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Perceptions of knowledge work
ICT-professionals' job satisfaction and turnover intentions

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Subject: Governance of Digitalization	
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Title: Perceptions of knowledge work – ICT-professionals' job satisfaction and turnover intentions	
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Abstract:

Digitalization and increasing knowledge work have set new conditions for working life. At the same time as increasing networking, co-operation and workloads, there has also been an increase in problems with coping, social functioning and mental burden related to work. The purpose of this study is to improve managerial competence in IS/IT work. The aim is to find recommendations for management to better affect ICT-employee willingness to stay in company service. These recommendations can be seen as preventive measures against voluntary turnover. To be able to form these guidelines, this research intents to identify the factors that most increase and decrease ICT-professionals' job satisfaction in the workplace. A comprehensive literature review was performed to cover concepts such as job satisfaction, motivation, commitment, turnover as well as management of specifically knowledge organizations and the results were used as a basis for the methodology choices of the empirical study. Data were collected through a survey questionnaire which was distributed online, as well as structured interviews with ICT-professionals. The results show that in the motivating factors lies big potential for the employer to increase job satisfaction of these ICT-professionals. The results indicate that by enhancing advancement possibilities and especially improving feedback from results and giving more recognition for success, the employer can increase feelings of achievement in the employee which not only affects positively on job satisfaction but also empowers the employee and leads to feelings of responsibility. This is meaningful because high levels of commitment and job satisfaction correlate with a willingness to stay in the organization's service. This, in turn, is in relation to corporate metrics, like productivity, profit, customer satisfaction, employee turnover decrease, as well as the general health and well-being of the workforce.

Date: 9.6.2020	Number of pages: 94

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Acknowledgement

First of all, I would like to thank profoundly my supervisor Professor Gunilla Widén for her guidance, advice and support throughout the writing process of this Master's thesis. I valued the nudges forward when I was doubting my own resources along the process and I was honored to have her experience for me to apply in this thesis.

I would also like to thank Dr. Shahrokh Nikou for providing me support regarding this thesis and for the education at Åbo Akademi University.

I would like to acknowledge the participated organizations and thank the participated individuals for sharing your feelings with me. Without you, this research would not have been possible. I am ever grateful for your most valuable comments and answers.

Special thanks for all the teachers at Åbo Akademi University Master's Degree Program in Governance of Digitalization. I have learned a lot from you in these past two years. Also thank you for all my classmates in the program.

To my parents, who have always supported me in personal and professional life.

Finally, I would like to express my deep gratitude to my beloved sons Niilo and Vilho, as well as to my dear husband Matti, for all your love, continuous support and encouragement during all these years and in the writing process of this thesis.

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Åbo, 2020

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1 Introduction

1.1 Area of research

Finnish research on work well-being has a long and robust tradition and it is also internationally respected. The focus in research has expanded from studying traditional, physical conditions and their risks to studying mental burdening, the social functioning of the work community, productivity in the workplace, individual coping and work ability. This is because of the vigorous changes in working life that have required more networking, co-operation, increasing workloads and expectations, as well as globalization (Finnish Government, 2005).

Digitalization and increasing knowledge work have set new conditions for working, work demands and work strain. We need new ways to increase work productivity, safety and health. Data processing skills are essential in current and future working life. This kind of work requires much from human brain. Workers need to observe, multitask, remember, decide and solve. Information technology is our main tool. It is of utmost importance to recognize what demands increasing knowledge work actually sets and what disturbing factors there might be for these. Human data processing capability has its species-related limits the same way as in physical ability (Finnish Institute of Occupational health, 2020).

Statistics Finland has made work condition barometers that have shown several negative long-term trends, including increased haste, mental burden and stress. Positive development has happened with improved education levels of workers, increased influencing possibilities in work and high general job satisfaction levels. What have been highlighted recently are the problems related to psychosocial work environment. This is due to competition that is becoming ever stronger in the private sector and insufficient personnel in the public sector. Working conditions also differ in relation to profession, education and skills, terms of one's contract and age. In addition, health risks are distributed unevenly. Work can develop a person's resources at its best, but be a health risk at its worst (Kinnunen, Feldt & Mauno, 2005, p. 8-9).

According to Statistics Finland, digitalization has penetrated Finnish working life. Based on their 2018 Quality of Work Life Survey, 90 per cent of wage and salary earners use digital applications at work. The use of digital devices, personal digital skills and personal experiences of how digitalization affects work are, however, distributed unevenly (Statistics Finland, 2020).

Statistics Finland's above mentioned surveys describe changes in wage and salary earners' working conditions for over four decades, since 1977. The latest Quality of Work Life Survey shows that "working life has developed positively in many respects: for example, wage and salary earners' views on the atmosphere in the workplace, realization of gender equality and social relationships in the workplace have improved clearly starting from 2008. Work engagement has increased. On the other hand, problems with coping at work have clearly increased from 2013. These problems are more common among women than men. Various physical and mental symptoms have become more common, especially among young and middle-aged wage and salary earners" (Statistics Finland, 2020).

However, Kinnunen et al. (2005) state that recent work psychology has started concentrating on the positive. Instead of focusing only on pathological problems and their reasons, psychologists have started placing more emphasis on studies concerning well-being, health and preventive measures (Kinnunen, Feldt & Mauno, 2005, p. 56).

How we behave in working life, depends on both our will and ability. This thesis examines the motivation part and tries to research employees' inner thoughts that indicate problem areas. The purpose of this thesis is to provide recommendations for management to better affect ICT-employee's willingness to stay in company service. These recommendations can be seen as preventive measures against voluntary turnover. To better understand the context of organizational behaviour, the researcher will examine some key theories of employee motivation. Factors affecting job satisfaction will also be addressed. Management should be expected to be aware of these factors. According Kuoppala et al. (2008) good leadership seems to improve job satisfaction and job well-being as well as decrease sickness

absenteeism and disability pensions. The relationship between leadership and job performance, however, remains unclear. Effects of psychosocial work factors on health are mediated through the organizational structure and function. One of the important modifying factors between organizational factors and health is supervisory leadership. Kuoppala et al. (2008) state that it most likely affects not only the productivity and effectiveness of an organization but also the health and well-being of employees. The best way to affect health problems is from levels of leadership, work environment, and working conditions (Kuoppala et al., 2008).

As digitalization is only accelerating, we can neither turn back time nor stop development (nor do we want this), but we can rationally govern and harness these processes. More importantly, we can actively guide them in the desired direction and this starts by being aware of organizations' and individuals' current state.

1.2 Overall aim of the thesis and research questions

The overall aim in this thesis is to improve managerial competence in IS/IT work, but also secondarily to contribute to improving general work well-being from an individual's perspective, especially in knowledge work. The objective is to shift the attention back to the individual doing the work. The employer should consider employee needs when setting the conditions for work. It is also a value choice in itself to focus on the individual. Without individuals, there would be no collective work done either. More importantly, workers are more than mere resources. In this aspect also organizational values will be researched. Values affect the way matters are actually conducted in an organization.

The objective of this thesis is obtained by first identifying the most relevant factors for job satisfaction through a literature review. As this topic is cross-disciplinary, the researcher will derive from psychology, human resources and leadership studies as well. The specific features of knowledge work and its management are described. These insights have then been used to design the empirical study.

Through the quantitative and qualitative data collection and data analysis, the researcher attempts to provide recommendations for improving managerial competence in IS/IT work contributing to the wellbeing of individuals.

With this in mind, the research questions are posited as follows:

RQ1: What factors decrease ICT-professionals' job satisfaction in the workplace the most?

RQ2: What factors increase ICT-professionals' job satisfaction in the workplace the most?

RQ3: What can the employer do to support ICT-professionals' job satisfaction?

These questions will first help to understand, what the influencing factors of specifically ICT-related knowledge workers' job satisfaction are (describing a phenomenon) and secondly, to perceive what the participating ICT-professionals suggest could be improved by their employers and use this knowledge to form guidelines (developing good practice). The researcher wishes to attain some concrete measures for the latter objective. The study will be conducted with a mixed methods of both quantitative and qualitative nature.

1.3 Structure of the thesis

This thesis begins by introducing the topic and emphasizing the importance of this kind of research. The second and third chapter of the thesis are the literature review which provide an overview to the topic and context in which knowledge workers and the research participants of this study work in. It will clarify the realities of the current society and knowledge work environment, as well as the realities of people as psychological-physiological-social beings. Here are taken into account motivating factors that are general to all people as well as occupation-specific features. These are followed by theoretical backgrounds that set the framework for actual research.

In chapter four, the methodology used in this research will be explained. The data collection method as well as the data analysis method will be discussed. The actual empirical framework will be introduced. Study object is presented and the empirical study process reviewed. Chapter five discusses the analysis and interpretation of results. Main findings are presented.

Chapter six focuses on discussion of the results of this study and their reflecting on the literature. This is followed by the final conclusions where the researcher attempts to provide answers to the research questions. Additionally, theoretical contributions and practical implications are discussed. Limitations are acknowledged and proposals for future research suggested.

2 Work well-being, job satisfaction and motivation

2.1 Definition of work well-being and job satisfaction

According to Finnish Institute of Occupational health (FIOH), well-being at work means safe, healthy and productive work that professionally skilled workers and work communities do in a well-managed organization. Professionals and communities regard their work meaningful and rewarding and supportive to their life control. Well-being at work is the joint responsibility of both employee and employer. It is an investment that can pay back several times greater than what was invested. FIOH further states that according to research, well-being at work has a significant relation to corporate metrics like productivity, profit, customer satisfaction, employee turnover decrease, sick leaves and injuries (Finnish Institute of Occupational health, 2020).

According to International Labour Organization, "workplace well-being relates to all aspects of working life, from the quality and safety of the physical environment, to how workers feel about their work, their working environment, the climate at work and work organization. The aim of measures for workplace well-being is to complement occupational safety and health measures to make sure workers are safe, healthy, satisfied and engaged at work. Workers' well-being is a key factor in determining an organization's long-term effectiveness. Many studies show a direct link between productivity levels and the general health and well-being of the workforce" (ILO, 2019).

Job satisfaction is one essential part of overall well-being at work. It is an attitudinal variable that reflects how people feel about their jobs overall, as well as various aspects of the jobs. Job satisfaction can be described as the extent to which people like their jobs (global satisfaction) or aspects of their jobs (facet satisfaction) (Spector, 2012, p. 216).

According to Spector, many prior studies have shown that job satisfaction levels are not the same across countries. Scandinavian countries have been ranked high among these surveys. The surveys do not however shed much light on the reasons

for different feelings about work in different countries. One explanation are cultural values that some scholars have assessed (e.g. Hofstede, 2001). These cultural values are: (1) individualism/collectivism, (2) masculinity, (3) power distance and (4) uncertainty avoidance (Spector, 2012, p. 218).

It is noteworthy, that as digitalization has changed the ways of working and living, mental disorders (F-diagnoses) have increased their portion as a cause for sick leaves and disability pensions in Finland. The real reason behind the sick leave is often exhaustion even if the person is away because of a physical symptom. Finnish occupational health psychologists state that today the health threats of working life are more often psychological and social of character and for example recognizing change as burdening and how to control it, is still in early steps. One way to develop Finnish occupational health law could be a compulsory workload investigation, which is now rarely done (Teikari & Karas, 2020).

Finnish Institute of Occupational Health has produced a web site for managers and supervisors called *Hyvän mielen työpaikka*, to act as a tool for supporting mental working ability of personnel (FIOH, 2020). Indeed, this appears to be one of the management's biggest concerns in Information Age. When beginning to examine the organization from a mental perspective, we have to however start from defining organizational behavior. Organizational behavior means behavior of individuals and of groups in organizations (Lämsä & Hautala, 2004). Attitudes toward work can be used for measuring organizational behavior in the workplace.

2.2 Organizational behavior and organizational culture

Organizational behavior is the study of the structure, functioning and performance of organizations and the behavior of groups and individuals within them (Huczynski & Buchanan 2007). According to Armstrong and Taylor, organizational behaviour theory is based on the main behavioural science disciplines. These fields, that study human behavior, include psychology, social psychology and sociology (Armstrong & Taylor, 2014).

Organizational culture can be described as "the way we do things around here". It is however more complex than just that. Organizational culture consists of shared meanings that act as a basis for communications and mutual understanding (Armstrong & Taylor, 2014). Values, norms, beliefs, attitudes and assumptions all affect organizational culture. This culture affects how people behave. Organizational culture can be described with values, norms, artefacts and management or leadership style (Armstrong & Taylor, 2014).

Values are beliefs of what's best for the organization or what should happen. They are either expressed spoken out or implicit. What matters is are they embedded in the culture and reinforced by managerial behavior. If they are not used then they have no effect (Armstrong & Taylor, 2014). The task for managers is to clarify their values so that they "form a coherent pattern that fits the needs and the orientation of the organization and society as a whole. Unlike the more innate factors that influence management style, values are learned and determined by culture and by social institutions" (Benfari, 2013).

Norms are unwritten rules of behavior telling people what they are supposed to be doing, saying etc. They can be enforced by the reactions of co-workers. They guide silently the behavior but they are never spoken out (Armstrong & Taylor, 2014).

Artefacts are visible and tangible aspects of the organization that tell a lot about the culture. They can include working environment, language and tone used in e-mails, letters and telephone, how welcoming the company is to visitors etc. All of these are revealing in part (Armstrong & Taylor, 2014).

Management styles are a significant part of organizational cultures. They mean the style the manager uses to deal with people. It is usually described as charismatic vs. non-charismatic, autocratic vs. democratic, controller vs. enabler and transactional vs. transformational. Most managers are somewhere in between these extremes. It can also be dependent of the situation. But anyhow it affects the organizational culture. A certain style may even become as a norm of behavior in the company (Armstrong & Taylor, 2014). According to Benfari (2013),

understanding of management style begins with understanding human nature. "For managers and leaders, the rational and humane approach is to understand and accept the reality of different psychological types. Conflicts that emerge from a clash between psychological types can be turned into a positive force if managers understand how to balance roles and responsibilities to play to everyone's strengths" (Benfari, 2013).

2.3 Motivation

Motivation as a subject has been extensively researched since the early 20th century. According to Armstrong and Taylor (2014), motivation theories have been used and are still being used to inform decisions on how to get employees to perform better. Motivation is a close term to commitment and engagement but they do not mean the exact same thing. Motivation is "the force that energizes, directs and sustains behavior". The term motivation comes from the Latin word for movement (*movere*) (Armstrong & Taylor, 2014).

Arnold et al. (1991) have described three components for motivation. These are (1) direction – what a person is trying to do, (2) effort – how hard a person is trying and (3) persistence – how long a person keeps on trying (Armstrong & Taylor, 2014). Spector describes that motivation is concerned with a desire to achieve some goal; that it derives from what a person wants or needs (Spector, 2012).

2.3.1 Intrinsic motivation

There are two types of motivation. Intrinsic motivation happens when individuals feel that their work is important, interesting and challenging and that it provides them with a reasonable degree of autonomy, opportunities to advance and possibility to use and develop their skills. This motivation derives from the work itself and is not created by external incentives. Intrinsic motivation can be enhanced by job design (Armstrong & Taylor, 2014, p.170).

The job characteristics theory by Hackman and Oldham (1976, 1980) is probably the most influential theory of how job characteristics affect people (Spector p. 31). The main idea remains unchanged that people can be motivated by intrinsic satisfaction they find in doing job tasks. Enjoyment and meaningfulness will lead to motivation and people performing their jobs well. There are five core characteristics of jobs that induce psychological states that in turn lead to job performance, job satisfaction, motivation and turnover. These five core characteristics are (1) skill variety (the number of different skills necessary to do a job), (2) task identity (whether or not an employee does an entire job or a piece of a job), (3) task significance (the impact a job has on other people), (4) autonomy (the freedom employees have to do their jobs as they see fit) and (5) job feedback (the extent to which it is obvious to employees that they are doing their jobs correctly). The first three combined induce experienced meaningfulness of work. Autonomy leads to feelings of responsibility. Feedback leads to knowledge of results of the products of work. These three psychological states in turn contribute to important outcomes of job satisfaction and motivation of employees (Spector, 1997, p. 31).

