is “Does your work require quick decisions?”. The answer was indicated on a 5-point Likert answer scale from “Very seldom or never” to “Very often or always”. The variable had a Cronbach’s Alpha of .77, compared to the alpha value of .67 for the total of 10 items in QPS Nordic (Skogstad et al., 2001).

Job satisfaction. The concept was measured with three items from Hackman and Oldham's (1975) model for Job Characteristics. Respondents were to indicate to what degree they are satisfied with their work situation all things considered, by answering on a 5-point Likert scale from "Very dissatisfied" to "Very satisfied". The two remaining questions addressed the employee's wish to choose the same workplace with regards to what they to this day know about their job, and if they would recommend the job for others. Here the answer scale was a 5-point Likert scale from "Yes" to "No". Two questions were reverse-scored so the greater the score, the greater the job satisfaction. The variable had a Cronbach's Alpha value of .50, which was fairly low compared to other studies that showed an alpha of .71 (Igarria & Siegel, 1992). This may be explained by the usage of only a small selection of the items from Hackman and Oldham's scale. Since by adding additional items one would have automatically increase the alpha value (Field, 2009), which can explain the higher level of alpha in the study of Igarria and Siegel (1992). However, Field (2009) states that the diversity of measurement constructs sometimes may show levels lower than the accepted value of .70. In this case merely using the single item covering the overall job satisfaction of the employee could raise the value to .88. But the three-item variable was used to keep the variable's width, the importance of the questions based on the more specific satisfaction of the work situation, and the validation of Hackman and Oldham's (1975) scale. Considering the two different answer scales also this variable was converted to z-score.

Leadership. The leadership variable consisted of empowered leadership and the conception of a fair leadership from QPS Nordic. One of the eight questions was "Do your immediate superior encourage you to participate in important decisions?" with the opportunity to answer "Very seldom or never" to "Very often or always", on a 5-point Likert scale. One item concerning the relation to the day-to-day superior was reverse-scored so that the greater the score, the better leadership experience. The variable had a Cronbach's Alpha of .78, which was in line with the alpha of .80 in QPS Nordic (Skogstad et al., 2001).

Social support. Questions included for social support covered both support from co-workers, supervisor and from friends and family. All questions were taken from QPS Nordic. One example is "If needed, can you get support and help from your co-workers?" with the 5-point Likert answer scale from "Very seldom or never" to "Very often or always". The variable's Cronbach's Alpha was .74 for five items, compared to an alpha of .79 for the full item scale in QPS Nordic (Skogstad et al., 2001).

Organizational commitment. This variable was measured using the three items for commitment to the organization, from QPS Nordic. The items consisted of statements like

“My values are very similar to the company values”, with the answer alternatives on a 5-points Likert scale ranging from “Strongly disagree” to “Strongly agree”. This questionnaire have been widely used, and showed a Cronbach’s Alpha of .75, compared to .77 in QPS Nordic (Skogstad et al., 2001).

Personal resources. Personal resources generally consist of several different variables, which together explain a person’s resiliency (Hobfoll, Johnson, Ennis & Jackson, 2003). Based on earlier research and the theory of Sweetman and Luthans, however, we chose to focus on two of the variables, namely optimism and self-efficacy.

Self-efficacy. Ten parsimonious domain-specific items from The General Self-Efficacy Scale (GSE) were used to broadly measure the employee’s perceived self-efficacy (Schwarzer & Jerusalem, 1995; Schwarzer, Bähler, Kwiatek, & Schröder, 1997). The statements were such as “I can always manage to solve difficult problems if I try hard enough”, and the employee answered on a 4-point Likert scale ranging from “Not at all” to “Exactly true”. The Cronbach’s Alpha in this sample was .86, compared with earlier reported levels of .80 (Schwarzer & Jerusalem, 1995).

Optimism. Three items from the Life Orientation Test (Scheier et al., 1994) have been found to be a good measure for differences in generalized optimism and positive expectations of the future (Christensen et al., 2012). The respondents were asked to indicate their degree of agreement with statements such as “Overall, I expect more good things to happen to me than sad”, using a 5-point Likert scale ranging from “Strongly disagree” to “Strongly agree”. Since the statements were all positively phrased items, the higher the optimism score represents the greater optimism. The index had a Cronbach’s alpha of .83, compared to the earlier found alpha of .82 (Scheier & Carver, 1985).

Validity and reliability

The index variables were evaluated for internal consistency by Cronbach’s alpha to ensure reliable indices (Cronbach, 1951). If a scale has high internal consistency it is psychologically interpretable (Field, 2009). All indices used in the present study are taken from already validated measures, with the exception of the mentioned items of turnover intention that we made to better fit this specific organization. Overall, the Cronbach’s alpha ranged from .73 to .86, disregarding the alpha of .50 for the Job Satisfaction variable (See Table 2). There should therefore be no reason to believe that these indices are not reliable.

Statistical analyses

All quantitative statistical analyses were conducted with the standard SPSS software program (version 20.0). Inversely worded items were reversed and missing items were

imputed prior to the analyses. The study allowed for missing items where more than half of the variables were completed, and where the missing value was replaced with the serial mean calculated from the other values of each respondent within the variable. Since the lack of responses did not show any patterns in the overall data, there is no reason to believe that the removal would create an impact on the further analysis.

T-test. An independent sample t-test was conducted for the outcome variable to explore if there were actual differences between employees under the age of 40 and over the age of 40.

Linear multiple regression analyses. Multiple regression analyses were conducted to examine to what degree the independent variables could predict levels on the dependent variable. A hierarchic entry in a block analysis was conducted to see which changes would appear for every new block. This is usually done to test theoretical models, but in our case it was used to see if, for example, personal resources could predict turnover intention. A significance level (p) of lower than 5 % ($p < .05$) was required to consider the relations in the multiple regressions to be significant. One needed to have $N > 50 + 8m$, where m is the number of independent variables, to be able to include several independent variables (Field, 2009). This was not a problem in this case.

To conduct multiple regression analyses, it was necessary to check for possible violations of the assumptions underlying the use of the method. It was essential to have a large enough sample taken into consideration that the estimate of R in the regression is dependent on the number of predictors and the sample size. The requirements of $N > 50 + 8k$ (Field, 2009) and a ratio of 10 to 1 (Howell, 2010) were met with a sample of 128. The alpha values indicated satisfactory levels of internal consistency reliability among the multi-item scales (Nunnally, 1978), and there were no problem posed by multicollinearity. Independent errors, linearity and homoscedasticity all looked adequate. Tenure, leadership, job satisfaction and social support, however, violated the normal distribution with a skewness value over 1. The job satisfaction may have violated the criteria because of its low alpha value, but considering that both job satisfaction and the other mentioned variables were independent, some skewness could appear because of the specific sample's characteristics. Converting the variables from mean to z-score was done to help on the matter, but that did not show any differences on the skewness. Nevertheless Lewis-Beck (1980) points out that if this particular assumption is not met, this is not critical *if* the sample size has an approved size, which it has.

Implementation. Descriptive analyses and correlations between all variables were conducted prior to the multiple regression analysis. The first step consisted of the control variables, followed by tenure in a separate step. This was done to make visible tenures impact separated from the age variable. Step three consisted of job satisfaction alone because of the shared variance between job satisfaction and organizational commitment in earlier research. This way the job satisfaction's possible distinct contribution would be visible. Thereafter organizational commitment, social support job demands and leadership were inserted into the analysis, followed by self-efficacy and optimism in the last step. The second multiple regression analysis was conducted running a split data on the age variable to see if the predictors for turnover intention would present themselves differently for the two age groups split at the age of 40. The results are presented in the upcoming chapter.

Research ethics

The right of employees to decline the participation of the research project is among the ethical concerns in organizational research. Another one is ensuring the participating employees the confidentiality of responses. The project was reported and approved by "Personvernombudet for forskning", the Norwegian Social Science Data Services (NSD). Their approval letter can be found in Appendix C.

Results

The descriptive statistics are presented followed by correlation analysis for the relationship between the dependent variable and the independent variables. Thereafter the two multiple regressions are presented in separate tables.

Descriptive statistics

Table 2 presents the descriptive statistics and Cronbach's Alpha for the different variables. All indexes had satisfying alpha values, and the variable index with the highest internal consistency was optimism with an alpha value of .83.

