LAPPEENRANTA UNIVERSITY OF TECHNOLOGY
School of Business
Master in Strategy, Innovation and Sustainability

SAINT PETERSBURG STATE UNIVERSITY
Graduate School of Management
Master in Information Technologies and Innovation Management

Katja Järveläinen

THE RELATIONSHIP OF ORGANIZATIONAL CULTURE, EMPLOYEE MOTIVATION AND INNOVATIVENESS: EVIDENCE FROM FINNISH TECHNOLOGY INDUSTRIES

1st Supervisor/Examiner: Professor Paavo Ritala, LUT
2nd Supervisor/Examiner: Professor Marina O. Latukha, GSOM

Lappeenranta – Saint Petersburg

2014

ABSTRACT

The purpose of this thesis is to analyze the effects of tangible and intangible incentives on the dimensions of motivation and organizational innovativeness in the context of different organizational cultures. Theory suggests that an antecedent of innovativeness is individual creativity of employees, which is influenced by intrinsic motivation, flexible organizational structures, and transformational leadership. Empirical evidence for this research is derived from 424 respondents representing technology-driven industries in Finland. Data is collected through an online questionnaire and analyzed using SPSS statistics software. The results imply that intangible incentives and intrinsic motivation have an important role in determining organizational innovativeness. The positive relationships of intangible incentives, intrinsic motivation and innovativeness seem to be higher in flexible organizational cultures. As practical implications, managers should foster flexible organizational cultures that highlight employee empowerment. The motivating power of non-financial intrinsic incentives and recognition of good work should not be undermined when compared to tangible monetary rewards.

РЕЗЮМЕ

Автор:	Ярвеляйнен, Катя Аурора
Заглавие:	Взаимосвязь между организационной культурой, мотивацией сотрудников и инновационностью на примере технологических отраслей Финляндии
Факультет:	ЛТУ Школа Бизнеса Высшая Школа Менеджмента Санкт-Петербургского государственного университета
Магистратура:	Информационные технологии и инновационный менеджмент
Год:	2014
Диссертация:	Лаппенрантский технологический университет, Высшая Школа Менеджмента, 143 страниц, 11 таблиц, 23 рисунков и 10 приложений
Экзаминаторы:	Профессор Пааво Ритала Профессор Марина О. Латуха
Ключевые слова:	организационная культура, стимулы, мотивация, креативность, инновационность

Целью этой работы является изучить влияния материальных и нематериальных стимулов на различные виды мотивации и инновационности в контексте разных организационных культур. Теория предполагает, что в обстановке инновационности появляются креативность (которая зависит от внутренней мотивации), гибкие организационные строения, и трансформационное лидерство. Сведения скоплены от 424 представителей технологических отраслей Финляндии с помощью онлайн-анкеты. Количественные результаты предполагают, что нематериальные стимулы и внутренняя мотивация играют важную роль в определении инновационности. Положительные отношения между нематериальных стимулов, внутренней мотивации и инновационностью выше в окружение гибких организационных культур. Руководители должны поощрять гибкие организационные культуры которые благоприятствуют повышению компетентности сотрудников. Значительный эффект нефинансовых внутренних стимулов на мотивацию не должны быть приниженными по сравнению с материальном вознаграждением.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

APPENDICES

1. INTRODUCTION

Post-industrial organizations of present day are mostly knowledge-based organizations whose success and survival depends on creativity, innovation, discovery and inventiveness (Martins and Terblanche, 2003). Intense competition, ever changing environment, and uncertainty have forced companies to continually renew themselves. Embracing creativity and innovation is indeed a vital part of corporate strategy that aims at achieving economic growth and sustained competitive advantage. Innovation is one of the most substantial ways to differentiate oneself from the competitors, and it is born from the inventive ideas of individual employees. (Amabile, 1998; Damanpour and Wischnevsky, 2006).

The critical factor in gaining distinctive competences and competitive edge seems to be on the human side of organizations. Though research is demonstrating that employees drive success of the company, there are yet many challenges that managers face in finding specific and optimal ways to motivate their employees. (Stajkovic and Luthans, 2003) Organizations and leaders should strive to create institutional surroundings where creativity and innovation would be accepted as basic cultural norms. Authors like Ahmed (1998), Amabile et al. (1996), Büschgens et al. (2013), as well as Martins and Terblanche (2003) have emphasized the importance of organizational culture and managerial practices in this context. Organizational culture influences the degree to which creativity and innovation are stimulated in an organization. Organizational cultures are often unique because they reflect the personalities and rare experiences of those who work there. Cultures that embody uniqueness and rareness can be seen as assets that hold the potential for generating sustained competitive advantages (Barney, 1986).