According to job characteristics theory, the above mentioned five core characteristics determine how motivating a job is likely to be (Spector, 1997). Motivation Potential Score (MPS) is then determined mathematically using following formula:

MPS = (Skill variety + task identity + task significance) /3 x autonomy x feedback

The higher the score, the more motivating and satisfying the job will be, as can be seen from the Figure 1. Also, job characteristics theory states that people who prefer challenge and interest in their work will be happier and more motivated if they have complex jobs. The theory includes Growth need strength (GNS) as a moderator between the variables. The theory states that the motivating effects of job satisfaction will only occur for individuals who are high on GNS (Spector, 1997, p. 33-34).

Core Job Characteristics → **Critical Psychological States** → **Outcomes**

Skill Variety

Task Identity → Experienced Meaningfulness of Work

Task significance

High Internal Work Motivation

Autonomy → Experienced Responsibility for the Outcomes of the work

High Quality Work Performance

Feedback from the job → Knowledge of Actual Results of Work Activities

High Satisfaction with Work

Moderators

Employee's Growth Need Strength (GNS)

Figure 1. Hackman & Oldham Job Characteristics model (1976)

2.3.2 Extrinsic motivation

Extrinsic motivation happens when things are done to or for people in order to motivate them. These can be rewards like incentives, increased pay, praise or promotion or punishments like disciplinary action, withhold pay or criticism. The difference between these two types of motivation is that even if extrinsic motivators can have a powerful and immediate effect, they do not last very long, whereas intrinsic motivators are likely to have deeper and long-term effect (Armstrong & Taylor, 2014, p. 171).

2.4 Motivation theories

According to Spector, work motivation theories are usually concerned with the reasons, other than ability, why some people perform their jobs better than others. If we presume that employees have the necessary ability and there are relatively

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few constraints on performance, high motivation should lead to good job performance (Spector, 2012, p. 194).

Motivation theories view employee motivation from different angles. Still, they do not necessarily lead to different predictions about behavior. Motivation theories can also be examined in a continuum from distal to proximal, where distal theories are far removed from behavior and proximal theories study processes that are close to behavior or can lead to a specific kind of behavior (Spector, 2012, p. 196).

2.4.1 Instrumentality theory

Instrumentality theory assumes that punishments and rewards are the best ways to shape behavior. Taylor's (1911) early scientific management method has affected this theory, that states people will be motivated to work if rewards and penalties are tied directly to their performance. This theory relies heavily on external controls and fails to take into account other human needs (Armstrong & Taylor, 2014).

2.4.2 Content or needs theories

The aim of needs theories by Maslow (1943), McClelland (1961), Herzberg (1968), and Deci & Ryan (2000) was to identify the factors associated with motivation. The basis of motivation is in needs. These theories believe that an unsatisfied need creates tension and disequilibrium. The path for behavior is created to satisfy this need and restore a state of balance. Earlier need theories have given way to more cognitive evaluation processes in work psychology, but the researcher finds them relevant to discuss in this study.

Maslow's hierarchy of needs

Abraham Maslow, an American psychologist, wrote his theory of the hierarchy of needs in 1943 for his paper *A theory of human motivation*. According to Maslow all human motivation is generated from basic needs. The fulfillment of these is necessary for physical and psychological health. He listed five basic needs:

physiological, safety, love/belonging, esteem (social needs) and self-actualization. Later, he added yet transcendence. The most basic needs have to be satisfied before a person will focus motivation on upper needs. The lowest level, physiological needs, mean the physical necessities for survival, like air, food, water. Second level, safety needs, mean needs for security and shelter. Third level, love and belonging needs, mean need for love, affection, and affiliation with others. Fourth, esteem needs, mean self-respect and respect of others. Fifth is self-actualization, in which a person desires to become everything a person is capable of becoming, reaching one's potential (Maslow, 1943, Spector, 2012, p. 196-197).

Maslow assumed that a need has to be unmet to be motivating and that people are motivated by the lowest-level need that is unmet at the moment. Therefore, a hungry person would not be concerned with danger and might steal food regardless of the punishment. Maslow admitted however, that there are certain individuals that find higher-order needs more important than lower-level ones but that this is more of an exception. Many Western individuals seldom actually experience deprivation of the first four needs and therefore the basic needs are not motivating for them (Maslow, 1943; Spector, 2012, p. 197), see Figure 2.
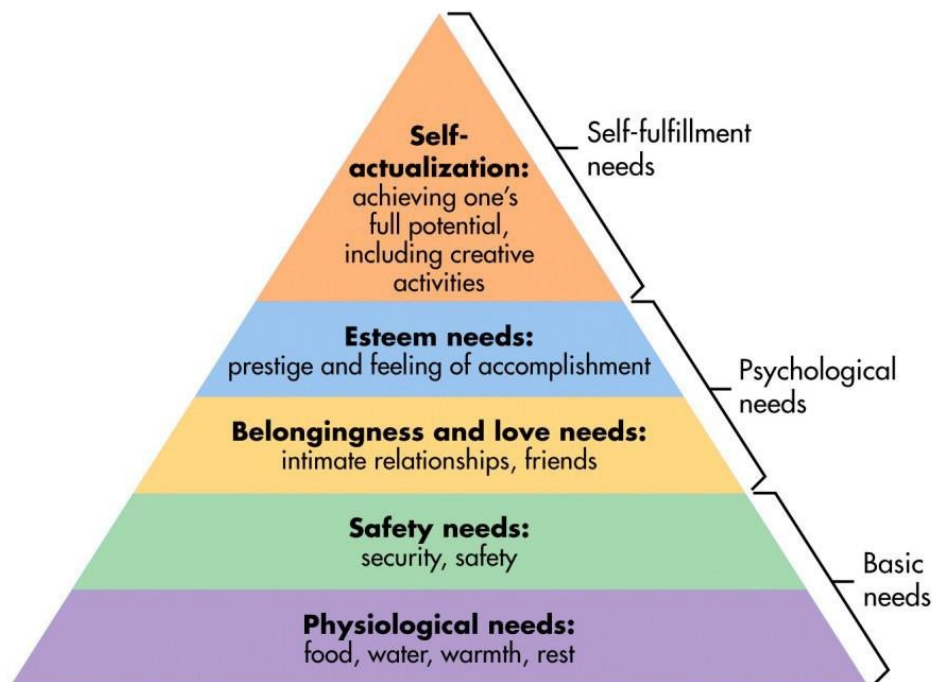
Figure 2. Maslow's needs hierarchy

Research on Maslow's Need Hierarchy theory has not been very supportive, mainly because it is so vague that it is hard to be tested reliably. Despite the lack of empirical support, it has had a positive impact on organizations and it helps to focus attention to the importance of employee needs (Spector, 2012, p. 197).

Alderfer's ERG-theory

In Alderfer's (1972) theory, three primary categories of needs are formulated: 1. Existence needs (hunger, thirst, pay, fringe benefits or working conditions), 2. Relatedness needs (acceptance, understanding, confirmation or influence) and 3. Growth needs (becoming what you can) (Armstrong & Taylor, 2014, p. 173).

McClelland's need theory

McClelland has developed a theory (in 1961), which is based on studies of managers. McClelland wrote about three needs of which the need for achievement is most important. The other two are the need for affiliation and the need for power (Armstrong & Taylor, 2014).

Herzberg's two factor theory

Another important theory concerning job satisfaction, is psychologist Frederick Herzberg's two-factor theory (also known as motivation-hygiene theory, 1968). It states that motivation comes from the nature of the job itself rather than from external rewards or job conditions. The human needs that work addresses are divided into two categories – those that derive from the animal nature of human beings, such as the physiological needs, and those relating to the higher level and uniquely human ability for psychological growth.

Those aspects that rise from animal needs are called hygiene factors, and they include pay, supervision, coworkers and organizational policies. Those aspects that rise from growth needs Herzberg calls motivator factors and these include achievement, recognition, responsibility, and the work itself. Herzberg stated that

only way to motivate employees and make them feel satisfied is to handle properly the motivator factors. Herzberg suggests job enrichment (Herzberg, 2003). Hygiene factors cannot lead to motivation or satisfaction with work but if they are poorly handled, they can lead to dissatisfaction (Spector, 2012, p. 197), see Figure 3.

Figure 3. Herzberg's two-factor theory

Self-determination theory by Deci & Ryan

Deci and Ryan (2000) state that individuals are motivated by the need to achieve three fundamental goals: striving for competence, autonomy and relatedness (Armstrong & Taylor, 2014).

2.4.3 Process theories

In process theories the focus is in psychological processes and forces that affect motivation as well as on basic needs. Another term for it is cognitive theory because it refers to workers' perceptions of their environment. The main process

theories are interested in reinforcement, expectancy, goals, equity and cognitive evaluation (Armstrong & Taylor, 2014).

Reinforcement theory

This theory has been formulated already in 1911 by Thorndike. Reinforcement theory states that people learn over time about their actions and the consequences of them and this guides them in their future behavior. If they believe that something has worked previously, they will do it again. This theory has been criticized for forgetting the existing context in which choices are made.

Expectancy theory

According to expectancy theory, motivation will be high when a person knows what to do in order to get a reward, expect that they will be able to get the reward and expect that the reward will be worthwhile. Past experience is seen as an inadequate guide to the implications of change of situations. Motivation is only likely when a clearly perceived and usable relationship exists between performance and outcome (Armstrong & Taylor, 2014).

Goal-setting theory

One of the most used theories among organizational psychologists is the goal-setting theory (Locke & Latham, 1990). The theory states that people's behavior is motivated by their internal intentions, objectives or goals. A goal is seen as what a person consciously wants to attain or achieve. People can be learning oriented or performance oriented in their goal-setting. People will exert effort toward accomplishing their goals and job performance is a function of the goals set. Organizations have used goal-setting to maintain or increase job performance. There are prerequisite factors for goal-setting to be effective in improving job performance (Spector, 2012, p. 208).

Equity theory

Equity theory is a justice theory that states that people are motivated to achieve a condition of fairness or equity in their dealings with other people and with organizations. According to Adams (1965), employees who find themselves in inequitable situations will be dissatisfied and emotionally tense, which they then will be motivated to reduce. The term inequity refers to here to a psychological state that arises from employees comparisons of themselves with others. Outcomes are compared to inputs (Spector, 2012, p. 204).

Cognitive evaluation theory

Deci & Ryan (1985) have formulated the cognitive evaluation theory, in which extrinsic rewards may destroy intrinsic motivation that comes from inherent job interest. Their studies determined that context is very important when thinking which motivator works. In high-control organizations, financial incentives actually decreased intrinsic motivation, while in high-involvement organizations both intrinsic and extrinsic motivation were increased by financial incentives (Armstrong & Taylor, 2014, p. 176).

2.5 Job satisfaction

Job satisfaction can be described as the attitudes and feelings people have about their work. The levels of job satisfaction or dissatisfaction are influenced by: (1) The intrinsic motivating factors (the job itself, Hackman and Oldham), (2) The quality of supervision (The Hawthorne studies in 1939 stated that supervision is the most important determinant of employee attitudes) and (3) Success or failure (success obviously creates satisfaction and vice versa) (Armstrong & Taylor, 2014, p. 177).

In the early stages of job satisfaction studies, need fulfillment theories were dominating the field. These need approaches have however given way to more cognitive-focused studies. Nowadays job satisfaction is understood as a positive attitude towards the job, in which the affectionate elements are emphasized. Individual is not working merely to satisfy or fulfill certain needs but also to achieve goals that he/she has set himself/herself (Kinnunen et al., 2005, p. 60).

2.6 Motivation strategies

Motivation strategies are used "to create a working environment and to develop policies and practices that will provide for higher levels of performance from employees. They include the design of intrinsically motivating jobs and leadership development programs and the development of total reward systems and performance management processes." (Armstrong & Taylor, 2014, p. 183).

3 Commitment, turnover and management of knowledge organizations

3.1 Commitment

Organizational commitment involves three things: (1) An acceptance of the organization's goals, (2) A willingness to work hard for the organization and (3) The desire to stay with the organization. Meyer et al. have developed a three-component commitment perspective (1993). Affective commitment occurs when the employee wishes to remain within the organization because of an emotional attachment. Continuance commitment exists when a person must remain with the organization because he/she needs the benefits and salary or cannot find another acceptable job. Normative commitment comes from the values of the employee. The person believes that he/she owes it to the organization to remain out of a sense that this is the right thing to do (Spector, 2012, p. 235).

Meyer et al. have also developed an idea of occupational commitment. This means commitment to your occupation or profession rather than a certain organization (Spector, p. 239). This is often the case with ICT-professionals. ICT-professionals are more loosely bound to their employer than to their own profession group. This is related to the high turnover numbers among ICT-professionals. According to research recruiting skilled workforce, developing, rewarding, and supporting career development are important when luring ICT-professionals and in keeping them in-house (Kleingartner & Anderson 1987, p. 129-130).

Work involvement means individual's identification to his/her job, when the work role becomes an integral part of his/her self-concept and life. General work involvement is a relatively permanent attitude towards work. Specific job involvement means committing to a certain job assignment and that is dependent on how that assignment fulfills the needs of that individual. Career commitment means more committing to one's career and its development. Occupational commitment plays a major role in career commitment. Organizational commitment on the other hand means individual's commitment to his/her work organization (Kinnunen et. al, 2005, p. 64).

Commitment tells about the feelings of employees about their organization. The three characteristics of commitment studied by Mowday et al are: (1) a strong desire to remain a member of the organization, (2) a strong belief in and acceptance of the values and goals of the organization and (3) a readiness to exert considerable effort on behalf of the organization. In studies employee commitment has led to improved organizational performance (Armstrong & Taylor, 2014).

Commitment can also be divided into five different dimensions as Morrow has done (1993); work ethics, affective commitment, career commitment, continuance commitment or commitment to the work itself (Viitala, 2008).

According to Armstrong and Taylor (2014), human resources department can advance commitment with certain procedures. These key points include that values and aims of management need to be communicated, management needs to know that commitment is a two-way process and management has to develop a climate of trust and a positive psychological contract (Armstrong & Taylor, 2014, p. 190).

3.1.1 Work engagement

A new term in work well-being is work engagement that is the opposite of burnout. Maslach & Leiter (1997) have described work engagement to consist of employee's energy, involvement and efficacy experiences. Schaufeli (2002) on the other hand has approached the term from another perspective, where burnout and engagement are not opposite phenomenons but separate, and they cannot be measured on the same method. Work engagement is according that, a rather permanent positive emotion- and motivation state, which can be described with experience of vigor, dedication and work absorption (Kinnunen et al., 2005).

According to Viitala, people sometimes speak of disengagement when they actually mean turnover intentions. Engagement is a person's psychological relationship to the organization he/she works in, another term for this is psychological contract. If

this psychological contract is bad then the threshold to leave the company is smaller (Viitala, 2008).

Engagement happens when employees are committed to their work and their organization and they are motivated to strive for high performance. Armstrong states interestingly that "(Reilly and Brown have noted that) the terms 'job satisfaction', 'motivation' and 'commitment' are generally being replaced now in business by 'engagement' because it appears to have more descriptive force and face validity" (Armstrong & Taylor, 2014).

3.1.2 Psychological contracts

A psychological contract can be described as "the perceptions of both parties to the employment relationship, organization and individual, of the reciprocal promises and obligations implied in that relationship" (Armstrong & Taylor, 2014).

Rousseau (1989) has divided psychological contracts into two categories: transactional psychological contracts and relational psychological contracts. Transactional psychological contracts between the employee and the organization remind of trade contracts because financial founding is essential in them. They may be uncertain or short-termed and the main motivator for the employee is the salary paid for work. Also the employer does not expect any other performance than what has been agreed upon. Relational psychological contracts on the other hand are longer-term employments and they involve also other aspects than just financial gains. Both sides invest more than just money and work performance. Both sides can sometimes expect altruistic actions from the other party. This contract is based on trust and loyalty. Employee can trust his/her contract to continue if he/she does her job properly. The two types Rousseau (1989) has described, are usually two extremes and the actual relationship is somewhere between the line (Viitala, 2008).