Table 2: Descriptive for independent variables

Variable	N	Min	Max	Mean	SD	a
Turnover intention	142	1,40	6,00	2,97	.81	.685
Job demands	141	2,43	5,00	3,92	.51	.770
Org. commitment	140	2,33	5,00	3,92	.57	.746
Social support	141	1,00	5,00	4,25	.64	.733
Leadership	142	1,22	5,00	3,76	.58	.778
Optimism	142	2,00	5,00	3,83	.63	.825
Self-efficacy	142	2,10	4,00	3,21	.38	.789
Job satisfaction	131	3,00	5,00	4,58	.40	.500

Note: a = Cronbach's Alpha Value

The mean perception of the different variables seemed to be ranging from the middle of the index to the higher end. Turnover Intention appeared to be approximately centered on the middle of the scale ($M = 2.97$, $SD = .81$), meaning that the average employee seems to sometimes be thinking of changing their job, but neither agreeing or disagreeing when it comes to actually thinking about applying for another job. Job demands were somewhat high ($M = 3.92$, $SD = .51$) saying that the average employee quite often experiences his or her job demands as high. Job satisfaction ($M = 4.58$, $SD = .39$), organizational commitment ($M = 3.92$, $SD = .57$), leadership ($M = 3.76$, $SD = .58$) and social support ($M = 4.25$, $SD = .64$) showed high values. This means that the average employee rather often experience social support both from co-workers, superior and family and friends, feels committed to the organization and what it stands for, and overall feels satisfied with the work situation and the job in general. Finally, optimism ($M = 3.83$, $SD = .63$) and self-efficacy ($M = 3.20$, $SD = .35$) were found to be rather high, which means that the average employee experience oneself as meeting situations with positive outlook and experiences moderate self-efficacy with work tasks.

Table 3: Correlations between variables, Pearson's r

	1	2	3	4	5	6	7	8	9
1. Turnover intention	-								
2. Sickness absenteeism	.305**	-							
3. Job satisfaction	-.468**	.062	-						
4. Org. commitment	-.400**	.020	.393**	-					
5. Job demands	-.366**	-.098	.232**	.422**	-				
6. Social support	-.356**	.017	.387**	.403**	.192*	-			
7. Leadership	-.482**	-.075	.389**	.399**	.401**	.589**	-		
8. Self-efficacy	-.104	-.049	.087	.307**	.214*	.211*	.240**	-	
9. Optimism	-.223**	-.234**	.152*	.299**	.359**	.077	.323**	.283**	-

Note: N= 141, * p< .05, **p< .01 (Two-tailed)

The Pearson product-moment correlations for the current sample are presented in Table 3. According to Cohen (1992) the effect size of correlation coefficients (r) are $r = 0.1$ for small, $r = 0.3$ for medium and $r = 0.5$ for large. As expected based on earlier research, sickness absenteeism ($r = .31, p < .01$), job satisfaction ($r = -.47, p < .01$), organizational commitment ($r = -.40, p < .01$), social support ($r = -.36, p < .01$), and leadership ($r = -.48, p < .01$) showed medium to large correlation with turnover intention. It is somewhat surprising, however, that leadership had a stronger correlation with turnover intention, than job satisfaction. Another noteworthy feature was the lack of correlation between self-efficacy and turnover intention, while optimism showed a quite small negative correlation ($r = -.22, p < .01$). Despite the absence of correlation between the dependent variable and the self-efficacy variable, both personal resources were included in the further analysis because of the research support for both variables in relation to turnover intention.

Multiple regressions analyses

A stepwise hierarchic multiple regression model was performed to assess the predictors for the employees' intention to quit their jobs, while controlling for the influence of age, gender, sickness absenteeism and tenure. The analysis allowed us to conduct a causal logic, but there could not be a prediction of the direction of the relationship because of the methodological limitations (Aarø, 2007). An additional regression analysis was conducted to examine if the predictors influence employees under and over the age of 40 differently.

The main regression analysis. The results from the first multiple regression analysis are presented in Table 4, with the significance level of .05 and .01, which implies that the null hypothesis is rejected and that there is 95 % and 99 % certainty that the presented results is not a result of chance alone. Based on the significant blocks, the model in total accounted for 45.1 % explained variance in turnover intention, with shrinkage of 5.2 % ($\Delta R^2 = .399$). First block consisting of the demographical variables age, gender and sickness absenteeism explained about 13 % ($R^2 = .13$), $F(3,124) = 5.99, p < .001$ of the variance in the dependent variable. Block two including tenure increased the explained variance with 0.1 % ($R^2 = .13$), but was non-significant. Block three consisted of the most frequently showed contributor to explain turnover intention, job satisfaction, which raised the explained variance to 34.2 % ($\Delta R^2 = .32$), $F(1,122) = 39.67, p < .001$. By including job demand, social support, organizational commitment and leadership in block four, the explained variance raised further to 45 % ($\Delta R^2 = .41$), $F(4,118) = 5.83, p < .001$. The final block consisted of the new variables to the field, namely optimism and self-efficacy. These however only increased the explained variance with 0.1 % ($R^2 = .45$), but the model was non-significant.

Table 4: Summary of Hierarchical Regression Analysis for Variables Predicting Turnover Intention (N = 128)

Independent Variable	Block 1	Block 2	Block 3	Block 4	Block 5
	B	β	β	β	β
Age	-.230**	-.205*	-.126	-.055	-.056
Sex	-.133	-.133	-.051	.048	.045
Sickness absenteeism	.216*	.216**	.263***	.287***	.286***
Tenure		-.044	-.089	-.093	-.091
Job satisfaction			-.474***	-.321***	-.318***
Org. commitment			-.085	-.085	-.091
Leadership			-.241**	-.241**	-.239*
Social support			-.081	-.081	-.085
Job demands			-.080	-.080	-.078
Self-efficacy				.022	.022
Optimism					-.008
R ²	.127***	.128	.342***	.450***	.451
Δ R ²	.105***	.100	.315***	.409***	.399
F for change in R ²	5.9900***	.186	39.665***	5.828***	.042

Note: Gender. 0 = male, 1 = female, Age. 0 = > 40 years, 1 0 < 40 years. *p < .05 **p < .01 ***p < .001

Considering the hypotheses presented earlier, only three hypotheses were supported. Hypothesis H1 was supported, stating that job satisfaction is negatively related to turnover intention. Job Satisfaction showed significant contribution in both block three ($\beta = -.487$, $p < .001$), four ($\beta = -.307$, $p < .001$), and five ($\beta = -.322$, $p < .001$). Hypothesis H3 was also supported, stating that leadership has a negative relation to turnover intention. Leadership showed significant contribution in block four ($\beta = -.243$, $p < .05$) and five ($\beta = -.242$, $p < .05$). The last supported hypothesis was H8, stating that sickness absenteeism is positively related to turnover intention. Sickness absenteeism showed significant contribution in all blocks, ranging from a beta of .229 ($p < .05$) in block one to .292 ($p < .001$) in block five. The remaining hypotheses were not supported, which implies that job demand (H2), social support (H4), organizational commitment (H5), self-efficacy (H6), optimism (H7) and age (H10) did not show significant contribution to predicting turnover intention. These variables were therefore excluded from the further analysis.

Age split data. Despite the fact that the dichotomy age variable did not show significant predictive ability throughout the regression model, it was found significant in step 1 and 2. Having in mind that a regression analysis is unable to show for indirect effects and what the presented literature and theory are stating about age differences in turnover intention among employees, an independent sample T-test was conducted to explore if there would in fact be a significant difference between employees divided into two age groups. As presented in Table 5, the t-test found significant differences in turnover intention for employees under the age of 40 ($M = 3.22$, $SD = .841$) and above ($M = 2.81$, $SD = .752$); $t(140) = 3.04$. The employee's under 40 years of age stated to have a level of turnover intention ranging from 1.80 up to the scale's maximum value of 6.00, resulting in a mean of 3.22. In contrast, the employees over 40 years of age stated to have a level ranging from 1.40 up to 4.80, and as a result having a mean of 4.80. What this tells us is that the younger employees have a higher intention for turnover than the older employees. With regards to this result and the research done on differences between employees divided on the age category 40 years of age, there was reason to believe that differences may be found in predictors for the two age groups.

Table 5: T-test Comparing the Age Groups on Turnover Intention

	n	Min	Max	Mean	SD	t	df	p
Under 40	56	1.80	6.0	3.22	.841	3.04	140	.003
Over 40	86	1.40	4.80	2.81	.752			

Looking at the results from the regression in Table 6, the variables with significant contribution from the main regression analysis were accounting for 52 % ($R^2 = .520$) of the

variance of turnover intention among employees from 40 years of age and younger, but only 31.7 % ($R^2 = .317$) of the variance of turnover intention among the employees over 40 years of age. The main difference between the two age groups when it comes to the predictors was their rank of importance. Looking at the employees under the age of 40, the order of the predictors was leadership ($\beta = -.408$, $p < .001$), job satisfaction ($\beta = -.405$, $p < .001$), and sickness absenteeism for last ($\beta = .267$, $p < .05$). For the age group of employees over the age of 40, on the other hand, the order changed. For this age group job satisfaction ($\beta = -.309$, $p < .01$) was most important, then comes leadership ($\beta = -.307$, $p < .01$), leaving sickness absenteeism ($\beta = .298$, $p < .01$) as the least important variable predicting turnover intention.