Firms that are renowned for their ability to create and commercialize new technologies often emphasize their unique cultures. Leading examples of international firms include Google, Apple and 3M. Finnish equivalents are,

among others, the entertainment company Rovio, and game developers Supercell and Fingersoft. An organizational structure of Fingersoft gives an apt example of unique and flexible organizational culture that emphasizes creative process of work. Company's headquarters situate in a big villa, where creative thinking and idea sharing related to game development often happens in the most informal circumstances. The CEO of the company, Toni Fingerroos, highlights that creative work requires mental stimulation and their current unorthodox workplace brings out the best ideas. (Yle News, 2014)

One of the fundamental building blocks of creativity is person's inner passion to solve problems and transcend challenges. This intrinsic type of motivation that derives from individual's spontaneous interest in the task leads to far more creative solutions than external promises of rewards. (Amabile, 1998) In fact, intrinsic motivation is particularly linked to effective performance in problem solving-related heuristic tasks, whereas reward-contingent extrinsic motivation is often sufficient in automated and repetitious tasks. Lately, the emphasis on intrinsic motivation has increased, as the share of heuristic work in developed economies has grown as opposed to more repetitious work. This is because routine work can be easily outsourced or automated, while emphatic, creative, non-routine work generally cannot. (Pink, 2011) Intrinsic motivation of employees, and therefore also their predisposition towards creative thinking, can be increased considerably by subtle changes in organization's environment and management practices including incentive systems (Amabile,1998).

The relationship of organizational culture and innovation has been extensively studied over the last decades. In their comprehensive literature review of existing qualitative and quantitative instruments for the exploration of organizational culture, Jung et al. (2009) identified a total of seventy instruments and over 100 dimensions associated with organizational culture. This multitude of various cultural variables has led

to a fragmented concept of culture for innovation, and an inclusion into management theory is still missing (Büschgens et al 2013). The purpose of this study is to examine the interrelations between organizational culture, incentive systems, work motivation and organizational innovativeness. In this study, the level of organizational innovativeness is not observed only by the output, but also antecedents that support and enable innovativeness, such as organizational culture, employee motivation, creativity and incentives, are examined. The aim is to find concrete evidence on how organizational innovativeness is impacted by types of incentives and motivation in the context of different organizational cultures. The study intends to provide useful guidelines and HRM implications on how to commit and empower employees to pursue creative thinking and continuous learning. The empiric examination is focused on organizations operating in Finnish technology-driven industries because they are considered to have the greatest innovative potential and would benefit from this type of study. For instance, ICT industry is one of the most innovative and fastest growing industry sectors in the EU, and Finland is among the leading countries in this sector (OECD, 2011).

1.1. Research objectives and questions

There is a vast amount of academic publications addressing each of the concepts studied in the thesis – organizational culture, incentive systems, motivation, and organizational innovativeness. Majority of the observed studies concentrate on examining the links between organizational culture and innovativeness (e.g. Büschgens et al., 2013; Kanter, 1988; Keskin, 2006; Miron et al., 2004; Ogbonna and Harris, 2003; Wang et al., 2010; Özsomer et al., 1997). There are also existing studies focusing on relationships between organizational cultures and incentives (e.g. Bushardt et al., 2011; Kerr and Slocum, 1987; Li and Roloff, 2007; Wright, 2010), as well as different incentives and motivation (e.g. Deci, 1971; Deci et al., 1999a; Eisenberger et al., 1999; Gagné and Forest, 2008; Pouliakas and Theodossiou, 2012). Some studies investigate the connections

between incentives, (intrinsic) motivation and creativity (e.g. Amabile, 1997; 1998; Burroughs et al., 2011; Im et al, 2012), and others observe the influence of organizational culture and incentives on the level of creative behavior in organizations (Amabile et al., 1996; Martins and Terblanche, 2003; Woodman et al., 1993). In spite of the extensive amount of research dealing with the key concepts of this thesis, there are no existing studies discovered by the author that combine all of these concepts together and examine their interconnections using the theories applied in this research.

The constructs studied in this thesis are very topical. The concept of organizational culture has remained an important discussion topic since it became popular in the late 1970s and early 1980s, as organizational researchers including Pettigrew (1979), Deal and Kennedy (1982), Wilkins and Ouchi (1983), and Schein (1984) began thoroughly examining it. Van Muijen et al. (1999) point out that Peters and Waterman's book titled *In search of excellence* (1982) made organizational culture the object of ongoing interest of both academics and practitioners. An overview of literature focusing on innovation shows that only few topics have had a greater agreement among scholars than the current status of significance given to innovation (Llorens-Montes et al., 2005). The importance of managers' role in influencing employees' creativity through effective HRM practices, including an optimal mix of different incentives, is accentuated in the setting where innovation acts as an essential source of sustained competitive advantage for companies operating in technology-driven industries in particular (Damanpour and Wischnevsky, 2006). There is no innovation in organizations without creative ideas from individual employees. Thus, in order to be innovative, managers must stimulate creativity among the personnel. Amabile (1998) suggests that person's intrinsic motivation, which is one building block of creativity, is in fact considerably easy to influence by subtle changes in organizational practices.

The purpose of this study is to examine profoundly the interrelations between organizational culture, intangible and tangible incentive systems, intrinsic and extrinsic work motivation and organizational innovativeness. The aim is to find out how organizational innovativeness is impacted by types of incentives and motivation in the context of different organizational culture types. The study intends to provide empirical evidence in order to combine the four constructs of organizational culture, incentives, motivation and innovativeness. The focus of examination is on employees, and the potential influences of different incentives on their work motivation and consequently on their creativity and therefore also organizational innovativeness.