The nature of the psychological contract has connection to employee job satisfaction, willingness to stay in the organization's service, as well as to his/her respect for the organization. In transactional psychological contracts, the employee works only for money. In relational psychological contract the employee feels that he/she is part of that company and identify themselves to it (Viitala, 2008).

Psychological contract should be taken seriously because it is strongly linked to higher commitment to organization, higher employee satisfaction as well as better employment relations (Armstrong & Taylor, 2014, p. 421).

3.2 Employee turnover

There are two types of turnover, voluntary or involuntary. Involuntary turnover refers to the dismissal of employees, whereas voluntary turnover occurs when employees themselves resign. This thesis focuses on voluntary turnover intentions.

Turnover can be caused by something else than just poor commitment. Young and still studying employees are natural to leave. Sometimes increasing payments and improving conditions may reduce turnover but more often mere raises to payments are not the solution for turnover problems. Moreover, typical reasons have been in studies the following: work does not come up to expectations, the lack of support and attention of superior, poor induction and insufficient skills, narrow or dull assignments and lack of responsibility and independence, too few advancement possibilities and lack of respect for personnel as well as other managerial problems (Viitala, 2008).

Turnover is not solely a negative issue. It brings fresh ideas into the company. Problematic are however the costs, loss of competence, the loss of investments that have been made to develop the competence and loss of valuable information regarding the company. Turnover can be a sign of bad management and atmosphere. It has to be measured consistently to be able to intervene well in advance when disturbing signs emerge (Viitala, 2008).

Ways to commit personnel are for example good HR politics, which include competitive salaries or other compensating benefits, good management / leadership, possibilities for learning and development, possibilities for work-life balance and interesting work. Giving realistic expectations already in recruitment process and proper induction are also important (Viitala, 2008).

Most theories of turnover view it as a result of employee job dissatisfaction. People who dislike their jobs, will try to find alternative employment. Studies have consistently shown correlation between job satisfaction and turnover. Furthermore, it seems certain that this correlation is causal – job dissatisfaction leads to turnover (Spector, 1997, p. 62), see Figure 4.
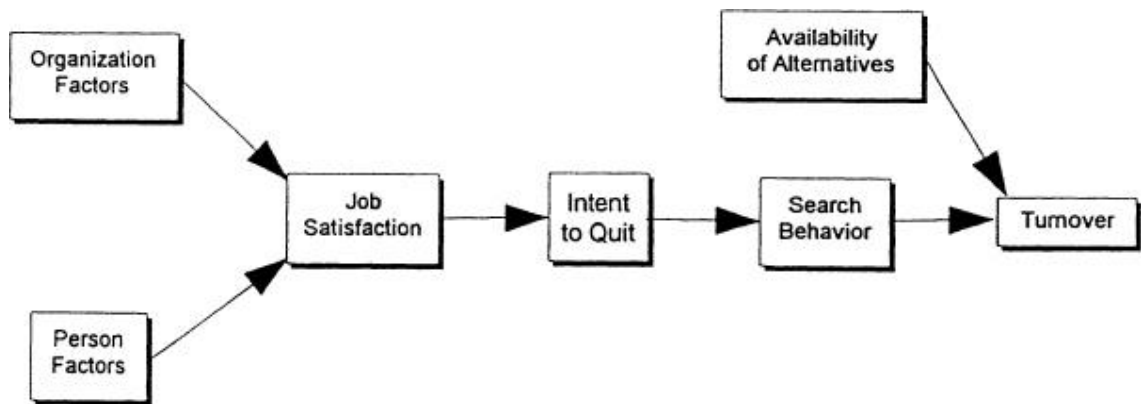
Figure 4. Model of employee turnover as a function of job satisfaction and unemployment rate (Spector, 1997)

Turnover intention can be described to be a conscious and deliberate willfulness to leave the organization. It is typically measured with reference to a specific interval, e.g. within the next 12 months. It is the last in a sequence of withdrawal cognitions (thinking of quitting, searching for alternative employment etc.) (Tett & Meyer, 1993).

"Despite their importance in affecting work attitudes and behaviours, the role of employees' justice perceptions in the turnover process has not been adequately addressed in the current literature (Griffeth et al., 2000 as cited in Loi et al., 2006). Past studies of organizational justice have identified two major types of justice perceptions: distributive justice, which refers to fairness perception of outcomes; and procedural justice, which refers to the fairness perception of procedures used

to decide the outcome allocation." "The underlying processes through which organizational justice leads to employee turnover remain largely unknown" (Loi, Hang-Yue & Foley, 2006). This is a noteworthy finding also regarding this particular research.

3.3 Employee retention

Ghosh et al. (2013) describe that when an employee quits an organization, it is a difficult situation both for the organization as well as other employees. It is a setback professionally, it disturbs the social life, teamwork, superior-subordinate relationships, and there is a negative effect on the company's relationships with other organizations. Productivity drops because of the learning curve of understanding the work task and the organization. Moreover, the firms do not merely lose their human capital but also the competitors potentially gain these assets (Ghosh, Satyawadi, Prasad & Shadman, 2013).

"The cost of employee turnover entails the expenditure already incurred on training and development of employees who leave the organization, and the amount to be spent on recruitment, selection and training of new incumbents." Ghosh et al (2013) explain that this kind of rapid employee turnover is not good for the image of the company also as a secure employer. Keeping in perspective all such costs of employee turnover, organizations have understood that it is important to retain employees and create a stable workforce, and companies have started focusing on the formulation and implementation of an effective retention strategy to effectively reduce employee turnover. Thus, employee retention strategies have gradually become an essential part of an organization's overall business strategies (Ghosh et al., 2013).

Armstrong, Brooks and Riemenschneider (2015) state that the supply of information systems professionals is being outstripped by the demand, which highlights retention as an important strategic issue. The question is how to keep these valued IS professionals during this high demand (Armstrong et al., 2015).

Armstrong et al. (2015) have studied the connection between exhaustion (and burnout) from IS career experience and turn-away intentions. They have used the Job Demands-Resources model in their study, which is discussed below. They found out that perceptions of fairness are very important to individuals across any particular job and across the entire IS career.

Job Demands-Resources

One important theory in work psychology according to Kinnunen et al. (2005) is Job Demands-Resources model of Demerouti et al. (2001) and Schaufeli & Bakker (2004) that is based on the assumption that work features can be divided to demands and resources (Kinnunen et al., 2005, p.57) Kinnunen et al. (2005) state that the job demands mean physical, psychological, social or organizational features of the job that demand both mental and physical effort from the employee. These can be noise, time pressure, poor atmosphere or uncertainty of continuance. Job resources on the other hand mean the physical, psychological, social or organizational factors that help to achieve the goals set for the work, which reduce the demand factors and their negative consequences and enhance individual growth and development. Resources can include e.g. good working conditions, influencing possibilities, feedback, social support and certainty of job continuance (Kinnunen et al., 2005, p. 57).

The demand factors are expected to initiate an energy path that leads to increased problems in coping and then to deteriorated health and lower working ability. The resource factors on the other hand are expected to initiate a motivation path that advances the employee commitment to the work task and therefore the commitment to the organization. These paths can also join. Resource factors may diminish problems in coping or work unwell-being may lessen the commitment to organization and increase voluntary turnover intentions. The division is however problematic in a way that some factors may be demand factors and resource factors simultaneously (Kinnunen et al., 2005, p.57).

According to Armstrong et al. "IS studies have highlighted the role of exhaustion in determining outcomes such as turnover (e.g., Ahuja et al. 2007, Moore 2000, Rutner et al. 2008), but IS researchers have recently turned their attention to turn-away intention and its connection with job-related burnout (Shropshire and Kadlec, 2012). Within the burnout literature, researchers are beginning to recognize the importance of looking at work-related experiences across one's career (Barbier et al. 2013, Jourdain & Chenevert 2010), but the relationship between career-related exhaustion and turn-away intention remains under-explored." (Armstrong et al., 2015).

3.3.1 Factors affecting retention

Commitment to a certain job has been described with individual factors, work condition factors and with an interaction aspect that combines the first two. Individual factors include gender, position level and personality. In Finnish research, either men have been more committed or there has not been found differences based on gender. Position level related studies have found out that commitment has been stronger in upper position levels. What however always affects to work commitment, are the individual's own needs and experience of the work's meaningfulness (Kinnunen et al, 2005).

Ghosh et al. have studied the factors that are strong predictors of intention to stay. Identifying these is essential in finding out those who intend to quit, in advance, so that remedial measures can be taken to retain them, especially if they are talents or key employees. Ghosh et al. gathered data of seven factors: Goal Clarity, Autonomy, Employee Engagement, Affective Commitment, Organizational Culture, Compensation and Benefits, and Normative Commitment and found out that Affective Commitment, Normative Commitment and Goal Clarity were the best predictors of employees' intention to stay or leave the organization (Ghosh et al., 2013).

Factors that influence retention according Ghosh et al. (2013), include financial rewards and employee benefits, job enrichment, training and development

opportunities, work environment, and work-life balance. They explain that Firth et al. (2004) have explored that the experience of job related stress, the range factors that lead to job related stress, lack of commitment in the organization and job dissatisfaction make employees to quit. According to Magner et al. (1996), employees feel comfortable to stay longer in positions where they are involved in some level of the decision-making process. Herman (1999) has discussed five principal reasons why employees leave companies: incompatible corporate culture, unsatisfactory relationships with coworkers, insufficient support, inadequate opportunities for growth, and dissatisfaction with compensation offered. It is important for the employer to understand why the voluntarily resigned leave (Ghosh et al., 2013).

3.4 About knowledge work and knowledge work-intensive organizations

Knowledge work and organizations that are knowledge-intensive "revolve around the use of intellectual and analytical tasks and are typically seen as requiring an extensive theoretical education and experience to be carried out successfully. Jobs are less routine and call for some degree of creativity and adaptation to specific circumstances. Examples of knowledge-intensive firms include management and IT consultancies, and high tech and R&D based companies." (Alvesson, 2004, p. 1).

Finland has long been a leading country in ICT development. The European Commission's The Digital Economy and Society Index (DESI) is "a composite index that summarizes relevant indicators on Europe's digital performance and tracks the evolution of EU member states in digital competitiveness" (European Commission, 2020). Finland reached the peak position in this in 2019. Finnish citizens' digital skills are clearly above the EU average. A high level of knowhow is one of Finland's competitive edges (Finnish Government, 2020).

Drucker (2007) has described knowledge workers as follows: "Even if employed full-time by the organization, fewer and fewer people are "subordinates" – even in fairly low-level jobs. Increasingly they are "knowledge workers". And knowledge workers are not subordinates, they are "associates". For once beyond the

apprentice stage, they must know more about their job than their boss does… Add to this, that today's superiors usually have not held the jobs their subordinates hold, as they did only few decades ago." (Drucker, 2007, p. 15).

Drucker (2007) describes that their relationship is far more like that between the conductor of an orchestra and the instrumentalist than it is like the traditional superior/subordinate relationship. Drucker says that "the superior in an organization employing knowledge workers cannot do the work of the supposed subordinate any more than the conductor of an orchestra can play the tuba. In turn, the knowledge worker is dependent on the superior to give direction and, above all, to define what the "score" is for the entire organization, that is, what are standards, values, performance and results." (Drucker, 2007, p. 17).

Drucker (2007) states also that knowledge workers need to be managed as if they were *volunteers*. They own their "means of production", which is their knowledge. Drucker agrees with Hertzberg that money alone fails to motivate them to perform but it is rather a hygiene factor; dissatisfaction with money grossly demotivates. Knowledge workers need the challenge, they have to find satisfaction from the work. They have to believe in the organization's mission and they also need continuous training. In the end, one does not manage people. The task is to lead people. Moreover, the goal is to make productive the specific strengths and knowledge of each individual (Drucker, 2007, p. 17-19).

Knowledge-worker productivity is the biggest of the 21st century management challenges according Drucker. Six major factors determine knowledge-worker productivity:

1. Knowledge worker productivity demands that we ask the question "What is the task?"

2. It demands that we impose the responsibility for their productivity on the individual knowledge workers themselves. Knowledge workers have to manage themselves. They have to have autonomy.

3. Continuing innovation has to be part of the work, the task and the responsibility of knowledge workers.

4. Knowledge work requires continuous learning on the part of the knowledge worker, but equally continuous teaching on the part of the knowledge worker.

5. Productivity of the knowledge worker is not – at least not primarily – a matter of the quantity of output. Quality is at least as important.

6. Finally, knowledge-worker productivity requires that the knowledge worker is both seen and treated as an "asset" rather than a "cost". It requires that knowledge workers want to work for the organization in preference to all other opportunities.

Drucker also describes what the emergence of knowledge worker and knowledge-worker productivity mean for the governance of the corporation. The purpose of the employing organization and of its management have to be redefined satisfying the legal owners, shareholders and owners of human capital – knowledge workers. In addition, the ability to attract and hold the best of the knowledge workers is the first and foremost fundamental precondition (Drucker, 2007, p. 123-137).

Alveson (2004) lists specific circumstances to knowledge-intensive companies as against other organizations in terms of the nature of the work and how it is managed and organized (1995). These include (1) highly qualified individuals doing knowledge-based work, using intellectual and symbolic skills in work, (2) a fairly high degree of autonomy and the downplaying of organizational hierarchy, (3) the use of adaptable, ad hoc organizational forms, (4) the need for extensive communication for coordination and problem-solving, (5) idiosyncratic client services, (6) information and power asymmetry (often favoring the professional over the client) and (7) subjective and uncertain quality assessment (Alveson, 2004, p. 21).

A strong knowledge base and emphasis on competence development are key features of knowledge-intensive companies. Alveson (2004) states three aspects of knowledge intensive work: the ambiguity of knowledge, ambiguity of its significance and the ambiguities of the results. Knowledge workers have to operate with uncertainty. Alveson also explains that emphasizing ambiguity as a general feature of not only knowledge but contemporary societies and organizations in general gives a different understanding of why experts surpass the simple acceptance that sophisticated knowledge brings about good results. One may

engage experts because they bring legitimation (institutionalized norms say they need to be used) and by using them it may be easier to avoid responsibility, if decisions appear misguided in retrospect. "Incorporating ambiguity as a key dimension challenges and reframes the conventional understanding of the nature and management of knowledge-intensive organizations." (Alveson, 2004, p. 69).

Alveson (2004) states that managing knowledge-intensive fields is partly about corporate rhetoric and image management. These offer a way to shape expectations and are a powerful management control. According to Alveson knowledge development is dependent on social interaction: "a) being perceived as having links with bodies that confirm one's knowledge-intensiveness, b) forming and maintaining specific ties with specific clients and customers and c) orchestrating the interactions involved in operating in socially and politically fine-tuned ways". (Alveson, 2004.)

Quality assessment of knowledge-intensiveness is especially hard. Only insiders (within the same knowledge field) can evaluate who is very knowledgeable in a way that is broadly credible. This sets certain norms considering knowledge-intensive companies recruiting for example. Diplomas and certificates from prestigious institutes let you know that that person has been recognized knowledgeable by other such persons in that same field. However, this is still not a guarantee that this person fits the job best. In fact, some companies according to Alveson value more creativity, flexibility or process skills than knowledge itself. But usually for a knowledge-intensive company it is crucial to nurture the image of being highly knowledgeable (Alveson, 2004).

3.5 About management of knowledge organizations

The Finnish Institute of Occupational Health has studied criteria for good management with several actors in welfare and public sector and come up with five different themes with which organizations can evaluate and improve management. These are trust and respect, co-operation and networks, diversity and individualism, competence and development and reforming and involvement.

Fair decision-making and treatment of personnel are prerequisite for trust in the work place. In addition, fair management, compliance with agreed policies, interaction that respects others, responsibility, honesty and open communication all advance trust in the work community. Trust is especially needed in times of organizational change. (Finnish Institute of Occupational health, 2020.)