Table 6: Regression analysis for the age groups (N=128)

Variable	< 40 years	> 40 years
	β	β
Sex	-.071	.039
Sickness absenteeism	.267*	.298**
Job satisfaction	-.405***	-.309**
Leadership	-.408***	-.307**
R^2	.520***	.317**
F	12.100***	8.524**

Note: * $p < .05$ ** $p < .01$ *** $p < .001$.

It is important to state that the number of participants in the current study was 128, which made the age group for employees over 40 years of age the only sample with an accepted sample size. The results from the regression analysis for the two age groups could therefore only give us an indication of how the predictors' level of importance may be different in the two groups.

Summary

The predictors for turnover intention in the present study were job satisfaction, leadership and the employee's sickness absenteeism. The personal resources optimism and self-efficacy did not show a significant contribution. The analyses conducted on the two age groups showed that the groups were significantly different in their turnover intention, and it was indicated that it might have existed a difference in the predictors' rank of importance for the different age groups' turnover intention. Those under the age of 40 seemed to be influenced by the experience of leadership, their job satisfaction and sickness absenteeism, in that mentioned order. For those over the age of 40 the predictors indicated rank had changed to job satisfaction, leadership and sickness absenteeism for last.

Discussion

This chapter is divided into three sections. First section goes through the findings of the present study based on the research questions and hypotheses, and the findings are discussed in light of theory and empirical data. Section two presents practical implications this survey may have on the organization. Finally, in section three the methodological considerations regarding the present study are accounted for, before a brief presentation of suggestions for further research in the field.

The main goal of the current study was to examine which psychosocial work environmental factors that could predict turnover intention among the engineering employees in the present organization, and to test whether personal resources would be predictors. The results showed that job satisfaction, leadership and sickness absenteeism were predictors. Personal resources (optimism, self-efficacy) were, however, found non-significant, despite optimism's negative correlation to turnover intention. The second goal was to examine if the predictors would show different predictive effect for the two age groups. The two groups were found to have significant differences in turnover intention, and the three predictors were indicated to rank differently in the two age groups.

The predictors of turnover intention

Seen from the perspective of the JD-R model the main regression analysis showed that job satisfaction, sickness absenteeism and the leadership represents the risk factors with regards to the employees' turnover intention in the current organization. The employees' satisfaction with their job, their experience of the organizations leadership and their amount of sickness absenteeism can, based on the questions in the turnover intention index, contribute to predict the employees' turnover intention over the next five years. The model altogether explained 45.1 % of the variance in turnover intention, compared to earlier research showing an explained variance varying from 24 % (George & Jones, 1996) to 66 % (Van Dick et al., 2004).

Pursuant to Fishbein and Ajzen (1975) the most important starting point for understanding an employee's turnover intention is to understand the underlying factors for the behavioral intention itself, since the intention is the main predictor for the actual turnover behavior. The present study found, in line with Mobley's (1977) turnover decision process and the theory of Mowday, Porter and Steers (1982), that the intention depends mainly on the evaluation of one's work and the degree of satisfaction with the work situation in total. Job satisfaction was found to be the strongest significant predictor similar to other studies (e.g. Hamermesh, 2001; Lambert et al., 2001; Mobley, 1977; Price, 1977; Porter & Steers, 1973;

Price & Muller, 1986; Sturman et al., 2003; William & Hazar, 1986), which gives support to hypothesis H1 stating the negative relationship between job satisfaction and turnover intention which impact on the extent to which an employee plans to leave (Lacity et al., 2008). This also corresponds with Rivai's study (2010), which found that the evaluation of one's job satisfaction might provoke withdrawal cognition and intention. The result further implied that as long as the employees maintain their job satisfaction, there are few reasons to assume that they will develop turnover intention. However, if an employee experiences a decrease in their overall job satisfaction, this may trigger the turnover intention as expected in several turnover intention models based on Mobley's work (Hom et al., 1973; Kjelstad & Dommermuth, 2009; Mobley, 1977).

In spite of job satisfaction being the strongest predictor, the beta value was not as high as in some earlier conducted studies (e.g. Sousa-Posa & Henneberger, 2004). One reason for this could be explained by the variable's weak Cronbach's Alpha value, which could possibly be explained by the usage of only a small selection of the items from Hackman and Oldham's scale considering that adding additional items would have increase the alpha value (Field, 2009). On the other hand it could also be a result of the inclusion of the variable leadership in step 4 of the regression analysis (See Table 4). By including leadership the job satisfaction variable's beta value was lowered from -0.474 to -0.321 , which may indicate that the two factors had some common explaining ground of turnover intention. Griffin and Bateman (1986) states that job satisfaction is a global concept that also embraces facets about leadership, and Dickey, Watson and Zangelidis (2009) operationalized job satisfaction to encompass good relation with one's leaders. In addition Herzberg's theory of job satisfaction (Herzberg, Mausner, & Snyderman, 1959) showed a connection between good leadership and satisfaction with one's work, where negative feelings about technical supervision revolve around the relationship one has with one's superior and appear as job dissatisfaction. The same connection was also found in Pool's study (1997) on consideration leadership style, defined as a leader who engages in a kind of relation with the employees that rest on friendship and respect. These studies, and the fact that the two variables had a medium correlation, may support that including the leadership variable takes some of the explaining effect from the employees' job satisfaction, though not enough to make the variable less important for predicting turnover intention. This infliction can therefore be explained by the correlation between good leadership and satisfaction with one's work.

The leadership variable was showed to be the third most important predictor, which gives support to hypothesis H3 stating the variables negative correlation. This result

supported the findings of Hughs, Avey and Nixon (2010) and Wells and Peachey (2011), being two of the few studies that found this significant negative correlation. This means that the more employees experience trust in their supervisor (Mulki et al., 2006), a supervisor who encourage and provides feedback and who appreciate, a supervisor who encourage and helps them to take part in important decisions and develop their skills, the lower their level of turnover intention. This is also found essential to a workforce that works with projects and communicates with several superior at the same time (Druskat & Wheeler, 2003; Hackman, 1986), which characterizes this current sample. These facets actually describe a transformational leader, a leader who gets involved in individual consideration, intellectual stimulation and inspirational motivation (Avolio & Bass, 2004). This indicates that the supervisors in the current organization through their leadership style may already be influencing and lowering the employees' turnover intention because of the fact that transformational leader style can lead to increasing job satisfaction and consequently a reduced probability of development of turnover intention. Handsome (2009) found that the correlation between job satisfaction and transformational leadership was high, and that this leadership type explained 30% of the variance in job satisfaction. Considering the project and teamwork the current employees engage in, it is not surprising that the leaders' work and their position in the work environment contribute to lower turnover intention among these employees. Through having a leader who shows support and recognition for one's work, leads to lower perceived work demands (Hackman, 1986) and reduced turnover intention (Kennedy, 2009).

The second strongest significant predictor for turnover intention in the present study was the employee's sickness absenteeism. This confirms hypothesis H8, stating the positive relation between sickness absenteeism and turnover intention, and supports earlier findings (Borda & Norman, 1997). While a measure of the length of absence for every time of absence is a measure of health concerns, and therefore correlated with burnout, the measure of frequency of absence from work is a measure of withdrawal behavior (Bakker, Demerouti, DeBoer & Schaufeli, 2003). By regarding sickness absenteeism as a kind of withdrawal behavior and by measuring it based on frequency, it is not surprising that the employee's absenteeism is found to predict the employees' turnover intention. Sickness absenteeism may, however, occur for various other reasons not considered in the present study. The interpretation of the employee's reported sickness absenteeism implies that the more an employee is absence because of sickness, the more inclined the employee is to develop turnover intentions.

Considering that 65 % of the employees answered yes to having had one day or more of sickness absenteeism during the last 12 months this work factor poses as a risk factor for turnover intention in the current organization. However, sickness symptoms are not just connected to health problems or one's physique but can also be connected to one's psychosocial work situation in some cases (Gannik & Lay, 1984). Sickness is determined by life style (eating habits, smoking, drinking etc.), personal physical factors (weight, cholesterol etc.) and surrounding factors (working conditions, skills etc.). People may be absent even though they are in good health from a medical point of view, and people may in the same way be present despite being sick. Steers and Rhodes (1978) proposed that an employee's attendance is a function of motivation and ability to attend. Attendance motivation, in turn, is affected by an employee's satisfaction with the job situation. The choice of being absent from work may be influenced by several factors, found within the workplace, outside the workplace and in the private life of the employee. It may also be the fact that being absent from work means one may be present at another place, for example home. Moreover, withdrawal behavior may resemble a coping behavior when it comes to being absent from work (Kristensen, 1991). If one does not perceive to have any possibilities for coping at work, through for example change of work pace, change of work method, taking a day off may be perceived to be a good option. Sickness absence may be a step for coping one's job and workplace before one developing turnover intention (Sundbo, 1982).