Amar & Hlupic (2016) have studied leadership theories and practices that are successful in improving specifically the performance of knowledge workers. Leadership of knowledge organizations is different from the leadership of traditional organizations. Amar & Hlupic have concluded seven propositions for managers how to lead to obtain better innovation and productivity from knowledge workers. Through an extensive literature review, they discovered that management is moving towards approaches that are innovative, emerging and collaborative. These transcend the role of one individual and are more about interaction, absence of leader's control, sharing, networking and self-organizing. Moreover, there is a power shift from the leader towards the knowledge workers who can decide whether to reduce their taking part in value adding or not.

The researcher finds important to introduce these propositions by Amar and Hlupic in this thesis:

"P1. Due to the differences in the function of leading between traditional and knowledge organizations, it is very unlikely to carry out effectively the leadership responsibilities to get innovation in knowledge organizations using the traditional leadership.

P2a. In an organization where a variety of unique tasks are executed for innovation, it is unlikely for any one individual to carry out effectively the leadership responsibilities.

P2b. A knowledge organization will be led more effectively if the formal leader eschews most power and creates an environment of shared leadership.

P3. In any organization where the use of authority is low, such as a knowledge organization, an individual with "in-control" behavior (as reflected by the "Internalizer" classification based on the scores on Rotter, 1966 Internal-External scale) will increase the likelihood of his/her success as a leader.

P4. Motivation in workers to engage in behaviors that result in innovation comes from creating and operating organization as a mutualism, resulting in a collective reward or punishment for all members.

P5. In an organization, such as a knowledge organization, that works to produce innovation, lax control should be ubiquitous for building a fluid, distributed, and trust-based community.

P6. Semblance of chaos in groups engaged in innovation work is normal to occur when a functioning leader frequently relinquishes power which one of the other members of the group can assume; however, from such a chaos, a leadership homeostasis emerges and establishes an order according to which the leadership, rather than being concentrated in a leader, becomes distributed and dormant in all group members.

P7. Because of the practice of shared leadership in knowledge organizations, expecting workers to give their unquestioned loyalties to their superiors or other individuals may be detrimental to the functioning of the organization. Instead, the workers should be encouraged to commit to a set of principles."

What is emphasized in Amar and Hlupic's (2016) study, is that management should empower the knowledge workers themselves to take control of their work and in this the intrinsic motivators of each individual are essential. This demands certain supportive resources from management. There is a consensus of the need for new governance approaches for knowledge organizations. (Amar & Hlupic, 2016).

According Bolisani & Scarso (2011), management should pay attention to the links between Human Resource Management (HRM) and Knowledge Management (KM). Moreover, human resources are involved in KM in many ways, and broadly speaking the relationship between KM and HRM can be seen under two different perspectives. The first perspective sees employees as the ultimate users of the knowledge an organization possesses. Thereby, the relationship between HRM and KM can be seen in the organization of training activities, the provision of knowledge-based services, the facilitation of employees' interaction, etc. The second perspective sees that a successful implementation of KM requires

personnel that is specifically employed and trained for managing such initiatives. More importantly, they state that the practical implementation of KM requires changes in the way people are managed, for instance with the aim of influencing individuals to assume a knowledge-sharing attitude (Bolisani & Scarso, 2011).

Bartlett & Ghoshal (2002) have studied the value of human capital in building competitive advantage. They state that "a decade of organizational delayering, destaffing, restructuring and reengineering has produced employees who are more exhausted than empowered, more cynical than self-renewing. Worse still, in many companies only marginal managerial attention -- if that-- is focused on the problems of employee capability and motivation. Somewhere between theory and practice, precious human capital is being misused, wasted or lost." Bartlett & Ghoshal discovered that very few top executives have been able to transform themselves from being analytically driven strategy directors to people-oriented strategy framers. Therefore, they have claimed for three critical changes for top executives to make: a changing view of strategic resources, a changing view of value, and a changing view of senior managers' roles. In addition, human-resources managers must take active roles in developing a company's strategy. Many firms claim that people are their most important asset, but few have actually built the HR systems, processes or cultures that can even offset, let alone challenge, the deeply embedded bias toward financial assets. Bartlett & Ghoshal state that HR must help management develop the engaging, motivating and bonding culture necessary to attract and keep talented employees. Only in such a culture, the potential in competent individuals and fully functioning networks can be converted into engaged, committed action (Bartlett & Ghoshal, 2002).

Nelson and Todd (Nelson & Todd, 2003. Peopleware: The Hiring and Retention of IT personnel in Igbaria & Shavo (Ed.), Strategies for managing IS/IT personnel) have formed a set of best practices that are designed to help organizations develop strategy, recruit, hire, develop, compensate, and ultimately retain valued IT personnel. Their model describes the key drivers of job satisfaction, and ultimately determine turnover. Nelson and Todd have similar thoughts than Bartlett and Ghoshal. They, too, think that for the IT manager to become a builder of human resources, he or she must view employees as assets whose value can be enhanced

through training and experience. They have researched that those factors related to the work itself (including work arrangements, flexibility and autonomy, the work environment, and reward and recognition) have the most significant overall effect on job satisfaction and thus on decisions related to employee turnover. Career issues related to training, development, and advancement opportunities are the next most important factors. Finally, compensation and benefits exert relatively little influence in the overall equation. This is not to say that compensation is not important, but rather that work and career issues are the key differentiators in determining employee satisfaction. Managing these issues can significantly assist organizations to manage employee retention and turnover. Furthermore, it is important to note that management quality is the critical driver of all of these issues (Nelson & Todd, as in Igbaria & Shavo, 2003).

Roepke, Agarwal and Ferrat (2000) also agree with previous. According them there is agreement that a company's IT human capital makes the critical capability that needs to be appropriately managed and nurtured.

3.6 Evidence-based management

Pfeffer and Sutton (2006) have wrote about evidence-based management and organizational culture's role in it. Management decisions that should be done based on the best evidence, systematically learning from past experience, and principles of thought and analysis, are in fact often done based on hope or fear, what others seem to be doing, or what senior leaders have done or believe is right. Evidence-based practice has been in use in the field of medicine for some time already and gradually more in education, but it has little affected on the way most companies operate. The model of evidence-based medicine has inspired the evidence-based management movement. One important notion in their study is that the use of data and evidence changes power dynamics cutting down the importance of a single leader's opinion (Pfeffer & Sutton, 2006).

In this thesis, the researcher wants to point out the meaning of assessment and analysis in this topic. Without systematical assessment from the employer's side, the managerial decisions are not really evidence-based. Assumptions can be dangerous and often are misguiding.

4 Methodology and empirical study

In this chapter, an overview of the research methodology that has been applied in this thesis, is presented and discussed. The general aim of the research will be elaborated and then the data collection methods introduced. The researcher will describe the method for providing answers to the posited research questions.

4.1. Research method

In terms of the research method, this research has been conducted using a mixed approach, as in combining quantitative and qualitative research methods. The researcher uses a survey research, that "comprises a cross-sectional research design in relation to which data will be collected predominantly by questionnaire or by structured interview on more than one case (multiple-case study) and at a single point in time in order to collect a body of quantitative data in connection with two or more variables, which are then examined to detect patterns of association" (Bryman & Bell, 2015, p. 54).

Quantitative research: A quantitative approach to research is likely to be associated with a deductive approach to testing theory (principal orientation to the role of theory in relation to research), often using number or fact and therefore a positivist or natural science model (epistemological orientation), and an objectivist view of the objects studied (ontological orientation) (Greener, 2008, p. 17; Bryman & Bell, 2015).

Qualitative research: A qualitative approach to research is likely to be associated with an inductive approach to generating theory (principal orientation to the role of theory in relation to research), often using an interpretivist model (epistemological orientation) allowing the existence of multiple subjective perspectives and constructing knowledge rather than seeking to "find" it in "reality (ontological orientation) (Greener, 2008, p. 17; Bryman & Bell, 2015).

Since the topic of the thesis can be comprehended as a broad and subjective matter, a mixed methods approach appeared suitable for gathering data as it enables a more complete picture to be drawn. The sample size is too small for only a quantitative study but when a qualitative interview part is added, especially so that the answers to the questionnaire guide the interview questions formulating, the reliability improves. The literature review has naturally provided a basis for the actual empirical study that consisted of, as said, first a more quantitative part after which a qualitative part followed. According Hirsjärvi et al. (2005), a qualitative research is understood to be a unique description of the current situation and it seldom succeeds in obtaining generalizable information (Hirsjärvi et al., 2005). The nature of this research is to construct knowledge to provide indication for action or further research, see Figure 5.

Deductive Approach

Theory

Observations/ Findings

Inductive Approach

Observations/ Findings
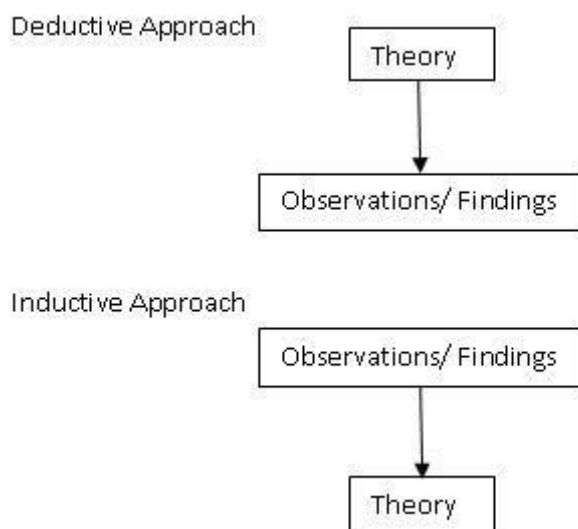
Theory

Figure 5. Deductive and inductive approaches to the relationship between theory and research by Bryman

4.2. Data collection method and sample

The research questions guide the decision about what data to collect and from whom. This study uses a mixed-methods approach with both quantitative and qualitative methods. Convenience sampling (available to the researcher because of its accessibility) has been used to gather the needed data from the participants of ICT-professionals' job satisfaction and turnover intentions. Only original data

collected for the specific research goal has been used. The main data collection methods are a self-completion questionnaire and structured in-depth interviews.

Questionnaires are a way to collect data systematically by obtaining answers on the key issues and opinions that are being researched. They use a number of methods, closed questions, ranking in order, Likert scales or open-ended questions (Armstrong & Taylor, 2014).

Interviews are a research method by which the researcher can obtain factual data and insights into attitudes and feelings. They can be structured, unstructured or semi-structured. In this theses there has been used structured interviews, with which the researcher can obtain answers to a pre-prepared set of questions. This way every topic is covered and there is minimal variation between respondents (Armstrong & Taylor, 2014).

In order to collect data and find answers for the research questions, a survey was made in the first phase of the empirical part. Possible participants were asked from 20 ICT-companies and after that also from higher education IT-departments. The researcher conducted an anonymous questionnaire via E-lomake online platform. Before the actual distribution in 21.2.-6.3.2020, the questionnaire was piloted with two persons to avoid any misunderstandings and wastage occurring. After the pilot, the link was sent to the HR contact persons in participating organizations who then, in turn, forwarded the survey link to their employees for answering. The survey questionnaire was aimed at ICT-professionals in Finland. Primarily the focus was in ICT-companies but after low participation interest, the higher education institutions' ICT-departments were included in queries. Study objects were chosen with convenience sampling from fitting profile (ICT-professionals).

The questionnaire consisted of demographic questions, structured statements on a 6-point Likert scale and open questions. Therefore it uses both quantitative and qualitative methods. The questionnaire was constructed on the basis of already validated job satisfaction surveys. The variables have been formulated on the basis of previous knowledge work studies as well as Spector's Job Satisfaction Survey

(JSS) and Minnesota Satisfaction Questionnaire (MSQ). They are not derived as such, but are tailored for this study's purpose. This way the study is sensitive to the context and relevant to this particular study's research questions. 7-point Likert scale is usually suitable for conducting survey related to behavior or attitude. However, the option of "I don't know" was deliberately omitted as uninformative, since the sample size was already low. Thus, a 6-point Likert scale was used in the structured statements section, where 1 = I very much disagree and 6 = I very much agree. This choice was motivated by the reference satisfaction survey JSS, which also has a 6-point scale.

The subjects for the second phase of the empirical study, the in-depth interviews, were also a convenience sample. The participants gave their consent to conducting interviews, after which a suitable timetable was agreed upon. In addition, they were informed of the recording of interviews in advance.

4.3 Presentation of study object and ethical considerations

This section presents the study context. Because of the sensitive nature of this research, the researcher respects participants' anonymity and will not describe them in any detail. What can be said regarding the context of this study, is however that all of the participants work in specifically ICT-related tasks. The participants for the first part of the study are employees of two ICT-sector companies (one small, one big sized enterprise) and of one higher education institution's ICT-department. The participants for the second part of the study are employees of a global software company and of a global health technology firm's software unit. The reason for including also other industries besides the ICT-sector is that ICT-professionals commonly work also outside ICT-companies. All position levels were included in research.

Due to the anonymity promise, the researcher will not publish any names or such information that can help in forming or tracking links to respondents. Their data are gathered and restored confidentially and only for the specific research purpose. Ethical aspects were taken into account already in preparation stage

when some basic information of the study and its purpose was sent to contacts and then to the participants. The researcher informed all participants in advance that privacy and anonymity would be respected in giving information of the research and its results. In addition, the participation was voluntary and short. This was important in order to make the participants feel free to share their feelings and give as much information as they should like. This was also informed to encourage organizations to participate in the first place. The researcher wants to ensure that there is no prospect of any harm coming to participants.

4.4 About conducting job satisfaction questionnaires

There are two different approaches to the study of job satisfaction. They are the global approach and the facet approach. Global approach studies job satisfaction as a single, overall feeling toward the job, whereas the facet approach focuses on job facets or different aspects of the job. The facet approach allows a more complete picture of job satisfaction (Spector, 2012, p. 216-217).

There are advantages and disadvantages to using an existing job satisfaction scale. Many available scales do cover most facets of satisfaction. They have also been used a sufficient number of times to provide norms (Spector, 1997, p. 6). Spector's Job Satisfaction Survey (JSS) has been of great influence to the survey for this thesis. Another influence has been the Minnesota Satisfaction Questionnaire (MSQ) which is also already widely recognized. Both have been tested many times to be reliable and valid.