The working conditions and the contextual factors are, nevertheless, factors the organization may influence in order to gain control over the sickness absenteeism's impact on the employee's development of turnover intention. Employers are legally required to ensure systematically prevent, monitor and keep statistics of the employee's sickness absenteeism based on § 3-1 f in the Work Environment Act. The Employer shall also ensure the follow-up of sickness absent employees according to the National Insurance Act § 8-7 and the Work Environment Act § 4-6. Based on the literature it may be wise to monitor the employee's sickness absenteeism in relation to controlling for actual turnover (Dalton & Todor, 1993). According to Sullivan (2000, 2003) the leaders should take notice if employee's starts prolonging their weekends with absenteeism on Fridays and Mondays, since this may be a sign of withdrawal behavior.

Personal resources were not found to be predictors for turnover intention in the present study, which means that hypotheses 6 and 7 that states negative relationship between turnover intention and the two personal resource factors were rejected. This means that despite the expected impact based on earlier research (e.g. Xanthopoulou et al., 2007), neither

an employee's belief and confidence in his or her own capability to perform a specific task in a specific context (Wood & Bandura, 1989), nor his or her tendency to believe that one generally will experience a good outcome in one's life (Scheier & Carver, 1985) are important factors for the current sample of employees when it comes to the development of turnover intention. One feasible reason for this could be that the two variables were mainly assumed to work as buffer between turnover intention and job demand (Bothma & Roodt, 2012), the latter which incidentally neither was found to be a predictor in the present study. The optimism variable was, however, found to correlate negatively with turnover intention, which is also found in recent research (Avey et al., 2009a; Avey et al. 2009b). It could therefore, in a later study, be interesting to see if there may be an indirect impact from optimism through job satisfaction, to turnover intention. This in regards to Lok (2011) who through a SEM-analyze found the mediating role of well being composed of job satisfaction, between psychological capital like optimism and turnover intention.

The change of the predictors' level of importance

According to the main hierarchic regression, the age variable itself did not have predictive effect on the turnover intention throughout the regression model despite that this characteristic is commonly found to have an effect on turnover intention among employees in oil and gas industry (Dickey et al., 2009). However, neither did it for Mobley et al. (1978), Mowday et al. (1982) or Mobley et al. (1979) in their regressions. Ng and Feldman (2009) recently stated that to find a relation between age and voluntary turnover there had to be high tenure and low educational level in the sample, which still only resulted in a Pearson r of -.14. Considering the strong connection between turnover intention and voluntary turnover, and the high educational level of the sample, this may indicate that the lack of predictive ability of age in the present study was caused by the sample's high level of education and mean tenure level. The lack of significant contribution from age, however, may support earlier research concluding that work environment actors (i.a. job satisfaction) are more important than demographic characteristics when it comes to turnover intent (Lambert et al., 2001).

On the other hand, it could be argued for an additional analyze on the possible age differences in turnover intention in the present sample, which in turn showed significant differences on the age divided sample when it comes to the groups' turnover intention (See Table 5). The t-test also found that the mean younger employee had a higher turnover intention than the mean employee over the age of 40. This supports earlier research stating that younger employees show higher turnover intention than older employees (Cho & Lewis,

2011; Smith & Hoy, 1992), and that the age group 20-34 was found to have particular strong turnover intention (Lee et al., 2009). The experience of today's ever-changing workforce may influence the younger employees to be more careful about their ties to their workplace, or be influenced by a few employees' drive for getting a good and fast career development. As long as the employees' work skills and knowledge are in demand, the entry-level employees may become more loyal to their career than to their organization. Another reason may be that today more and more people take higher education. Considering that an employee with higher education are believed to develop a more individualistic view of one's career (Kommunal- og Moderniseringsdepartementet, 1999), the younger employees may have a higher probability to develop intention to quit one's job and seek other work challenges because of their higher level of education compared to the employees who now are senior engineers. There are reasons to believe that the younger employees will change their job at a more frequent rate than their older engineering colleges. What concerns the older employees, the result could imply that these employees may feel the need to remain in one's job because of economic responsibilities, work stability (Bedeian et al., 1992), or the perception of fewer job opportunities outside the organization (Iverson & Roy, 1994). Alternatively the retention may be caused by of other factors coherent with age, like familiar situation, their tenure in the organization or their experience of a match with the organization (DelCampo, 2006). The latter may be an especially important reason for older employees to remain in an organization, namely because they may have greater possibility of promotion because of their seniority and high tenure (Hellman, 1997).

By conducting a second hierarchic regression analysis on the two age groups it indicated accordingly that the work factors possibly had different predictive effect on turnover intention depending on the age group the employee belong to (See Table 6). The three factors all showed significant contribution within the two age groups, the only difference being the various variables' ranking when it comes to their prediction effect stated by the beta values. For employees below the age of 40 the strongest predictor was leadership, followed by job satisfaction and sickness absenteeism. For employees over the age of 40 on the other hand, job satisfaction was indicated to be the strongest predictor, followed by leadership and sickness absenteeism for last. These findings support the research of several scholars. According to Finegold et al. (2002) the influence of factors contributing to developing turnover intention will vary depending on the employee's age, namely because of the employees thought about his or her near work-related future or which stage in one's life the employee's experience to be on. With regards to the fact that job satisfaction was

indicated to be more important to older employees for not developing turnover intention, this was not that surprising considering that older employees are found to be more focused on being proud of one's work and satisfied with the work life than younger employees (Rhodes, 1983, Siassi et al., 1975). In a way the recent findings may also support Lord and Farrington (2006) who found that the older employees remain in their job because of job satisfaction, regarding that there are higher turnover intention among the younger employees in the present sample and job satisfaction is more important for the older employees in predicting turnover intention than for the younger age group. This could also relate to the research findings showing age to be positively related to job satisfaction (Reiner & Zhao, 1999; Wang et al., 2012) and age being negatively related to turnover intention (Lambert & Hogan, 2009).

The fact that leadership went from being the most important factor for employees under the age of 40, to be the second important factor of the three significant ones when the employee pass the age of 40 was neither surprising considering the younger employees positions in an organization. It was a fact that most organizational leaders in the present sample were over 40 years of age, and therefore belong to the older age group. Out of the 41 employees who had managerial responsibility, 32 of them were in the age group of employees over 40 years of age. This may had an impact on the variables importance in predicting turnover intention, considering that leadership may not be as important for turnover intention for the leaders themselves. On the other side, the supervisors themselves may had leaders over them as well. Another reason for the lowered importance for leadership in predicting turnover intention among older employees may be because of their change in amount of knowledge and skills, and tenure in the organization over time. As an entry-level employee or a graduate one has knowledge about theory and how things are supposed to work, but one need guidance and practical experience to learn how to use one's knowledge and learn how the specific organization functions. Even disregarding the entry-level employees, younger employees logically have less tenure in the organization than the older employees, and will therefore be in need of more leadership for one's work tasks and skill development than the senior employees. Older and more tenure employees have more experience and practical knowledge, which may make the leadership less important because one knows how to do one's job and are not dependent of guidance. Older and more tenured employees have possibly also become more "matched" with the organization and the organizational culture than the younger employees (DelCampo, 2006; O'Reiley et al., 1991). The more senior employees would know how to achieve good job performance and give the results the leaders want because they know their own leaders and the organizations goals

well, which most likely leads to organizational commitment and increased job satisfaction, and consequently possibly higher retention (Rhodes, 1983; Jaros, 1997). It may seem that the older an employee and the more tenure that is obtained, less likely he or she wants to give up resources and tenure to engage in turnover intentions, compared to those with less tenure and who are of younger age. This is also a good thing in the long haul, since the successful transfer of the organization's culture usually comes from the tenure employees (Hellman, 1997).

Sickness absenteeism was the third most important predictor for turnover intention in both age groups, the only difference being a marginally higher beta value for the predictor for older employees. One might think that there was a considerable higher level of sickness absenteeism amongst older employees considering the increased possibility of getting sick when one gets older. Ng and Feldman (2010) found, however, that employees with longer tenure were less likely to be absent from work. Looking at the numbers for employees who answered *yes* to the question for sickness absenteeism, the numbers were about the same in both age groups. The number of sickness absent employees under the age of 40 was 44. This compares to 48 among the employees over the age of 40. Looking into the difference between the age groups and the number of sickness absenteeism days it was the employees in the age brackets 30-49 who reported the most frequent absence, and most of them reported having been absent around 2-5 days during the last 12 months. The fact that the two age groups have 39 employees in each, means the 30-39 group had three times more employees reporting absenteeism of five days or more than those in the 40-49 group. This indicated that not only was there more turnover intention among those under the age of 40, but there were also more sickness absenteeism.

The indication of more sickness absenteeism among the younger employees compared to the older employees was in fact found to be a significant difference in a t-test conducted on the two age groups on the outcome sickness absenteeism. This means that it was not surprising that the two phenomena were related and that sickness absenteeism was one out of the three significant predictors for turnover intention in the current organization. Bearing in mind that sickness absenteeism may be both a withdrawal and a coping behavior (Sundbo, 1982) there are reasons to believe that the organization's sickness absenteeism could be consisting of a number of other absenteeism reasons than sickness and health problems. It would therefore be interesting to study further how the employees in the current sample experience their sickness absenteeism in relation to their turnover intention, and which factors that are contributing to their use of sickness absenteeism. There may in turn be one or

more conditions in the employees' workday that are within the organization's control to improve or reform, and as a result possibly also get a better understanding of the employees' use of sickness absenteeism and their turnover intention.

The turnover intention among the employees in the two age groups represents different challenges to the employer than to the organization. It will be more important for the organization to retain the younger employees in a tight labor market where they seem to develop a less loyalty to the organization, and a more loyalty to their CV. On the other hand it will be important to also retain older employees, at the same time as it is essential to not end up with a staff consisting only of senior engineers who hold on to their settled work culture and oppress the few new hiring's ideas and innovative contributions. By having too many older employees the organization may fail to make the most out of the younger employees' fresh knowledge and develop a work culture where the younger employees do not get into the discussions and decisions and thereby develop a contagious turnover intention amongst the newly hired. One challenge with regards to the development of turnover intention in the two age groups may be that there were indicated differences as to which factors that are contributing to the intention for the different age groups. The focus that is needed to retain younger employees is not the same focus that should be used to retain and at the same time have a necessary turnover flow in the senior employee group. The presented theory and literature seem to conclude that the best alternative with regards to the future of the organization is to have a low level of turnover intention among the employees in both groups. The challenge will be to control this level of turnover intention, so that the undesirable turnover does not occur but that the desirable flow of new hiring continues. However, to find the best solution to control for these processes one needs to continue to examine the employees' turnover intention by including this topic in the annual survey of the work environment. By continuing to study these factors in a larger sample, the various factors' importance in the two age groups can be mapped in more detail. Moreover, by conducting SEM-analyze one would also be able to look closer at the relation between the variables in the form of indirect influences.

The results in general

The results of the present study highlighted the importance of distinguishing between different types of occupations in the research into employee's turnover intention. As the results demonstrates, the factors predicting turnover intention were not the same for the engineers in this sample, as the factors that are found to predict turnover intention amongst nurses, military employees and IT workers participating in earlier research. This indicates

that to improve the work environment for engineers a survey should be conducted that includes psychosocial work factors specific to engineers. One reason for this is the difference between the various occupations and their employees' attitude towards turnover intention. Fishbein (1967) stated early that the major determinants for behavioral intention is the attitude toward the behavior itself, as well as the perceived subjective norms around the employee, which is the subjective experienced normative pressure from the organizational culture. When organizations attempt to improve their turnover rate - as a respond to newfound data on their work environment - they often discover the critical role of organizational culture and subculture (Schein, 1996). The organizational culture may therefore play an influencing part in this case, through the organization's norms and the relations between employees themselves as well as the relations to their superiors. Because of the assumed differences in organizational culture, the components for turnover intention may vary due to the fact that not everyone considers the normative side of the turnover behavior in the same way, nor do all employees consider his or her beliefs about having the intention of turnover to the same degree as others. How these experiences of norms and social relations influence on the employees' experience of one's job will vary, and consequently cause the turnover intention to vary. Nevertheless, it is important to have in mind that there are varying reasons for the development of turnover intention. The fact that a large variance in turnover intention in this sample remains unexplained could, however, be an indication of the role of norms and culture in the current organization. In addition, the effect of fit between the company's national culture and the individuals' national culture should be examined in multinational companies like this present one. There are indeed reasons to believe that the engineering occupation may have a somewhat dissimilar culture compared to professions like nurses mainly because of the engineers predominantly project based work. Engineers have their own common occupational culture (Schein, 1996).

Earlier research shows that the selected variables in the current study have previously been able to explain a rather large part of the causal picture of turnover intention, but unfortunately not all of it, which may be an expression of the phenomenon as distinctive. The basic idea behind the JD-R model can, however, not be used to explain the impact from the job resources like job satisfaction and leadership because of the lack of predictive effect from the job demand variable. Despite the idea of a direct influence between the two variables, the lack of such could be caused by the omission of the mediator showed in JD-R, like burnout (Bothma & Roodt, 2012). But to quote Bakker and Demerouti (2007); which job demands and resources that play a role in specific organizations, will depend on the specific work

characteristics in that exact organization. In the current organization - based on this exact sample - the role of job demands, social support and organizational commitment are not significant for the prediction of turnover intention. This rejects hypotheses H2, H4 and H5. The employee's experience of quick decisions, rapid work pace and challenging work, as well as the support from coworkers, day-to-day superior and friends and family also do not seem to impact their turnover intention. The important aspects of the findings from the present study are that, consistent with previous research, several of the included factors in the present study (i.a. job satisfaction, leadership, sickness absenteeism) show a significant contribution to predicting turnover intention among the employees. They can be said to support a recent finding from an international comparative study on job mobility with turnover intention, which states that subjective variables contribute to explain the variation in turnover intention in larger extent than objective variables (Sousa-Poza & Henneberger, 2004), since the employee's job satisfaction, the experience of leadership, and their subjective recollection of sickness absenteeism are found to be the predictors for this sample's turnover intent.

The predictors are mainly from individual (i.a. job satisfaction, sickness absenteeism) and relational level (i.a. leadership). The fact that the organizational commitment variable was found to be non-significant leaves work environmental factors from the organizational level out of the study. The lack of significant predicting ability from job demands, organizational commitment, social support and the personal resources may have many explanations. One explanation that may be feasible for some of the variables is that their effect may be covered by the explaining effect of one of the significant variables.

The lack of contribution from organizational commitment the issue is a complex issue. One reason for the non-significant result for this variable could be that the study that showed the strongest influence of organizational commitment on turnover intention was conducted on a sample consisting of 70 % female employees (e.g. Van Dick et al., 2004), while the present study only consisted of 27 % females. The skewed distribution of genders in this sample, might suggest that the degree of organizational commitment may be a stronger factor for females choosing to remain in a job than for this sample consisting mostly of men. But the difference could also imply that organizational commitment is more important for employees in banks than for engineers based on the mentioned comparable study. Looking at the organizational commitment variable in itself considering the concepts theory, the lack of contribution could be the complexity of the concept in relation to the withdrawal-cognitions of turnover intention (Hom & Griffeth, 1995). Organizational commitment is found to relate

to turnover intention (Hom & Griffeth, 1995; Igarria & Siegel, 1992; Martin & Roodt, 2008; Steel & Ovalle, 1984; Tett & Meyer, 1993), but affective commitment is the only aspect of Meyer and Allen's organizational commitment concept that has a significant predictive effect. This may therefore explain some of the lack of contribution from the whole concept in the present study. Another way of looking at it is that even though the variable did not show significant contribution in the regression, the inclusion of the variable reduces somewhat the effect of the job satisfaction variable. Given what we know about the relation between job satisfaction and organizational commitment, this may indicate that the organizational commitment does have some impact on the whole model due to job satisfaction being the antecedent of organizational commitment (Morrison, 2004; Porter et al., 1974), even though high levels in both variables were found predicting low turnover intention in earlier studies (Igarria & Siegel, 1992; Martin & Roodt, 2008).

What regards the rejection of hypothesis H4 stating social support's negative relation to turnover intention, it is reasonable to believe that the lack of contribution may be caused by another variable's covering explanation effect in the analysis. Social support is highly related to the variable leadership, based on the variables positive correlation of $r = .589$ ($p < .01$). The facet of the social support variable which focuses on the superiors willingness to listen to the employee's work-related problems could be expected to have a connection to the leadership variable endorsing the support and encouragement from the superior, which was found as a significant predictor for turnover intention (Griffeth et al. 2000; Hom & Griffeth, 1995; Kennedy, 2009; Lee, 2008). A study conducted by Lewis (2008) found that the support from a leader is far more important than support from the employee's peers. His interpretation of the findings was that an employee would be more inclined to develop turnover intention if the leader does not show support, compared to a situation with no evident support from peers. This may partly support the possibility that some facets of social support were covered by the leadership variable, which may inhibit a visible contribution from the social support factor.