4.4.1 Spector's Job Satisfaction Survey (JSS)

The Job Satisfaction Survey (JSS) by Spector assesses nine facets of job satisfaction, as well as overall satisfaction, see Figure 6. These are pay, promotion, supervision, fringe benefits, contingent rewards, operating conditions, coworkers, nature of work and communication. The scale contains 36 items and uses a summated rating scale format which is the most popular format for job satisfaction scales and relatively easy to modify. The internal consistency reliability (coefficient alpha)

has been computed and the value was .91 in total of all facets (based on a sample of 3067 individuals) which is considered to be excellent (Spector, 1997).
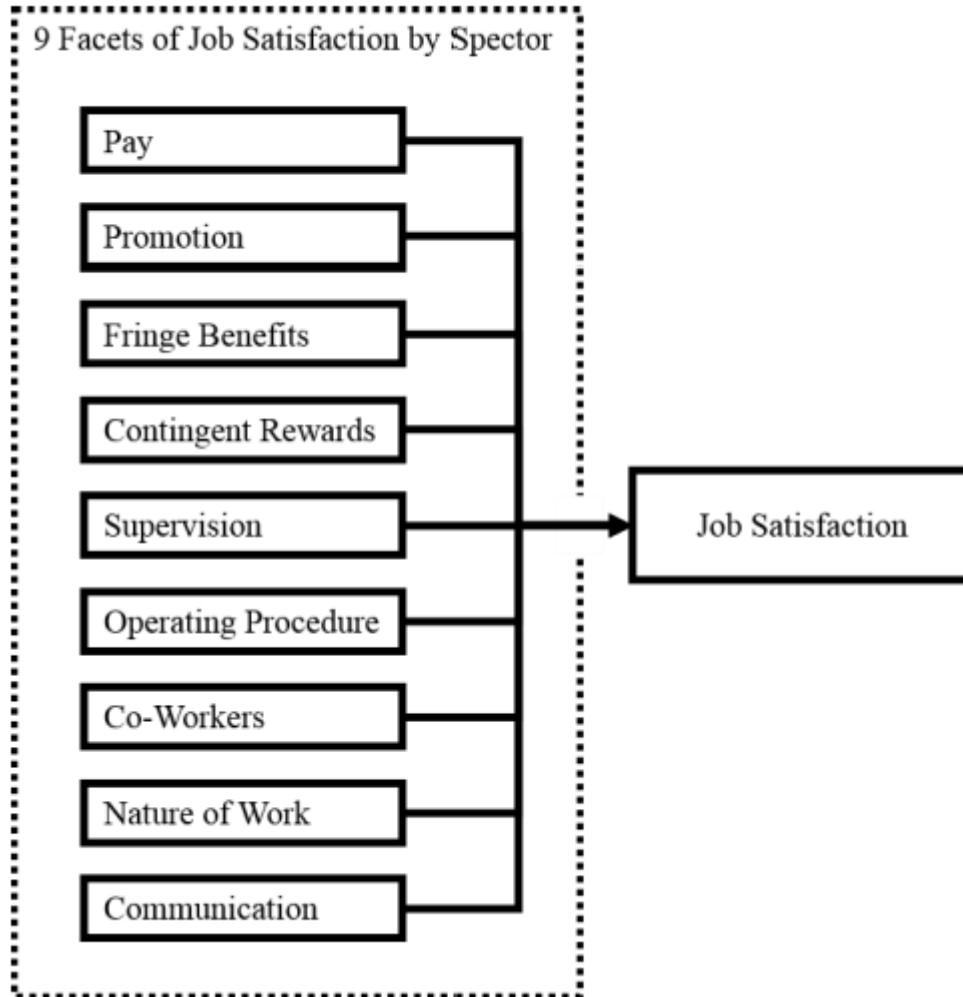
Figure 6. 9 facets of Job Satisfaction by Spector

4.4.2 Minnesota Satisfaction Questionnaire (MSQ)

The Minnesota Satisfaction Questionnaire is another satisfaction scale that has been very popular among researchers. MSQ (1966) has a 100-item long version and a 20-item short version. The short form is used to assess either global satisfaction or intrinsic and extrinsic satisfaction, see Figure 7. Intrinsic satisfaction refers to the nature of the job tasks themselves and how people feel about the work they do. Extrinsic satisfaction concerns other aspects of the work situation, such as fringe benefits and pay. Both types of satisfaction are a

combination of several facets. The facets in short form are activity, independence, variety, social status, supervision (human relations), supervision (technical), moral values, security, social service, authority, ability utilization, company policies and practices, compensation, advancement, responsibility, creativity, working conditions, coworkers, recognition and achievement (Spector, 1997, p. 15-16, 221).

Scale title	Categories of Satisfaction
Ability to utilization	Intrinsic and General
Achievement	Intrinsic and General
Activity	Intrinsic and General
Advancement	Extrinsic and General
Authority	Intrinsic and General
Company policy and practices	Extrinsic and General
Compensation	Extrinsic and General
Co-workers	General
Creativity	Intrinsic and General
Independence	Intrinsic and General
Moral values	Intrinsic and General
Recognition	Extrinsic and General
Responsibility	Intrinsic and General
Security	Intrinsic and General
Social service	Intrinsic and General
Social status	Intrinsic and General
Supervision-human relations	Extrinsic and General
Supervision-technical	Extrinsic and General
Variety	Intrinsic and General
Working condition	General

Figure 7. Minnesota Satisfaction Questionnaire scales (short form)

4.4.3 The job satisfaction questionnaire for this research

The questionnaire of this thesis was influenced by JSS and MSQ facets but based on literature findings for knowledge workers. Naturally, it was designed to answer to the research questions. Because of low participation interest, the response rate needed to be as good as possible, and this was reason to why the questionnaire

had to be short. In addition to demographics, the actual job satisfaction questions regarded values, inner coherence of the employee, ability utilization, meaningfulness, achievement, work-life balance, general satisfaction of one's job, competence, recognition, training possibility, willingness for a career in the organization, monetary salary, benefits, advancement possibility, supervisor competence, clarity of instructions, ease of feedback, work environment, communication's openness, coworkers' competence and fairness of corporate culture. Participants were also asked to answer open questions by mentioning three things that increase and that decrease their job satisfaction. They were asked about their actual intention of leaving and the reasons for their choice. This way they were offered the possibility to shed more light on the topic than if only given structured options.

4.5 Interview questions for this research

The interview questions were formulated based on the three research questions. However, as this part was done after the survey questionnaire was conducted, some key items were included in the interviews, such as communication's effectiveness, salary and benefit policies as well as fairness of corporate culture.

Interviews needed to be relatively short but still informative enough to cover all facets of interest. This guided the question formulation. In conclusion, three subjects, job satisfaction, turnover intentions and managerial work, were included with 3-4 questions per subject.

4.6 Chosen method for analysis

Quantitative analysis has been done using IBM SPSS Statistics software. With SPSS descriptive analysis is convenient to display. Qualitative analysis has been done using data-driven content analysis by the researcher. First NVivo was considered as a software program tool, but it was discarded due to the small amount of analyzable material.

Content analysis for open questions in the survey

In content analysis the researcher looks for patterns in qualitative data. In data-driven content analysis, the researcher extracts the most relevant issues from the data regardless of previous theories or hypotheses. The data guides the analysis being done, see Figure 8. The first phase is to reduce the material where the relevant parts are searched and marked with e.g. highlighting. The marked parts are reduced by writing them in shorter form. The next phase is clustering where the reduced expressions are grouped in such a way that same-meaning-things form together a subgroup. These are then labelled with a title describing the content. Finally, in the third phase classifying continues so that the researcher can form upper groups from the subgroups and main groups from these upper groups. These are then all labelled with appropriate title.
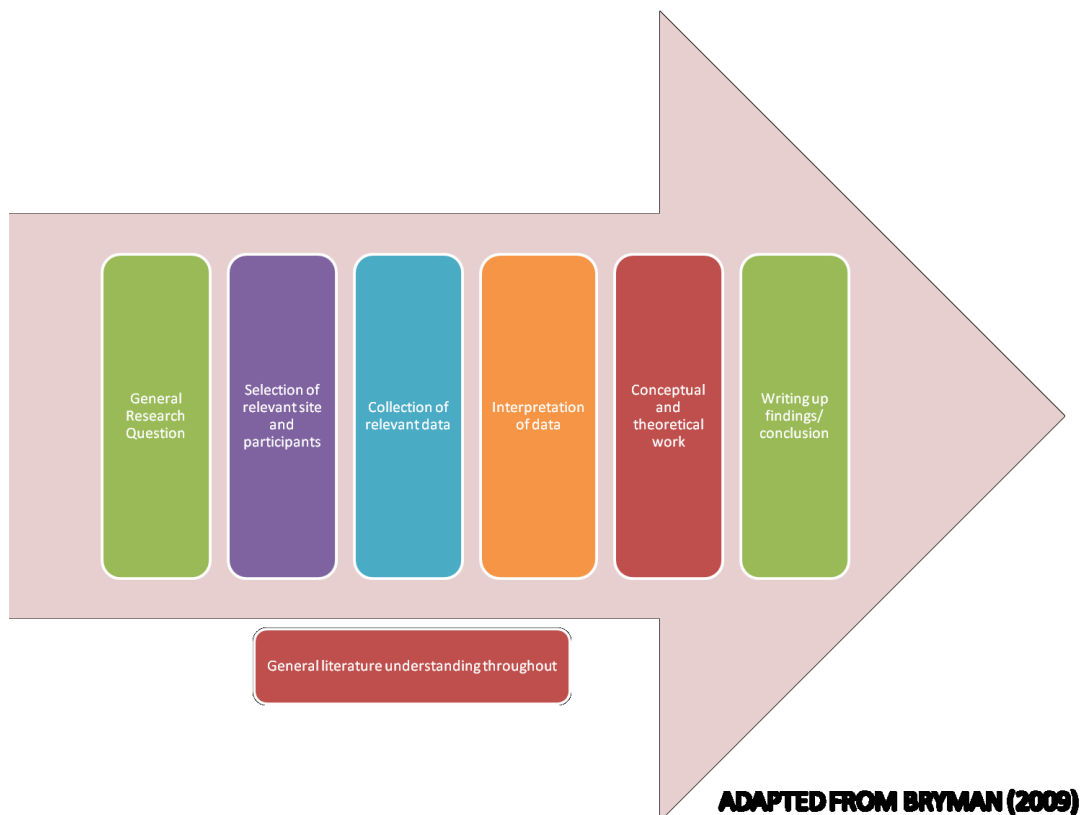
Figure 8. The process that qualitative research generally follows

5 Analysis and interpretation of results

In this thesis an online questionnaire was distributed to gather data from ICT-professionals of their job satisfaction and turnover intentions. Data were collected for two weeks in 21.2.-6.3.2020. A total of 19 questionnaires were returned from 100 presumed responses so the response rate (the percentage of a sample that agreed to participate and gave usable answers) was 19 per cent. Because the study was done among the representatives of same occupation, the expected heterogeneity of the population from which the sample was taken, was low. This is important since the greater the heterogeneity, the larger the sample would need to be. In this thesis the sample was quite small, but it is not problematic in this aspect.

This following section will present a comprehensive analysis of the obtained answers and interpretation of the results.

5.1. Main findings from survey questionnaire

The job satisfaction questionnaire for ICT-personnel

Descriptive analysis

In the first part of the questionnaire, some basic demographic information was collected from the participants. Descriptive analysis is used to show here the summaries of participants' background information. The sample of participants finally consisted of three different organizations' employees. They represent two ICT-sector companies and one higher education institute's ICT-department. The survey was targeted to ICT-professionals in Finland.

Demographic questions

Among the respondents that participated in this research, 14 were males and 5 females. 2 respondents were of age 18 -30 years, 5 respondents were of age 31-40 years, 4 respondents were of age 41-50 years and 8 respondents of age over 50

years. 3 had ICT-work experience of 0-5 years, 2 of 6-10 years and 14 of them for over 10 years. In terms of highest completed education, 3 answered to have upper secondary school, 9 a Bachelor's degree and 7 a Master's degree. From position level, 6 were labourer, 8 officials, 3 upper officials and 2 managers.

The factors affecting ICT-professionals' job satisfaction

In the survey questionnaire the researcher asked first are the employees familiar with their organization's values. Values are a keen part of organizational culture, as are beliefs, norms, attitudes and assumptions, and values are what guide the way people in organizations behave (Armstrong & Taylor, 2014, p 120).

To the question *Do you know the values of your organization?* nobody indicated that they do not know the values. Two respondents said they know the values partly. Values can be rather vague if they are not clearly expressed to the employees and especially if they are not being in actual use in the company.

Second question was *If you know the values, do you share them?* There were thirteen respondents who did share their organization's values and six respondents who shared the values only partly. Nobody indicated that they didn't share the values at all.

Being aware of the values first of all is meaningful, because then the employee knows what the organization he/she works for, stands for or represents and what kind of behavior is expected among its employees. The result that out of nineteen, six respondents shared the values only partly, gives an indication that the values of an ICT-organization do not always necessarily match with its employees, at least not with these respondents. Why this is the case, would need further exploring and no general conclusions can be made from this result. Still, it should be noticed and analyzed by the employer, if not all its employees can share the same values.

In the second part of the survey questionnaire there were 22 statements that were to be assessed on a 6-point Likert scale. The options were as follows: 1 = I disagree

very much, 2 = I disagree moderately, 3 = I disagree slightly, 4 = I agree slightly, 5 = I agree moderately and 6 = I agree very much. Option "I don't know" was left out deliberately as uninformative.

The researcher will here divide the results into groups. They are not in the same order as in the actual questionnaire formula, but grouped into intrinsic factors and extrinsic factors as well as general factors of motivation. They are also classified according JSS and MSQ scales per facet.

Extrinsic factors:

Extrinsic and general

Pay (satisfaction with pay and pay raises)

My salary matches to my job performance and skills

Table 1. My salary matches to my job performance and skills

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: My salary matches to my job performance and skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree very much / Täysin eri mieltä	1	5,3	5,3	5,3
	Disagree moderately / Melko eri mieltä	7	36,8	36,8	42,1
	Disagree slightly / Hieman eri mieltä	1	5,3	5,3	47,4
	Agree slightly / Hieman samaa mieltä	3	15,8	15,8	63,2
	Agree moderately / Kohtuullisen samaa mieltä	5	26,3	26,3	89,5
	Agree very much / Täysin samaa mieltä	2	10,5	10,5	100,0
	Total	19	100,0	100,0	

What is noticeable, is the relatively large amount of disagreeing answers to this particular question. 9 persons disagree and 10 persons agree with salary matching to their job performance and skills. Why this is, needs further exploring.

Extrinsic

Monetary salary is my main motivation for work

Table 2. Monetary salary is my main motivation for work

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: Monetary salary is my main motivation for work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree moderately / Kohtuullisen eri mieltä	7	36,8	38,9	38,9
	Disagree slightly / Hieman eri mieltä	4	21,1	22,2	61,1
	Agree slightly / Hieman samaa mieltä	2	10,5	11,1	72,2
	Agree moderately / Kohtuullisen samaa mieltä	4	21,1	22,2	94,4
	Agree very much / Täysin samaa mieltä	1	5,3	5,6	100,0
	Total	18	94,7	100,0	
Missing	System	1	5,3		
Total		19	100,0		

As expected based on the previous findings in research, the majority of ICT-professionals in this survey do not feel monetary salary is their main motivation for work. In previous question they however indicated salary being very important a factor for them.

Extrinsic and general

Promotion (satisfaction with promotion opportunities)

I have a chance for promotion and career development on my job

Table 3. I have a chance for promotion and career development on my job

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: I have a chance for promotion and career development on my job

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree very much / Täysin eri mieltä	4	21,1	21,1	21,1
	Disagree moderately / Kohtuullisen eri mieltä	3	15,8	15,8	36,8
	Disagree slightly / Hieman eri mieltä	2	10,5	10,5	47,4
	Agree slightly / Hieman samaa mieltä	5	26,3	26,3	73,7
	Agree moderately / Kohtuullisen samaa mieltä	3	15,8	15,8	89,5
	Agree very much / Täysin samaa mieltä	2	10,5	10,5	100,0
	Total	19	100,0	100,0	

9 disagreed and 10 agreed with the statement of having a chance for promotion and career development on the job, so this did raise very mixed emotions. The researcher started to wonder if there are certain types of jobs among ICT-professionals that do not have prospects the same way, or is that dependent of the employer, or what is the reason behind these results. This needs further research.

Extrinsic and general

Advancement

I want to make a career in this organization

Table 4. I want to make a career in this organization

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: I want to make a career in this organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree very much / Täysin eri mieltä	1	5,3	5,6	5,6
	Disagree moderately / Kohtuullisen eri mieltä	1	5,3	5,6	11,1
	Disagree slightly / Hieman eri mieltä	3	15,8	16,7	27,8
	Agree slightly / Hieman samaa mieltä	6	31,6	33,3	61,1

		Frequency	Percent	Valid Percent	Cumulative Percent
	Agree moderately / Kohtuullisen samaa mieltä	6	31,6	33,3	94,4
	Agree very much / Täysin samaa mieltä	1	5,3	5,6	100,0
	Total	18	94,7	100,0	
Missing	System	1	5,3		
Total		19	100,0		

This question caused a lot of distribution. What is rather interesting is that only one person agreed very much with this statement, however six agreed moderately and six slightly. Moreover, three disagreed slightly, one moderately and one disagreed very much. This seems to go in line with theories that ICT-professionals are more committed to their occupation than their employer organization.

Extrinsic and general

Supervision (satisfaction with the person's immediate supervisor)

My supervisor is competent in doing his/her job

Table 5. My supervisor is competent in doing his/her job

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: My supervisor is competent in doing his/her job

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree moderately / Kohtuullisen eri mieltä	4	21,1	21,1	21,1
	Disagree slightly / Hieman eri mieltä	3	15,8	15,8	36,8
	Agree slightly / Hieman samaa mieltä	2	10,5	10,5	47,4
	Agree moderately / Kohtuullisen samaa mieltä	8	42,1	42,1	89,5
	Agree very much / Täysin samaa mieltä	2	10,5	10,5	100,0
	Total	19	100,0	100,0	

Table 5 shows that 12 agreed and 7 disagreed with the statement of supervisor being competent in doing his/her job.

Extrinsic

Supervision and communication

My supervisor explains the work objectives and expectations clearly

Table 6. My supervisor explains the work objectives and expectations clearly

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: My supervisor explains the work objectives and expectations clearly

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree very much / Täysin eri mieltä	2	10,5	10,5	10,5
	Disagree moderately / Kohtuullisen eri mieltä	2	10,5	10,5	21,1
	Disagree slightly / Hieman eri mieltä	4	21,1	21,1	42,1
	Agree slightly / Hieman samaa mieltä	4	21,1	21,1	63,2
	Agree moderately / Kohtuullisen samaa mieltä	5	26,3	26,3	89,5
	Agree very much / Täysin samaa mieltä	2	10,5	10,5	100,0
	Total	19	100,0	100,0	

As expected based on literature, this statement caused a division. 11 agreed and 8 disagreed with supervisor explaining work objectives and expectations clearly enough.

Supervision and communication

I get enough feedback from my supervisor for what I do

Table 7. I get enough feedback from supervisor for what I do

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: I get enough feedback from supervisor for what I do

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree very much / Täysin eri mieltä	1	5,3	5,3	5,3

		Frequency	Percent	Valid Percent	Cumulative Percent
	Disagree moderately / Kohtuullisen eri mieltä	4	21,1	21,1	26,3
	Disagree slightly / Hieman eri mieltä	5	26,3	26,3	52,6
	Agree slightly / Hieman samaa mieltä	1	5,3	5,3	57,9
	Agree moderately / Kohtuullisen samaa mieltä	7	36,8	36,8	94,7
	Agree very much / Täysin samaa mieltä	1	5,3	5,3	100,0
	Total	19	100,0	100,0	

This statement is noteworthy, since majority disagreed with getting enough feedback from their supervisor for what they do. 10 disagreed and 9 agreed.

Supervision and communication

I can also give feedback easily to my supervisor

Table 8. I can also give feedback easily to my supervisor

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: I can also give feedback easily to my supervisor

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree very much / Täysin eri mieltä	1	5,3	5,6	5,6
	Disagree moderately / Kohtuullisen eri mieltä	4	21,1	22,2	27,8
	Disagree slightly / Hieman eri mieltä	2	10,5	11,1	38,9
	Agree slightly / Hieman samaa mieltä	3	15,8	16,7	55,6
	Agree moderately / Kohtuullisen samaa mieltä	4	21,1	22,2	77,8
	Agree very much / Täysin samaa mieltä	4	21,1	22,2	100,0
	Total	18	94,7	100,0	
Missing	System	1	5,3		
Total		19	100,0		

11 agreed and 7 disagreed with this statement (one missing response). There were only few more agreeing responses compared to previous question.

Extrinsic and general

Fringe Benefits (satisfaction with fringe benefits)

I am satisfied with the benefits

Table 9. I am satisfied with the benefits

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: I am satisfied with the benefits

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree very much / Täysin eri mieltä	1	5,3	5,3	5,3
	Disagree moderately / Kohtuullisen eri mieltä	2	10,5	10,5	15,8
	Disagree slightly / Hieman eri mieltä	4	21,1	21,1	36,8
	Agree slightly / Hieman samaa mieltä	4	21,1	21,1	57,9
	Agree moderately / Kohtuullisen samaa mieltä	6	31,6	31,6	89,5
	Agree very much / Täysin samaa mieltä	2	10,5	10,5	100,0
	Total	19	100,0	100,0	

This question was another one that caused variety of answers. 7 disagreed and 12 agreed.

Extrinsic and general

Contingent Rewards (satisfaction with rewards, not necessarily monetary, given for good performance)

I feel I get enough recognition

Table 10. I feel I get enough recognition

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: I feel I get enough recognition

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree moderately / Kohtuullisen eri mieltä	2	10,5	10,5	10,5
	Disagree slightly / Hieman eri mieltä	3	15,8	15,8	26,3
	Agree slightly / Hieman samaa mieltä	6	31,6	31,6	57,9
	Agree moderately / Kohtuullisen samaa mieltä	5	26,3	26,3	84,2
	Agree very much / Täysin samaa mieltä	3	15,8	15,8	100,0
	Total	19	100,0	100,0	

This question caused more distribution in answers. Only three respondents agreed very much with this and five agreed moderately. The result with this small sample indicates that the employer could probably improve recognizing employee achievements.

Extrinsic and general

Operating conditions (satisfaction with rules and procedures)

There is enough training organized

Table 11. There is enough training organized

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: There is enough training organized

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree very much/ Täysin eri mieltä	2	10,5	10,5	10,5
	Disagree moderately / Kohtuullisen eri mieltä	1	5,3	5,3	15,8
	Disagree slightly / Hieman eri mieltä	4	21,1	21,1	36,8
	Agree slightly / Hieman samaa mieltä	1	5,3	5,3	42,1
	Agree moderately / Kohtuullisen samaa mieltä	8	42,1	42,1	84,2

	Agree very much / Täysin samaa mieltä	3	15,8	15,8	100,0
	Total	19	100,0	100,0	

Majority of the respondents agree (n=12), but as many as 7 respondents disagree with this statement, indicating that there could be more trainings organized by employer.

Extrinsic and general

Communication (satisfaction with communication within the organization)

Communication is open and works well in our community

Table 12. Communication is open and works well in our community

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: Communication is open and works well in our community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree very much / Täysin eri mieltä	1	5,3	5,3	5,3
	Disagree moderately / Kohtuullisen eri mieltä	3	15,8	15,8	21,1
	Disagree slightly / Hieman eri mieltä	1	5,3	5,3	26,3
	Agree slightly / Hieman samaa mieltä	2	10,5	10,5	36,8
	Agree moderately / Kohtuullisen samaa mieltä	10	52,6	52,6	89,5
	Agree very much / Täysin samaa mieltä	2	10,5	10,5	100,0
	Total	19	100,0	100,0	

14 agreed and 5 disagreed with communication being open and working well in their work community. This is rather contradictory to answers related to easiness of feedback.

Intrinsic factors:

Intrinsic and general

Moral values and perception of justice

I think our corporate culture is fair and just

Table 13. I think our corporate culture is fair and just

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: I think our corporate culture is fair and just

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree very much / Täysin eri mieltä	2	10,5	10,5	10,5
	Disagree moderately / Kohtuullisen eri mieltä	5	26,3	26,3	36,8
	Agree slightly / Hieman samaa mieltä	4	21,1	21,1	57,9
	Agree moderately / Kohtuullisen samaa mieltä	5	26,3	26,3	84,2
	Agree very much / Täysin samaa mieltä	3	15,8	15,8	100,0
	Total	19	100,0	100,0	

Again interestingly, the results divided to either disagreeing moderately or very much (7), to agreeing from slightly to very much (12). The reasons behind this result need further examining, are they for example organization-dependent. It is still a quite worrying signal for employers that so many respondents perceive their organization as not so fair.

In addition, the values were separately researched in the beginning of the questionnaire. They were placed first because of their importance to the whole topic and because values provide the foundation on which the organization operates. The first question of values awakens the respondents instantly to think what their organization is about and the second question awakens them to think what they themselves want to represent. The answers to first one show that employees are aware of their company's values and the answers to second show

that some individuals do not entirely share these values in this survey. This may be reflecting in the results for the statement about fairness in corporate culture.

Intrinsic and general

Nature of work and ability to utilization

I feel I am in the right occupation.

Table 14. I feel I am in the right occupation

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: I feel I am in the right occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree moderately / Kohtuullisen eri mieltä	1	5,3	5,3	5,3
	Disagree slightly / Hieman eri mieltä	1	5,3	5,3	10,5
	Agree slightly / Hieman samaa mieltä	1	5,3	5,3	15,8
	Agree moderately / Kohtuullisen samaa mieltä	8	42,1	42,1	57,9
	Agree very much / Täysin samaa mieltä	8	42,1	42,1	100,0
	Total	19	100,0	100,0	

As can be seen from the table, the participants mostly agreed with this statement either very much or moderately and feel they are indeed in the right occupation. Only 2 disagreed.

Intrinsic and general

Achievement and utilization

I feel I am good in my work

Table 15. I feel I am good in my work

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: I feel I am good in my work

		Frequency	Percent	Valid Percent	Cumulative Percent

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree moderately / Kohtuullisen eri mieltä	1	5,3	5,3	5,3
	Agree moderately / Kohtuullisen samaa mieltä	11	57,9	57,9	63,2
	Agree very much / Täysin samaa mieltä	7	36,8	36,8	100,0
	Total	19	100,0	100,0	

The ICT-professionals in this thesis also feel they are quite or very good in their work. Only one respondent disagreed.

Intrinsic and general

Nature of work (satisfaction with the type of work done)

I feel my job is meaningful

Table 16. I feel my job is meaningful

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: I feel my job is meaningful

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree moderately / Kohtuullisen eri mieltä	1	5,3	5,3	5,3
	Agree slightly / Hieman samaa mieltä	5	26,3	26,3	31,6
	Agree moderately / Kohtuullisen samaa mieltä	9	47,4	47,4	78,9
	Agree very much / Täysin samaa mieltä	4	21,1	21,1	100,0
	Total	19	100,0	100,0	

The respondents mostly agreed that they feel their job is meaningful. However, there is some variation between the answers and 5 respondents only agree slightly and one disagrees moderately with this statement.

Intrinsic and general

Achievement

I get a feeling of accomplishment from my job

Table 17. I get a feeling of accomplishment from my job

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: I get a feeling of accomplishment from my job

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree moderately / Kohtuullisen eri mieltä	2	10,5	10,5	10,5
	Agree very much / Täysin samaa mieltä	3	15,8	15,8	26,3
	Agree moderately / Kohtuullisen samaa mieltä	11	57,9	57,9	84,2
	Agree slightly / Hieman samaa mieltä	3	15,8	15,8	100,0
	Total	19	100,0	100,0	

Again the majority of the respondents agreed with the statement and do get a feeling of accomplishment from their job. This is a positive indication to overall job satisfaction. Reduced feeling of accomplishment from job is related to exhaustion and a risk for burnout. (Armstrong et al., 2015). The employer can fortify the feelings of accomplishment by giving more feedback of the results of work activities and successful deliveries. This feedback may also come from coworkers.

Intrinsic and general

Nature of work (satisfaction with the type of work done)

I like my job

Table 18. I like my job

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: I like my job

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree moderately / Kohtuullisen eri mieltä	2	10,5	10,5	10,5
	Agree slightly / Hieman samaa mieltä	1	5,3	5,3	15,8
	Agree moderately / Kohtuullisen samaa mieltä	12	63,2	63,2	78,9

		Frequency	Percent	Valid Percent	Cumulative Percent
	Agree very much / Täysin samaa mieltä	4	21,1	21,1	100,0
	Total	19	100,0	100,0	

This is a very general question, but it is an essential one as well in the reference satisfaction surveys used in this thesis (JSS and MSQ). It is delightful to notice that the majority of respondents agreed with the statement and only two of them disagreed.

Intrinsic and general

Responsibility

I feel my responsibilities are in balance with my knowhow

Table 19. I feel my responsibilities are in balance with my knowhow

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: I feel my responsibilities are in balance with my knowhow

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree very much / Täysin eri mieltä	1	5,3	5,3	5,3
	Agree slightly / Hieman samaa mieltä	3	15,8	15,8	21,1
	Agree moderately / Kohtuullisen samaa mieltä	12	63,2	63,2	84,2
	Agree very much / Täysin samaa mieltä	3	15,8	15,8	100,0
	Total	19	100,0	100,0	

This statement also gathered positive answers and only one respondent felt the responsibilities were not in balance with his/her knowhow. This is a positive finding considering work stress and workloads.

General factors:

General

Coworkers (satisfaction with coworkers)

I have competent enough co-workers in order to do my job properly

Table 20. I have competent enough co-workers in order to do my job properly

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: I have competent enough co-workers in order to do my job properly

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree moderately / Kohtuullisen eri mieltä	1	5,3	5,3	5,3
	Agree slightly / Hieman samaa mieltä	2	10,5	10,5	15,8
	Agree moderately / Kohtuullisen samaa mieltä	12	63,2	63,2	78,9
	Agree very much / Täysin samaa mieltä	4	21,1	21,1	100,0
	Total	19	100,0	100,0	

What is noticeable is that only one respondent disagreed with this statement. As many as 16 agreed either moderately or very much with having competent enough co-workers in order to do their job properly. Based on this, it seems that ICT-professionals are satisfied with their co-workers.

General

Working conditions and work-life balance

I feel my work time is in balance with free time

Table 21. I feel my work time is in balance with free time

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: I feel my work time is in balance with free time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree moderately / Kohtuullisen eri mieltä	3	15,8	15,8	15,8

	Frequency	Percent	Valid Percent	Cumulative Percent
Agree slightly / Hieman samaa mieltä	2	10,5	10,5	26,3
Agree moderately / Kohtuullisen samaa mieltä	10	52,6	52,6	78,9
Agree very much / Täysin samaa mieltä	4	21,1	21,1	100,0
Total	19	100,0	100,0	

The respondents agreed either moderately or very much in most part with this statement. Only three respondents disagreed with it. According recent barometers, this factor has been increasingly taken better into account in Finnish working life.

General

Working conditions

I enjoy my working environment

Table 22. I enjoy my working environment

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto: I enjoy my working environment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree moderately / Kohtuullisen eri mieltä	1	5,3	5,3	5,3
	Disagree slightly / Hieman eri mieltä	2	10,5	10,5	15,8
	Agree slightly / Hieman samaa mieltä	3	15,8	15,8	31,6
	Agree moderately / Kohtuullisen samaa mieltä	8	42,1	42,1	73,7
	Agree very much / Täysin samaa mieltä	5	26,3	26,3	100,0
	Total	19	100,0	100,0	

Clear majority of the respondents of this survey do enjoy their working environment.

Next is presented a table of the mean scores of each statement's values. The mean represents the overall satisfaction of respondents with the facet in question. The

mean score for all facet means was 4.25, which demonstrates the overall job satisfaction of all respondents in total. This value shows it is above scale center, but in such a small amount, that it can be assumed there is need for improvement, at least in some areas. This finding regards these participants and cannot be generalized. Despite this, there are many interesting notions to be made concerning managing ICT-pfrofessionals.