Implications for the organization in question

Given the empirical evidence from the present study, there are some practical implications for organizations and their HR practices to keep the turnover intention and the actual voluntary turnover low as well as to improve the psychosocial work environment. Employee turnover intention, which is possibly followed by turnover, will always be part of an organization's development and will vary with time. Turnover levels are rarely uncorrelated to marked cycles. In times when the economy is weak, organizations usually

adapt to the market situation by reducing the workforce or new hires. Another possible consequence of weak markets may be that employees who thought about quitting now stay in their job because of the possible increased difficulties with seeking a new job. This situation rarely helps keeping them engaged in their job, which in turn may make them less productive (Young, 2008). Being in an industry with increased competition from abroad and with large and long-lasting projects, adds to the pressure on engineering leaders and HR departments to improve both recruitment and selection of new employees. They may also experience a greater need for maintaining a low level of voluntary turnover to minimize the loss of experienced employees. Recent research shows that engineers show a lower retention rate compared to other college graduates (Kennedy, 2006), which makes it especially important for organizations with this type of profession to keep up its appearance to keep employees as well as attract new ones. It is hard to decide on what is a satisfactory turnover intention rate, and this remains to be done. A high turnover rate is an issue, but a too low turnover rate might also have undesirable consequences such as emotionally quitted and unengaged employees that lower productivity and limit the organization's potential. The organization can keep up the breath of new knowledge, ideas and different perspective by hiring new employees who may challenge the company and their working model by continuously working for a low but adequate turnover rate. According to the turnover intention research the important side of the phenomenon is to not only focus on the rate of turnover intention itself, but to also focus on how one may strategically use the knowledge about the employees' turnover intention and the antecedent factors. The goal is not to just reduce the general turnover, but to reduce the unwanted turnover and at the same time keep up the flow of new hiring. The key is to spot at an early stage the employee's signs of intention to quit. Then one can strategically plan the flow of talent through the organization. By decreasing the flow of top performers out and increasing the flow of top performers in, the organization can demonstrate that there is no culture for entitlement to one's position, and get a more productive and motivated work environment. However, to do this it is important to understand which factors are behind the development of turnover intention.

The present study indicate that the organizations consisting of a predominantly international engineering staff should be able to control or avoid turnover intention by increasing the employee's job satisfaction, show a good transformational leadership, and supervise the employee's sickness absenteeism. This does not exclude that there were indicated some differences between age groups when it comes to the importance of the predictors for turnover intention. Actions should focus on the younger groups of employee,

since they show the highest level of turnover intention, but also because it is among these employees that the HR practices appear to matter the most (Cho & Lewis, 2011). Because of the number of senior employees in organizations like this, you will find a certain rate of turnover intention due to the employee's upcoming retirement. What organizations like this one should be aware of is the development of the younger employees' turnover intention by focusing on acknowledging and identifying the employees who are most exposed to turnover intention. Supervisors may have dialogues with the employees who show the highest risk for the development for turnover intention, find the areas that motivates and engage the employees and thereafter find a way to improve these aspects of the employees' work day.

Though it may seem obvious that satisfied employees and good leadership predict lower level of turnover intention, organizations should highlight these factors of work attitudes and improve on them in a way that fits their particular organization structure. This should not only be done to avoid the costs from turnover intention leading to actual turnover, but also to have leaders who have a good understanding of the employee turnover intention and who creates job satisfaction that also helps the competitive advantage of the organization (Lutchman, 2008). When it comes to increasing job satisfaction, increasing the salaries is not a solution (Morell, Loan-Clark, & Wilkinson, 2001), since that represents surface level analyses and in the majority of the cases do not address the root causing the turnover intention. Neither does it show impact on turnover intention in the larger number of studies (Igbaria, Meredith & Smith, 1994). The way employees are seeking different ways to balance their work and private life, have a stable economy and a meaningful work life do have an impact on what makes them motivated and engaged in their job. Benefits like flexible office hours time and a health care component in the compensation packages do influence the job satisfaction (Rubery, Ward, Grimshaw, & Beynon, 2005), and such benefits may also result in a further fulfillment of the psychological contract between the employee and the employer, which in turn will contribute to even less likelihood of quitting intentions (Anvari, Amin, Ahmad, Seliman, & Garmsari, 2011). Employees may become more committed to their job and role in the organization because of deriving fulfillment from it (Hackman & Oldham, 1980) due to motivational potential through availability of job resources like social relations and support from leaders (Schaufeli & Bakker, 2004). The more job resources the employee experiences to have control over, the less the employee is inclined to develop withdrawal cognition followed by turnover intention (DeCuyper et al., 2011; Sage et al., 1998).

One strategy to further use the supervisors' role in decreasing future turnover intention is to train the superiors in the various business units to be transformational leaders.

This may not only lead to an improved and unifying organizational culture, but also increase the employees' job satisfaction (Emery & Barker, 2007). The management must, however, keep in mind that the application of leadership style is not as simple as choosing between transactional and transformational. A successful leader uses multiple leadership styles for different situations and processes (Jacques, Garger, & Thomas, 2008). A satisfying mutual relation between employees and their supervisor may establish a self-perpetuating system maintained by the norm of reciprocity (Gouldner, 1960). Even though the social support variable was not found to be significant in the present study, the experience of support from leaders has been found to lower the prediction of turnover intention (Mulki et al., 2006). Considering that 22 per cent of the sample indicated that they have an internal turnover intention, it might be smart to develop and share a vision for the organization and let the employees be part of the processes by encouraging innovativeness and effort. The employees will then see opportunities to develop and manage a career within the organization which will not only reduce any intention to quit, but also possibly lead to internal mobility of valuable employees (Igarria & Siegel, 1994).

Job embeddedness was not discussed in the present study because the concept focuses solely on why people stay in an organization rather than why they leave. However, this theory is presumably a theory that will be increasingly used in the field of turnover research (Lee, Mitchell, Sablinski, Burton, & Holtom, 2004). Its focus may also be put to use when it comes to HR practices to keep turnover intention low. Job embeddedness consists of how retention is promoted by the employee's links (college relations), fit (organizational match) and sacrifice (lost benefits by turnover) promote retention (Lee et al. 2004). Especially the employee's fit is essential to focus on when supervising the employee's turnover intention level. Considering that strong fit increase the sense of sacrifice, while a wide and external set of links decreases the sense of sacrifice, HR practices should attempt to enhance fit which are more likely to reduce turnover intention (Bambacasa & Kulik, 2013). Employees who experience fit are more likely to discourage turnover intentions (Wallace, 1997), because the better fit, the higher job satisfaction, the higher commitment and the lower turnover intention (Silverthorne, 2004). This in turn increases the likelihood of the organizations investing in their development of skills and knowledge that will be worthwhile. HR practices mainly focuses on the four areas recruiting and selection, training and development, pay and benefits, and performance appraisal. When it comes to the focus on the employee's fit, researchers have primarily seen it in relation to recruitment and selection processes, but performance appraisal and reward practices are also found effective (Bambadas & Kulik,

2013). If the leaders incorporate this focus on fit and enchanted job embeddedness they may be better positioned to implement HR activities that will retain valuable employees.

In practice this study shows that the organization in question should not focus their intervention solely on the research field of turnover intention. The engineer employees and their organizational culture may be explaining their uniqueness, but they also have different predictors for turnover intention than earlier research has shown that other occupations have. By conducting surveys of their own they may reveal a set of factors that cause turnover intention in their organization and how to develop appropriate measures to manage them.

Methodological considerations

The present study has both strengths and weaknesses with regard to the methodological considerations that are important for the interpretation of the findings. The study contributes to the field by being the first study, which includes the personal resources self-efficacy and optimism to predict turnover intention, and is conducted on engineers in a Norwegian company. Even though the personal resource variables did not show predictive ability, the optimism variable was in fact shown to relate to turnover intention. And the inclusion of the psychological capital should be studied further within the field of engineering psychosocial work environment research because other samples of engineers will possibly be influenced by these factors of personal aspects when considering turnover intention or other organizational outcomes.