Table 23. Descriptive Statistics of mean scores

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
I feel I am in the right occupation	19	2,00	6,00	5,11	1,10
I feel I am good in my work	19	3,00	6,00	5,26	,733
I feel my job is meaningful	19	2,00	6,00	4,79	,976
I get a feeling of accomplishment from my job	19	2,00	6,00	4,68	1,11
I feel my work time is in balance with free time	19	2,00	6,00	4,63	1,30
I like my job	19	2,00	6,00	4,84	1,12
I feel my responsibilities are in balance with my knowhow	19	1,00	6,00	4,79	1,08
I feel I get enough recognition	19	2,00	6,00	4,21	1,23
There is enough training organized	19	1,00	6,00	4,11	1,59
I want to make a career in this organization	18	1,00	6,00	4,00	1,24
My salary matches to my job performance and skills	19	1,00	6,00	3,53	1,61
Monetary salary is my main motivation for work	18	2,00	6,00	3,33	1,37
I am satisfied with the benefits	19	1,00	6,00	3,95	1,39
I have a chance for promotion and career development on my job	19	1,00	6,00	3,32	1,70
My supervisor is competent in doing his/her job	19	2,00	6,00	4,05	1,39

My supervisor explains the work objectives and expectations clearly	19	1,00	6,00	3,74	1,52
I get enough feedback from my supervisor	19	1,00	6,00	3,63	1,46
I can also give feedback easily to my supervisor	18	1,00	6,00	3,94	1,66
I enjoy my working environment	19	2,00	6,00	4,74	1,15
Communication is open and works well in our community	19	1,00	6,00	4,21	1,47
I have competent enough co-workers in order to do my job properly	19	2,00	6,00	4,95	,91
I think our corporate culture is fair and just	19	1,00	6,00	3,74	1,73
Valid N (listwise)	16				

Open questions

The statements were followed by some open questions. In the content analysis the researcher started by writing down the open answers and searching frequencies in the words and similar meanings. These were then colour-coded which made it easier to group the same-meaning wordings. It became noticeable that the respondents' answers had much in common.

Here are the main findings (n=19 responses in total) of data-driven content analysis of the survey's qualitative data according frequency:

Mention three things that would increase most your job satisfaction.
(clustered and labeled):

1) Salary (9 x)
2) Benefits (8 x)
3) Communication (7 x)
4) Fairness (4 x)
5) Management (3 x)

6) Training (3 x)

7) Atmosphere (3 x)

8) Work in itself (2 x)

"Small increase in my salary, sometimes a bit more clarity in my role, guidance from my manager"

"Autonomy, remote work possibility, fair pay"

Mention three things that most decrease your job satisfaction.
(clustered and labeled):

1) Communication (8 x)

2) Workload (6 x)

3) Management (6 x)

4) Benefits (6 x)

5) Atmosphere (6 x)

6) Salary (5 x)

7) Fairness (3 x)

8) Training (3 x)

"Keeping secrets, not enough training, micromanagement"

"Continuous hectic workload, I couldn't be myself at work if I didn't have a trusted colleague / manager to go and talk to when needed."

When both of these columns are examined, we see that communication has been mentioned most often altogether (8+7=15). It seems thus that communication is extremely important in knowledge-work companies. ICT-professionals expect to have clarification to their own work responsibilities. The more abstract and systems-dependent the work is, the more essential is good communication. Nearly as crucial appears to be salary for the respondents of this study (9+5=14) and also benefits (8+6=14). After these come management (3+6=9), atmosphere (3+6=9), fairness (4+3=7), training (3+3=6) and workload (0+6=6). Last comes work in

itself (2+0=2), which was a surprise to the researcher that it was not actually mentioned more often.

The open questions in the survey offered as expected, very valuable insights of the reasons behind the choices. These were followed by a question of actual intentions of leaving.

Do you see yourself working here after a year?

Choose / Valitse: Do you see yourself working here after a year? / Näetkö itsesi työskentelemässä täällä vuoden kuluttua?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No / en	3	15,8	15,8	15,8
	Yes / kyllä	16	84,2	84,2	100,0
	Total	19	100,0	100,0	

Clear majority of 16 respondents indicated willingness to stay in the company at least after a year. 3 respondents did not see themselves there anymore after a year.

Choose / Valitse: Do you see yourself working here after a year? Crosstabulation

		Choose / Valitse: Do you see yourself working here after a year? / Näetkö itsesi työskentelemässä täällä vuoden kuluttua		
		No / en	Yes / kyllä	Total
Female / Nainen		2	12	14
	x	1	4	5
Total		3	16	19

Only one female and two males indicated unwillingness to continue in the company after a year. One respondent of age group 18-30 and two respondents of age group 41-50 indicated that they do not see themselves there after a year. This

goes along with one respondent with work experience of 0-3 years and two respondents with experience of over 10 years responded negatively. These negatively responded were two Bachelor's degree holders and one Master's degree holder and from position levels they were (not in any order) a labourer, an official and a manager.

Please explain shortly your previous choice above, why?

If we first examine the reasons of "no" answers, the responses varied from 1. wanting to move on from first permanent job in a junior position and possibly get more educated, to 2. a misalignment between job level/skills and given compensation, to 3. the sheer will to have just more options. The results go along with how literature describes knowledge workers. They want to develop and challenge themselves, they know their worth and are proud in the sense that if not satisfied with current employment, they are quick to change to a better option. Here is the power shift, since they own their "means of production, which is their knowledge" as Drucker (2007) stated. On the other hand, it is only natural that unless there is something that will bind the employee to current organization, such as affective commitment, the employee will take a better offer should there be such, and to ICT-professionals of high demand, there most likely is. Lack of advancement possibilities (or the impression of the lack) and insufficient salary appear to be the deal breakers for these participants when it comes to intention to leave.

When we examine the reasons of "yes" answers, the offering is wider. Responses include 1. wanting to influence the surrounding world, 2. being satisfied with current job assignments and believing that the employer will improve certain areas, 3. interesting projects in horizon and also coming improvements to company practices, 4. satisfaction of workplace, job assignments and colleagues, 5. enjoying the work, 8. feeling comfortable enough to stay in the job until pension, 9. liking the colleagues and atmosphere, 10. liking the culture in the workplace that takes employee well-being seriously, 11. feeling that majority in work is positive, 12. liking the work community, 13. liking the workplace in general, 14. liking the

job, the colleagues and workplace, and 15. enjoying the work itself. One respondent told to leave the question unanswered on purpose.

Hereby we notice that the key reasons for participated ICT-professionals' intentions to stay with their current organization consist of fitting assignments and satisfaction in work in itself, influence possibility, good or caring organizational culture and satisfaction in one's co-workers. Work itself is a strong intrinsic motivating factor according Herzberg's theory and this aspect was emphasized in the intentions to stay.

Other thoughts or improvement ideas?

No other thoughts or improvement ideas were given concerning the actual topic. The only comment regarded the questionnaire table and its scalability in Chrome browser, which was not optimal.

Influence of demographic factors to results

When we examine the overall satisfaction of each respondent, we see that it divided in the age group 18-30, it was quite high in age group 31-40, it was moderate in age group 41-50 and again quite high in age group over 50. This goes along with the results' heavy division of employees with ICT-work experience of 0-5 years. Respondents with 6-10 years of experience were quite satisfied and over 10 years also. Respondents' education backgrounds made no great differences. Females' responses on the other hand were heavily divided, males' responses were more in line.

5.2 Main findings from the interviews

Interviews with ICT-professionals

The empirical study for this research consisted of two parts. First, an online questionnaire was conducted, as explained in the previous section. In the second

part, two in-depth interviews with ICT-professionals were held (16.3.2020 and 17.3.2020) to gather more insight of the reasons behind job satisfaction in ICT-related knowledge work and possible turnover intentions. The questions for the interviews were pre-prepared, structured questions, but the interviewee was given time to answer as widely as needed. Interviews lasted about an hour each, they were recorded with participants' consent and transcribed afterwards. The results have been analyzed using data-driven content analysis.

Demographic questions:

The first demographic question was *Your position level?* to which the other interviewee answered to be manager, though a one-man-team at the moment, hired as an expert and the other interviewee answered to be upper official. The next question was *Your ICT-work experience in years?* to which both interviewees informed to have 7 years of experience. The third background question was *Your work experience in years in current organization?* The other interviewee had 2 years and the other 4 and half years of work experience in current organization. The fourth and final demographic question concerned *Your highest completed education?* The other interviewee answered to have a Bachelor's degree and be currently writing Master's, other one had a Bachelor's degree.

Subject 1. Job satisfaction

Question 1. What factors do you think increase job satisfaction in ICT-work the most? Why?

Things that highlighted in the answers for the first question were freedom to do the work as you see fit, trust from the management, good working atmosphere with appreciation from your team, and clear expectations. Also salary and substance (meaning of the work) were mentioned as motivating factors. Both interviewees mentioned the coworkers and salary as increasing factors.

"It is related to clear goals, clear like what is expected from you and when, not necessarily how but what and when. Of course salary is somewhat important, and the substance of the field."

Question 2. What factors do you think decrease job satisfaction in ICT-work the most? Why?

In terms of what decreases the respondents' job satisfaction most, these are micromanagement, lack of possibility to be creative, major gaps in salary compared to others, constantly changing customer specifications, non-supportive managers and colleagues together with unclear goals. Also lack of proper induction was mentioned as a decreasing factor.

"I need to be creative, have my creative freedom, as well to explore things. This is not possible if you have a boss that is micromanaging you and is trying to dictate every step."

Question 3. What could the employer do or improve to support your job satisfaction more?

When asked what the employer could actually do or improve to support the respondents' job satisfaction better, the answers varied from giving more appreciation and recognition from a good job, giving freedom for the knowledge worker to self-organize, boosting good company culture and offering development possibilities, to supporting hobbies and offering remote work possibility.

"Show interest. Appreciation of the work is important, I think. If somebody does a good job, employer should praise them or highlight them in front of the team. I think that has a positive impact. Apart from that, trying out and giving freedom."

Subject 2. Turnover intentions

Question 4. What do you think are the main reasons for the voluntary turnover happening in your workplace?

In terms of voluntary turnover, the respondents believed it is due to wanting to switch after a while to increase salary and also increase one's skillset e.g. in technologies, wanting to switch to well-known major companies in the industry,

employees getting frustrated with constantly changing requirements and finding it hard to work with those and generally not adapting to a certain type of job.

"Some people just find it hard to be in that atmosphere where there is like pressure coming from the customer but also from the management. You need to kind of try to somehow find the middle ground how to proceed with each task. Then I know there are some guys that are very analytical... and in my unit we have this day-to-day support and we need to give trainings and stuff... so I know a lot of these software purist guys get frustrated on the way we work."

Question 5. Have you changed or considered changing job while being in an ICT-field's job?

These answers show that the respondents take pride in their job and about being professionals in it. They have changed jobs of ICT-sector before. The need for more creativity in work and will to have a certain type of job inside the industry is emphasized in other interviewee's answer, as is the need for more support when having difficult tasks or heavy workload in other. Both interviewees were however in a fitting job at the moment.

"I believe that if you have a constant pressure to increase your numbers, it doesn't really allow room for creativity or inventing new things. And that is what my current job is all about."

"I have considered changing from my current position as well but that is something that happens maybe once or twice a year, I get this frustrating period of constantly difficult tasks and then I get burned out, no not really burned out but frustrated and start to think that could there be something else in life..."

Question 6. What should your employer have done (or do) in order for you to stay in the organization?

The respondents indicated that in order to stay, their employer should have raised the salary, not micromanage them and start trusting more in their capabilities, take better care for atmosphere of the team, have a proper induction plan, as well as be generally more aware and interested of their employee.

"If you are hired as an expert, there should be a certain level of trust in your capabilities that you know the best way. In this start-up environment when mainly IT engineers find themselves in head of marketing or sales which they don't necessarily have the background for... based on that they don't always have the best decisions, and when it then comes to micromanagement, it's a really, really negative combination that can destroy a lot of the atmosphere and the motivation in the whole team."

Subject 3. Managerial work

Question 7. How do you think the managerial work in ICT could generally be improved and what factors should be more taken into account in this?

The participants saw that the managerial work in ICT could be improved by being more mindful and respecting towards different cultures, taking into account individual needs for attention, leaving authoritarian leading and respecting employees' self-management capability, clarifying resourcing practices and clarifying the goals that are expected to be reached by the employee.

"Especially in ICT-field you work globally so often and with diverse teams that I really believe that the cultural understanding and the mindfulness is one of the biggest factors here, because some people, they need a little more appreciation from the management. Some people like to have a certain amount of guidance. So it's really up to the manager to know the team and to know the individual needs..."

Question 8. How do you think communication could be improved by the employer?

Communication was mentioned as a crucial factor in the questionnaire results, so the researcher prepared a question of it to the interview part. Interviewees saw that for them, it works quite well in their organizations. Another was satisfied with the tools used for remote meetings and trainings for managers, as well as the frequency of the face-to-face meetings. Another would have preferred not to have irrelevant e-mails and notifications and instead only have local messages regarding the employee. By this, the interviewee referred to avoiding information overload in already hectic environment and receiving only necessary information.

Question 9. Are you satisfied with the salary and benefits policy of your organization? Why?

Another question that was based on the questionnaire results regarded the salary and benefits policy. Another interviewee was very satisfied with current salary compared to previous and had no complaints. This interviewee valued the possibility for whole family to live abroad and considered that as a benefit.

Another interviewee indicated that the policy in itself seems quite clear and fair inside the company but the levels of salary amounts are too low compared to other companies. This respondent however was pleased that the employer takes increasing knowledge and capabilities into account.

Question 10. How do you think fairness in the corporate culture could be improved by the employer?

The third and final question about fairness in corporate culture was also based in the questionnaire results but also to the previous findings in research. What is highlighted in these answers is the fact that ICT-professionals want recognition for what they do and in these cases they felt they did not get enough of it. Feedback and praise are important and show also direction to the future performance. Both interviewees told about situations where e.g. only a sales person gets rewarded even though the whole team is behind the effort needed for success. They craved for more appreciation for supporting roles and more recognition from outside their own teams. The answers indicated uneven distribution of attention from management. Fairness has been assessed in research as a very crucial element in a functioning organization which this result in its own part confirms. This also goes along with previous research that knowledge workers want to be treated as equals.

6 Discussion and conclusions

At this point, it is appropriate to summarize the research process. After formulating the aim and research questions that guided the choosing of methods, it proved to be surprisingly difficult to find willing participants for the study. This might be due to the sensitive nature of the topic. Many companies responded politely that they unfortunately were unable to participate. Some gave arguments like they have only recently done a personnel survey and do not want to bother employees again with another. Some neglected to answer at all. Of 20 ICT-sector companies or departments, only three organizations were ready to participate. Naturally all presumable respondents would not answer, as the response rate is almost never actually 100%.

This means that the method was re-evaluated and additional interviews with ICT-professionals were included into the research to give more qualitative insight. Furthermore, the questions for the interview were prepared based on the results of the conducted questionnaire earlier as well as literature of recent research. The qualitative data would better offer an indication of problem areas in the field of this topic. The researcher, however, fully acknowledges the limitations caused by the small sample size. The results are thus not to be generalized, but as said, to highlight certain areas needing further research or improvement action.

6.1 Reflecting results in previous research (theoretical framework and literature review)

When we examine the results and reflect the findings in the theoretical framework and literature review, we see that they match. ICT-professionals in this thesis are proud of their occupation and being professionals in it. As knowledge workers, they are on a daily basis working with tasks that are complex, abstract and require analytical skills. They deal with significant amounts of uncertainty of results. This can be seen in the questionnaire answers for statement *I get enough feedback from my supervisor for what I do*, with which the majority of respondents disagreed. Thus, they expect to have more feedback and guidance to the operative work, since

they are unsure of how well they perform. This is specifically a managerial issue that needs attention. This finding was accompanied by quite similar results for the statement *My supervisor explains the work objectives and expectations clearly* with which 11 agreed and as many as 8 disagreed. With complex tasks, it is even more important to understand, what is being required of you. This is a difficult issue in the sense that while participants felt their responsibilities were not clear enough, they do not want micromanaging either. It is more a question of what needs to be achieved and when, not exactly how it needs to be done, since that is precisely the knowledge work that the employees are hired to do. But responsibilities should be directed by the supervisor, not by knowledge workers themselves. As Drucker said (2007), the supervisors often do not necessarily even know how to do the work, but it is their task to show direction and give feedback of results. Based on the survey, this directing should be more concrete and even the organizational structure of responsibilities seems to need clarification.