By having had a closer look into the differences between two various age groups the results in the current study contributed to the understanding of how comprehensive turnover intention is. It is also worth mentioning that current study revealed that engineers are a unique group of employees when it comes to turnover intention predictors. Engineers are not a homogeneous group considering their careers and type of employment (Kennedy, 2006). Even though this sample was homogenous because it consisted of participants from the same organization, it included both leaders and project and base working employees. It was also distinct in that none of the comparing studies were conducted on Norwegian engineer employees. While most models for turnover intention and job satisfaction are designed for a general workforce, it is important that a larger amount of the research now is being proposed on one particular employment field (Lambert et al., 2001). By conducting turnover intention research on specific occupations the peculiarity with different occupations may be revealed, and there will be a larger possibility of a meta-study showing organizations how to retain their type of employees in particular (Takase, 2010).

When it comes to possible limitations with the present study, one may consider theoretical, practical and statistical limitations. A theoretical limitation may be that we unfortunately were unable to investigate the representativeness of our survey due to the lack of official data from similar companies when it comes to data on turnover intention. Another aspect of this representativeness limitation is that the questionnaire was just sent out to employees who leaders from HR thought had time to participate. To shield the busiest employees, who worked on major projects and were overseas, some groups of employees were excluded. This may have had an effect on the representativeness, but considering the answer rate we concluded it was a smart move. A second theoretical limitation may be that the survey was designed and limited in scope to examine and analyze factors that would predict turnover intention based on what has been identified in the literature. A possibility could be to interview key employees before composing the survey, which would give a better basis for the selection of factors.

A practical limitation may have been the sample size. In spite of the approved sample size for the current analyses (N=128), a larger sample could possibly be able to find several significant predictors. It is important to state that the number of participants in this survey was 128, so after dividing them into two groups based on age, the sample for employees over 40 years of age was the only group with an accepted sample size. The group for employees under 40 years of age was in short of 23 participants. Consequently the results from the regression analysis on the two age groups could only be considered as indications of possible differences in turnover intention predictors despite that the t-test showed significant differences between the groups. The different rank of the predictors could also have been a cause of inclusions from type 2 errors (Field, 2009). These findings could, however, have been more visible by achieving a larger sample size. It is therefore important not to neglect tendencies in the current results merely because of its non-significance with regards to the lack of significant influence of personal resources. Future research is recommended to look into these relationships with a larger sample size, so that all significant relationships can be found.

Another practical limitation was the functional dependency on self-reporting of absenteeism instead of employee records of absenteeism, mainly to maintain respondent anonymity and confidentiality. Relying on self-report information may have led to social desirability response bias. However, Johns (1994) has shown that such practice is far from uncommon. A possible improvement could be that instead of measuring the absenteeism by asking employees to report the frequency with which they exhibited this behavior, they could

be given two response options like no and yes. This could have avoided requiring retrospective recalling of information (Argued for in Demerouti, Blanc, Bakker, Schaufeli, and Hox, 2009). However, this should in that case be discussed regarding to what degree a yes-no answer would be a measure of frequency in relation to the measure of frequency of absence being a measure of withdrawal behavior (Bakker et al., 2003b).

Lastly, when it comes to statistical limitations a weakness could be found with the operationalization of the variables job satisfaction and turnover intention. Since the two different indices put together to measure turnover intention was thought to measure the same construct, the assembled measure was used. However, in hindsight, choosing a single complete measurement would be a better choice. This could have enabled an easier and more accurate interpretation, and could have given a stronger Cronbach's Alpha. When it comes to the measurement of job satisfaction including all the items from Hackman and Oldham's (1975) scale, or selecting a one-item measurement of the respondent's overall assessment of job satisfaction would, in hindsight, be a better choice. This is found to give the greatest validity (Scarpello & Campbell, 1983; Wanous, Reichers, & Hudy, 1997) based on a validity study that found that multi-facets scales like Job Descriptive Index and Minnesota Survey Questionnaire demonstrates conceptual weaknesses (Løvland, 1999). Another statistical weakness may be that present study focused solely on the employee's intention to quit in the following five years period. The data was collected from the respondents at a single point in time, which may have weaken the causal relationships between the variables because of bias (Bobko & Stone-Romero, 1998). Since there were no follow up in our questionnaire, there were no data showing how many of those who intended to quit, actually did. Based on today's research on turnover intention, it is safe to suggest that there is still need for a longitudinal study on turnover intention. There is too little attention on the time element of the process, as to when an employee thinks about quitting one's job. This is an aspect of the process that should get more attention based on being one out of four elements of an intention (Fishbein & Ajzen, 1975), as well as being an element of the phenomenon that could give additional knowledge about the process from job satisfaction to turnover intention, not only from the intention, through search process, and the outcome of turnover itself. One-time survey measures and subsequent correlation analyses also overlook the process involved in turnover intention. More longitudinal studies would strengthen the validation of the relationships found between the variables in this study, as well as answer some important questions regarding causal relationships (Igbaria & Siegel, 1992). Even though it is likely to be limitations to any attempt to explain a complex phenomenon like turnover intention, the

attempts should not be ignored. The only way to get closer to an explanation and an understanding of why employees have thoughts about leaving work is to expand the research field. It would in any case be prudent to also look for the results also in other countries or in other cross-national companies.

Conclusion

Given the challenges with retaining valuable employees in today's labor market, there is a need for research on the intention to quit. The primary goal of this study was to examine work-related factors from the literature and research of turnover intention, and two variables from the personal capital, to see how these factors would predict turnover intention among engineer employees in a large global company in the oil and gas business. Greater comprehension of turnover intention can facilitate more targeted intervention. The results show that the most important predictors for turnover intention in the current sample were job satisfaction, leadership and sickness absenteeism, in that order of strength, which explained 45.1 % of the variance in turnover intention. The second goal was to examine the implication of age. The same predictors were found in the two age groups divided at the age of 40, but they were indicated to have different ranks of importance for the two age groups. A surprising result was that the personal resources optimism and self-efficacy, along with job demand, social support and organizational commitment did not predict turnover intention in the current sample. This study revealed once more the complexity of turnover intention. Further research should therefore focus on examining the intention to quit in a larger sample of employees. Further research should include the process element of time and possibly conduct a cross-sectional study across different occupations to expand the understanding of the concept.

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Appendix

Appendix A: The questionnaire



Questionnaire exploring psychosocial work environment

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Request for participation in the research project
Questionnaire for all employees working for Aker Engineering & Technology

Purpose

The purpose of this survey is to study factors that may contribute to reduce the number of people being on sick leave at any given time. We are particularly interested in the psychosocial work environment of the company and how employees experience the impact of such factors on everyday work. Results from the survey will be used in our master's theses at the Norwegian University of Science and Technology (NTNU) and they will be made available to the company. The company's name will be anonymised. The survey is supported by the company.

Participation and information

Participation is voluntary. All information will be treated confidentially. During the data collection phase, your answers will be linked to your computer's IP address, but all data will be anonymised completely when the data collection is completed, no later than by the end of november 2013. You give your consent to participate in the study by completing the survey. When you have submitted your answers, it is no longer possible to withdraw from the study. The Data Protection Official for Research, Norwegian Social Science Data Services (NSD AS) has been notified of the project.

Survey Design

The survey consists of questions and statements about your work and the organization where you work. Answering the questions takes 10 minutes.

If you have any questions you may contact us by phone 922 14 737.

Thank you for participating in the study,

Mille Myhre and Marielle Paulsen
Master's Degree Students in work and organizational psychology

Per Øystein Saksvik
Professor, Academic Advisor

Neste

Avbryt

1. Personal Background

Age

- Under 30
- 30-39
- 40-49
- 50-59
- Over 60

2. Sex

- Female
- Male

3. Formal education

- Bachelor degree
- Master degree
- PhD
- Others

4. How long have you worked for this organization?

- Under a year
- 1-5 years
- 5-10 years
- 10-20 years
- 20 years or more

5. How long is your total work experience?

- Under a year
- 1-5 years
- 5-10 years
- 10-20 years
- 20 years or more

6. In what business unit is your employment?

- Front end
- Engineering Oslo
- Others

7. Indicate your employment

- Permanent
- Temporary/consultant

8. From day to day, do you work projectbased or base?

- Projectbased
- Base

9. Is your position

- Management in base organization with personnel responsibility
- Management in base organization without personnel responsibility
- Position in base organization without management responsibility
- Management in project with personnel responsibility
- Management in project without personnel responsibility
- Position in project without management responsibility

10. Job Demands

	Very seldom or never	Rather seldom	Sometimes	Rather often	Very often or always
Does your work require quick decisions?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is it necessary to work at a rapid pace?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your work require complex decisions?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Are your skills and knowledge useful in your work?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is your work challenging in a positive way?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you consider your work meaningful?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your job require that you acquire new knowledge and new skills?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Control at work

	Very seldom or never	Rather seldom	Sometimes	Rather often	Very often or always
If there are alternative methods for doing your work, can you choose which method to use?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can you influence the amount of work assigned to you?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can you set your own work pace?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you experience that you have flexible hours?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Can you influence decisions that are important for your work?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Mastery of Work

	Very seldom or never	Rather seldom	Sometimes	Rather often	Very often or always
Are you content with the quality of the work you do?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Are you content with your ability to solve problems at work?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Are you content with the amount of work you get done?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. Leadership

	Very seldom or never	Rather seldom	Sometimes	Rather often	Very often or always
Does your day to day superior encourage you to participate in important decision?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your day to day superior encourage you to speak up, when you have different opinions?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your day to day superior help you develop your skills?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your day to day superior tackle problems as soon as they surface?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is the relationship between you and your day to day superior a source of stress to you?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your day to day superior provide feedback on your work performance?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your day to day superior distribute the work fairly and impartially?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your day to day superior treat the workers fairly and equally?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. Work motives

How important are the following considerations in relation to your ideal job:

	Unimportant	Not so important	Rather important	Very important	Absolutely necessary
To have good pay and material benefits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To get a sense of accomplishing something worthwhile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That the work is secure and provides regular income	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To have a safe and healthy physical work environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To achieve personal development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To be able to put my imagination and creativity to good use at work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. Health

During the past 12 months, how many days have you been absent due to sickness?