Another statement that nearly half of the respondents disagreed with, was *I have a chance of promotion and career development on my job*. Among ICT-professionals, this is a rather alarming finding considering that organizations desperately want - or at least they should - to retain their human capital and knowledge assets. If they see too few advancement possibilities in their current organization, they will most surely start looking elsewhere. As literature confirms, knowledge workers thirst for challenge and development. At the same time developing skills increase their value at the job market. On the other hand, increasing skills benefit the employer organization if they are put into good use. This again raises the question of why do the respondents feel like they don't have a chance and what has the employer done (or left undone) to possibly cause this. Could the employer possibly improve advancement and career possibilities informing? Are the options for changing tasks or job description or advancing not discussed enough or is it really so that these options are lacking entirely? If they are not discussed but are possible, then it is a communication issue. These individual and personal growth needs have to be taken seriously by the employer and they should not be forgotten because of haste or, even worse, ignorance.

The third notion regards the statement of *My salary matches to my job performance and skills*. Near half of respondents disagreed with this. When considering what an employer then needs to do, other than just raise the salary, the obvious answer seems to be at least to communicate the grounds for pay and its different levels better. Communication was an issue in many ways that definitely seems to require more attention from the employer according to the respondents. Salary is a topic that raises emotions. As the results of the interviews showed, employees talk with others about salaries, their levels and what other companies offer. Hygiene factor or not, it definitely seems to be important for ICT-professionals of this research. Moreover, a poorly handled salary can lead to job dissatisfaction and ignite turnover intentions. This statement is also related to statement of fairness in corporate culture. Are the salary grounds justified, equal and understandable? What needs to be achieved or done in order to get a raise? Are everyone treated in the same manner? Mystique around salary questions certainly will not help retaining professionals of high-demand in-house.

When reflecting the results to Hackman and Oldham's Job characteristics model, we find that experienced meaningfulness of work is quite high (only one disagreed with this statement). Experienced responsibility for the outcomes of the work was not actually measured in this survey as such but based on literature review knowledge work generally is associated with greater autonomy and hence greater responsibility experience. The respondents of survey mostly agreed their responsibilities are in balance with their knowhow (only one disagreed). Knowledge of actual results of work activities on the other hand represent feedback from supervisor and this clearly needs improvement according respondents (lack of this knowledge contradicts also expectancy theory). When we also know that knowledge workers typically have strong growth needs, we can conclude that if all of these factors were on a high level, then the likelihood of high internal work motivation, high quality work performance and high satisfaction with work would improve. Knowledge workers would be happy doing complex tasks, if they only were well organized and managed.

If we examine the results in the light of Herzberg's two-factor theory (1968), we can say that mostly intrinsic motivators are driving the professionals, when it comes to the answers of intention to stay. Some hygiene factors like coworker relations seem to be working well with the participants of this study, while salary levels on the other hand, clearly were causing some dissatisfaction. Motivating factors appear divided. Respondents perceived a lack of advancement possibilities but on the other hand they enjoy their work, regard it meaningful and find satisfaction from work in itself. In the motivating factors lies big potential for the employer to increase job satisfaction of these ICT-professionals. Results indicate that by enhancing advancement possibilities and especially improving feedback from results and giving more recognition for success, the employer can increase feelings of achievement in the employee which not only affects positively to job satisfaction but also empowers the employee and leads to feelings of responsibility. This in turn can lead to even more increased feelings of achievement after new feedback in a circular manner, and can act as reinforcement.

If examined in the light of Maslow's need hierarchy theory (1943), the researcher finds in some answers a need for safety to be the basis of continuing the current employment relationship despite dissatisfaction. This is not completely surprising given the recent staff reduction announcements, unemployment rates and globally unstable environment. Certainly it goes along with Maslow's theory that a person needs to fulfill more basic level needs like continuous monthly income for food or living before being able to think of e.g. the need for more creativity in work. It was also reflected in answers the other way round, a person with sufficient salary and low living costs demonstrated clear focus in more upper-level needs.

It is evidential that high levels of commitment and job satisfaction correlate with willingness to stay in the organization's service. This in turn is in relation to corporate metrics, like productivity, profit, customer satisfaction, employee turnover decrease, as well as the general health and well-being of the workforce. It is thus, in the employer's interest to organize the working conditions, the job and career possibilities as such that they optimally support the employee needs. These

study results emphasize the importance of listening to your employees closely, measuring systematically their job satisfaction and commitment and then adjusting managerial actions to meet the needs.

6.2 Answering the research questions

In the following, according to the literature review and the results of this study, the research questions are answered.

RQ1: What factors decrease most ICT-professionals' job satisfaction in the workplace?

These factors are non-functioning communication, too heavy workloads and insufficient or misfocused management (including too much micromanagement).

RQ2: What factors increase most ICT-professionals' job satisfaction in the workplace?

These factors include appropriate and competitive salary & benefits, well-functioning and open communication as well as perceived fairness of the corporate culture.

RQ3: What can the employer do to support ICT-professionals' job satisfaction?

The following guidelines can be proposed:
1. Be more mindful and respecting towards different cultures
2. Take into account individual needs for attention and be interested
3. Clarify resourcing practices, who is doing what and when (not how)
4. Clarify the goals that are expected to be reached by the employee
5. Give more feedback and guidance to operative work
6. Inform more about advancement and career possibilities in the organization
7. Communicate the grounds for pay better

8. Give more recognition to employee achievements and give it fairly

There are certain things that should be considered when managing a knowledge organization since it is different from managing traditional organization. Knowledge workers need to know first their task well enough, ambiguous as it is. Leadership needs to be shared, as no one person can effectively lead knowledge organization. Knowledge workers themselves need to be empowered to take active control of their work. Intrinsic motivators of each individual play key role in doing this. They need autonomy in their work, as well as freedom to be innovative and to be able to learn and develop continuously. Quality assessment of their performance should be careful. Lastly, knowledge workers should be treated as assets. They expect trust from management. They cannot be authoritatively managed as subordinates but as equals among professionals. Instead of loyalty to a superior, they should be loyal to a set of principles that are important in the organization. In this last objective, it is essential that the values of the employee match with the values of the employer organization.

6.3. Reliability

Bryman & Bell (2015) state that three of the most prominent criteria for the evaluation of business and management research are reliability, replication and validity. Reliability addresses are the results of a study repeatable. Particularly a quantitative researcher is concerned with the question of the stability of a measure and consistency of the results. (Bryman & Bell, 2015, p. 41, 49.) The researcher in this thesis demonstrates reliability by properly displaying the research method, data collection method as well as data analysis. The information sources are appropriately quoted and referenced for others to make judgements.

Replicability is another important criterion for quality. In order for the study to be replicable, the researcher has to explain his or her procedures in great detail (Bryman & Bell, 2015). This has been the attempt also in this thesis.

Finally, validity is concerned with the integrity of conclusions of a study. Validity means the study measures what it is supposed to measure (Bryman & Bell, 2015). Validity principles have been taken into account doing this research. In addition, all information represents the participants' free views. All questions in the survey questionnaire were presented both in Finnish and in English to ensure that everyone understands correctly. Interviewees consented to their questions being asked in English.

6.4 Limitations

The original idea was to gather a large amount of quantitative data on the subject but because the qualitative method is better suited for gathering data of such a subjective matter and also from a small group of participants, a qualitative part was added to the study. Small sample size still persists as a limitation of this research. In addition, because the process was delayed due to surprising difficulty of finding participants, the time frame proved too tight to conduct a more thorough or wider study and the actual empirical part was made with the resources available at that time.

What has been omitted mostly from this research, are the personality factors that influence job satisfaction. This would have proved to be too large a study area for this thesis. Another subject that has been intentionally omitted is a closer examination of burnout and its treatment. Moreover, this thesis aims to gather hints of possible turnover intentions and their reasons, but because there are naturally all kinds of reasons outside workplace, this research focuses only on those areas that the employer can actually affect in the workplace.

6.5 Future research

This section is for future research suggestions. The researcher considers it important that these results would be validated by conducting another survey with a much larger sample. Another survey of similar research questions would likely

discover more details of the reasons for turnover intentions of ICT-professionals as well as factors for their job satisfaction or dissatisfaction.

It would be very interesting to conduct a longitudinal study of the topic, similarly as Amabile and Kramer in their study of Inner Work Life (2007). That would help to understand better the contextual elements both vertically and horizontally and the interconnections of these through time.

Thus far, the results of this thesis indicate similar areas of importance as in e.g. M. Viljanen's dissertation of HRM effectiveness in IT professions (2006). Development, compensation and supervision are very important for ICT-professionals, since research shows they have a strong need for personal growth. The lowest evaluations have been in these studies given to financial compensation and internal communication policies. The researcher here would suggest additional research where the perceptions of management and perceptions of personnel would be separately studied. This type of research could offer knowledge of possible contradiction and its reasons.

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8 Appendices

Appendix A.

Job satisfaction survey / Työtyytyväisyystutkimus

Hi!

I am writing my Master's Thesis for Åbo Akademi University Master's Degree Programme in Governance of Digitalization. My thesis addresses ICT-workers' job satisfaction and turnover intentions.

By answering this survey, you will contribute to improving managerial competence in ICT-related knowledge work. Your answers will be collected anonymously and processed with confidentiality. No links can be made to any respondents.

The questions are both in English and in Finnish. It will take about 10-15 minutes to answer. Please answer as soon as possible or **6th of March 2020 by latest**.

Many thanks for your co-operation!

Nina Hovi-Makkonen

Hei!

Kirjoitan lopputyötäni Åbo Akademin maisteriohjelmaan Governance of Digitalization. Työ käsittelee ICT-työntekijöiden työtyytyväisyyttä ja työpaikan vaihtoalttiutta.

Vastaamalla kyselyyn annat tärkeän panoksesi ICT-alan esimiestyön kehittämiseen. Vastaukset kerätään anonyymisti ja käsitellään luottamuksellisesti. Linkkejä vastaajiin ei voida muodostaa.

Kysymykset ovat sekä englanniksi että suomeksi. Vastaaminen kestää n. 10-15 minuuttia. Pyydän vastaamaan mahdollisimman pian, mutta kuitenkin **viimeistään pe 6.3.2020**.

Paljon kiitoksia yhteistyöstäsi!

Nina Hovi-Makkonen

Demographics / Taustakysymykset

Your age? / Ikäsi?
- ☐ 18 - 30 years / vuotta
- ☐ 31 - 40 years / vuotta
- ☐ 41 - 50 years / vuotta
- ☐ over / yli 50 years / vuotta

Your ICT-work experience in years? / ICT-työkokemuksesi vuosina?
- ☐ 0-5 years / vuotta
- ☐ 6-10 years / vuotta
- ☐ yli / over 10 years / vuotta

Your highest completed education? / Korkein suoritettu koulutuksesi?
- ☐ Primary school / Peruskoulu
- ☐ Upper secondary school / Toisen asteen oppilaitos
- ☐ Bachelor's degree / Alempi korkea-aste
- ☐ Master's degree / Ylempi korkea-aste
- ☐ Doctoral degree (PhD) / Tohtorintutkinto
- Some other, what / Muu, mikä?

[_____]

Your position in the organization? / Asemasi organisaatiossa?
- ☐ Labourer / Työntekijä
- ☐ Official / Toimihenkilö
- ☐ Upper official / Ylempi toimihenkilö
- ☐ Manager / Esimies
- Some other, what / Muu, mikä?

[_____]

Your gender? / Sukupuolesi?
- ☐ Female / Nainen
- ☐ Male / Mies
- ☐ Other / Muu
- ☐ Don't want to say / En halua sanoa

The factors affecting job satisfaction / Työtyytyväisyyteen vaikuttavat tekijät

Choose / Valitse

Do you know the values of your organization? / Tiedätkö mitkä ovat yrityksesi arvot?
- ○ Yes / kyllä
- ○ No / en
- ○ Partly / osittain

Choose / Valitse

If you know the values, do you share them? / Jos tunnet arvot, jaatko nämä itse?
- ○ Yes / kyllä
- ○ No / en
- ○ Partly / osittain

Choose the option closest to your opinion / Valitse lähinnä mielipidettäsi oleva vaihtoehto

	Disagree very much / Täysin eri mieltä	Disagree moderately / Kohtuullisen eri mieltä	Disagree slightly / Hieman eri mieltä
I feel I am in the right occupation / Tunnen olevani oikealla alalla	○	○	○
I feel I am good in my work / Tunnen olevani hyvä työssäni	○	○	○
I feel my job is meaningful / Pidän työtäni merkityksellisenä	○	○	○
I get a feeling of accomplishment from my job / Saan työstäni onnistumisen tunteita	○	○	○
I feel my work time is in balance with free time / Minusta työni ja vapaa-aikani ovat tasapainossa	○	○	○
I like my job / Pidän työstäni	○	○	○
I feel my responsibilities are in balance with my knowhow / Koen vastuideni olevan tasapainossa osaamiseni kanssa	○	○	○
I feel I get enough recognition / Tunnen saavani riittävästi arvostusta	○	○	○
There is enough training organized / Koulutusta järjestetään riittävästi	○	○	○
I want to make a career in this organization / Haluan rakentaa uraani tässä organisaatiossa	○	○	○
My salary matches to my job performance and skills / Palkkani vastaa työsuoritustani ja osaamistani	○	○	○
Monetary salary is my main motivation for work / Rahapalkka on tärkein motivaationi työntekoon	○	○	○
I am satisfied with the benefits / Olen tyytyväinen etuihin	○	○	○
I have a chance for promotion and career development on my job / Työssäni on mahdollisuus ylentymiseen ja urakehitykseen	○	○	○
My supervisor is competent in doing his/her job / Esimieheni on pätevä työssään	○	○	○
My supervisor explains the work objectives and expectations clearly / Esimieheni kertoo työn tavoitteet ja odotukset selkeästi	○	○	○
I get enough feedback from my supervisor for what I do / Saan työstäni esimieheltäni riittävästi palautetta	○	○	○
I can also give feedback easily to my supervisor / Voin myös itse antaa helposti palautetta esimiehelleni	○	○	○
I enjoy my working environment / Viihdyn työympäristössäni	○	○	○
Communication is open and works well in our community / Kommunikaatio on avointa ja toimii hyvin työyhteisössämme	○	○	○
I have competent enough co-workers in order to do my job properly / Työkaverini ovat riittävän päteviä voidakseni tehdä työni kunnolla	○	○	○
I think our corporate culture is fair and just / Yrityskulttuurimme on minusta oikeudenmukainen ja reilu	○	○	○

Open questions / Avoimet kysymykset

Mention three things that would increase most your job satisfaction. / Mainitse kolme asiaa, jotka eniten lisäisivät työtyytyväisyyttäsi.

Mention three things that most decrease your job satisfaction. / Mainitse kolme asiaa, jotka eniten vähentävät työtyytyväisyyttäsi.

Choose / Valitse

Do you see yourself working here after a year? / Näetkö itsesi työskentelemässä täällä vuoden kuluttua? ○ Yes / kyllä ○ No / en

Please explain shortly your previous choice above, why? / Kerro lyhyesti yo. valinnan perustelut, miksi?

Other thoughts or improvement ideas? / Muita ajatuksia tai kehitysideoita?

Tietojen lähetys

[Tallenna]

Thank you! Kiitos!

Appendix B.

Interviews with ICT-professionals

Demographics:

Your position level?

Your ICT-work experience in years?

Your work experience in years in current organization?

Your highest completed education?

Subject 1. Job satisfaction

Question 1. What factors do you think increase job satisfaction in ICT-work the most? Why?

Question 2. What factors do you think decrease job satisfaction in ICT-work the most? Why?

Question 3. What could the employer do or improve to support your job satisfaction more?

Subject 2. Turnover intentions

Question 4. What do you think are the main reasons for the voluntary turnover happening in your workplace?

Question 5. Have you changed or considered changing job while being in an ICT-field's job?

Question 6. What should your employer have done (or do) in order for you to stay in the organization?

Subject 3. Managerial work

Question 7. How do you think the managerial work in ICT could generally be improved and what factors should be more taken into account in this?

Question 8. How do you think communication could be improved by the employer?

Question 9. Are you satisfied with the salary and benefits policy of your organization? Why?

Question 10. How do you think fairness in the corporate culture could be improved by the employer?