- Never
- 1 day
- 2-5 days
- 5 days or more

19. During the past 12 months, have you attended work despite being sick?

- Never
- 1 day
- 2-5 days
- 5 days or more

20.

	To no degree	To some degree	To a great extension
In this organization, do you consider it to be acceptable to attend work despite being sick?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21.

	Very seldom or never	Rather seldom	Sometimes	Rather often	Very often or always
Do you attend work despite not feeling your best?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22.

	Very Good	Good	Neutral	Bad	Very Bad
Overall, how do you consider your own health in general?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. Occupational health service

	Yes	No	I don't know
Is your workplace in use of/connected to an occupational health service?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does this contribute to a better work environment?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have you been in use of a service through the occupational health service?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. Role expectations

	Very seldom or never	Rather seldom	Sometimes	Rather often	Very often or always
Do you know what your responsibilities are?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you know exactly what is expected of you at work?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Are you given assignments without adequate resources to complete them?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you receive incompatible requests from two or more people?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

25. Social interactions and support

	Very seldom or never	Rather seldom	Sometimes	Rather often	Very often or always
If needed, are your co-workers willing to listen to your work-related problems?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If needed, can you get support and help with your work from your co-workers?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If needed, is your day to day superior willing to listen to your work-related problems?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

26.

	Very little not at all	Rather little	Somewhat	Rather much	Very much
Do you feel that your friends/family can be relied on for support when things get tough at work?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

27. Organizational culture

	Very seldom or never	Rather seldom	Sometimes	Rather often	Very often or always
Are employees encouraged to think of ways to do things better at your workplace?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is there sufficient communication in your department?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is there sufficient communication in your project?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

28.

	Very little not at all	Rather little	Somewhat	Rather much	Very much
Are employees well taken care of in your organization?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To what extent is the management of your organization interested in the health and well-being of the employees?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

29. Trust and commitment

	Very seldom or never	Rather seldom	Sometimes	Rather often	Very often or always
Can you rely on information provided by your day to day superior?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

30.

	Very little not at all	Rather little	Somewhat	Rather much	Very much
Do you trust the ability of the management to look after the future of the company?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

31.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
To my friends I praise this organization as a great place to work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My values are very similar to the company values	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This organization really inspires me to give my very best job performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

32. During the last 9 months...

	Never	Almost never	Sometimes	Almost always	Always
How often have you considered leaving the company?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often are you frustrated when not given the opportunity at work to achieve your personal work-related goals?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often do you look forward to another day at work?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

33.

	Totally disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Totally agree
I think I will be working in this organization five years from now.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I rarely think about applying for a new/different position within the organization?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I rarely think about applying for a new job in a different company?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

34. Job satisfaction

	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied
Overall, how satisfied are you with your work situation?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

35.

	Yes	Without hesitation	Would think twice	No
With your present knowledge about the company, would you consider taking this job today?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Would you recommend this job to others?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

36. If you have any comments or questions please comment below.

Appendix B: E-mail invite for participation

[Redacted]

21. oktober 2013 13:54

[Skjul detaljer](#)

[Innboks - Gmail](#) 1

Kopi: Marielle Paulsen, Mille Myhre
RE: survey - job presence - siste versjon

Dear all,

We are proud to be a company where the job presence is high. We would like to better understand the factors that contribute to this trend. Currently we have 2 Master students from NTNU conducting a short survey for their Master Thesis about the factors that influence presence at work and motivation to go to work every day.

You are chosen to participate in this study. This survey will take you 10 minutes to answer.

The results of the survey will be presented in working environment committee in June 2014.

Our management support this survey, and your participation is highly appreciated.

Deadline is Friday 25 October at 12:00.

Best regards,

[Redacted]
Vice President HSE

[Redacted]

[Redacted]

[Redacted]

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Appendix C: Approval letter from NSD

Norsk samfunnsvitenskapelig datatjeneste AS
NORWEGIAN SOCIAL SCIENCE DATA SERVICES



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nsd@nsd.uib.no
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Org.nr: 985 321 884

Per Øystein Saksvik
Psykologisk institutt NTNU

7491 TRONDHEIM

Vår dato: 04.10.2013

Vår ref: 35407 / 2 / HT

Deres dato:

Deres ref:

TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 09.09.2013. All nødvendig informasjon om prosjektet forelå i sin helhet 27.09.2013. Meldingen gjelder prosjektet:

<i>3.5407</i>	<i>Nærversfaktorer i en organisasjon med 800 ansatte</i>
<i>Behandlingsansvarlig</i>	<i>NTNU, ved institusjonens øverste leder</i>
<i>Daglig ansvarlig</i>	<i>Per Øystein Saksvik</i>
<i>Student</i>	<i>Marielle Paulsen</i>

Personvernombudet har vurdert prosjektet og finner at behandlingen av personopplysninger er meldepliktig i henhold til personopplysningsloven § 31. Behandlingen tilfredsstiller kravene i personopplysningsloven.

Personvernombudets vurdering forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i melde skjemaet, korrespondanse med ombudet, ombudets kommentarer samt personopplysningsloven og helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, <http://www.nsd.uib.no/personvern/meldeplikt/skjema.html>. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, <http://pvo.nsd.no/prosjekt>.

Personvernombudet vil ved prosjektets avslutning, 15.05.2014, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

Vigdís Namtvedt Kvalheim

Hildur Thorarensen

Kontaktperson: Hildur Thorarensen tlf: 55 58 26 54

Vedlegg: Prosjektvurdering

Kopi: Marielle Paulsen Dyre Halsesgate 11 7042 TRONDHEIM

Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.

Avdelingskontorer / District Offices

OSLO NSD: Universitetet i Oslo, Postboks 1055 Blindern, 0316 Oslo. Tel: +47 22 85 52 11. medhjo@nsd.uib.no
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TRONDHØI NSD: SVE, Universitetet i Tromsø, 9037 Tromsø. Tel: +47 77 64 43 36. redna@svs.uib.no



Ifølge prosjektmeldingen skal det innhentes skriftlig samtykke basert på muntlig og skriftlig informasjon om prosjektet og behandling av personopplysninger. Personvernombudet finner informasjonsskriv mottatt 27.09.2013 tilfredsstillende utformet i henhold til personopplysningslovens vilkår, såfremt dato for anonymisering endres til 15.05.2014, jf. meldeskjema og epost.

Questback. er databehandler for prosjektet. Personvernombudet forutsetter at det foreligger en databehandleravtale mellom Questback. og NTNU for den behandling av data som finner sted, jf. personopplysningsloven § 15. For råd om hva databehandleravtalen bør inneholde, se Datatilsynets veileder på denne siden: <http://datatilsynet.no/verktoy-skjema/Skjema-maler/Databehandleravtale---mal/>

Innsamlede opplysninger registreres på privat pc. Personvernombudet legger til grunn at veileder og student setter seg inn i og etterfølger NTNU sine interne rutiner for datasikkerhet, spesielt med tanke på bruk av privat pc til oppbevaring av personidentifiserende data.

Prosjektet skal avsluttes 15.05.2014 og innsamlede opplysninger skal da anonymiseres. Anonymisering innebærer at direkte personidentifiserende opplysninger som navn/koblingsnøkkel slettes, og at indirekte personidentifiserende opplysninger (sammenstilling av bakgrunnsopplysninger som f.eks. yrke, alder, kjønn) fjernes eller grovkategoriseres slik at ingen enkeltpersoner kan gjenkjennes i materialet.