A resource-based view suggests that human tangible and intangible resources, including e.g. know-how and creativity, as well as the organizational culture possessed by a company can be seen as assets, which are valuable, rare, non-substitutable and inimitable. Miron et al. (2004) also highlight that a company can successfully develop, market and sell its new product, but to do that year after year is a function of culture. Thus, human capital and organizational cultures as assets of a company can be used to build competitive advantage. (Barney, 1986; Rivaldy et al., 2006)

Based on the research objectives and theoretical review of existing literature, the following research questions are formulated:

1. What are the relationships between organizational culture, intangible and tangible incentive systems, employee motivation and organizational innovativeness?

    1.1 What kind of impact do intangible and tangible incentive systems have on organizational innovativeness?
    1.2 Is there a difference between the effects of tangible and intangible incentive systems on personnel motivation?

1.3 Is there a difference between the effects of extrinsic and intrinsic motivation on organizational innovativeness?

1.4 What kinds of incentives are mainly used in different organizational culture types (clan, adhocracy, market, bureaucracy)

1.5 What kind of influence do different organizational culture types (clan, adhocracy, market, bureaucracy) have on the relationship between incentives and motivation as well as incentives and organizational innovativeness?

Due to the fact that the empirical part of this study is conducted in a form of deductive quantitative research, the previously stated research questions are attempted to answer by presenting the following hypotheses. These hypotheses are based on the effects underpinned by the vast amount of existing literature. The structure of these hypotheses is illustrated in Figure 1.

H1: Intangible incentives are more positively related with innovativeness than tangible incentives.

H2a: Intrinsic motivation will mediate the positive relationship between intangible incentives and innovativeness.

H2b: Extrinsic motivation will mediate the less positive relationship between tangible incentives and innovativeness.

H3a: The positive relationship of intangible incentives and intrinsic motivation is greater in clan and adhocracy cultures than in market and hierarchy cultures.

H3b: The positive relationship of tangible incentives and extrinsic motivation is greater in market and hierarchy cultures than in clan and adhocracy cultures.

H4a: The positive relationship of intangible incentives and innovativeness is greater in clan and adhocracy cultures than in market and hierarchy cultures.

H4b: The positive relationship of tangible incentives and organizational innovativeness is greater in market and hierarchy cultures than in clan and adhocracy cultures.
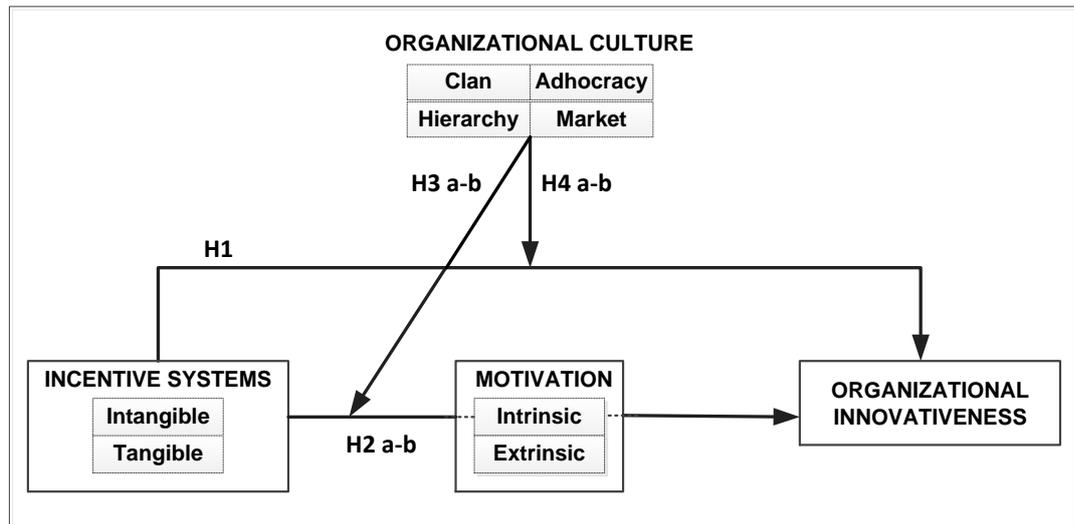
Figure 1. Structure of hypotheses

1.2. Definitions of key concepts

This part introduces and defines the key concepts applied in this study, namely organizational culture, motivation, incentives and organizational innovativeness. These concepts are more broadly discussed and their interconnections examined in Chapters 2-5 of this thesis.

1.2.1 Organizational culture

Organizational culture has been studied for numerous decades and thus the concept has various definitions in the existing literature. In this study, organizational culture is defined according to Barney (1986, 657) as a "*complex set of values, beliefs, assumptions and symbols that define the way in which a firm conducts its business*". This definition is complemented by Hofstede's (1998, 478) characterization of organizational culture as "*the collective programming of the mind which*

distinguishes the members of one organization from another". In this study, organizational culture is examined through a functional sociological disciplinary foundation. This means that the basic assumption is that culture is an attribute possessed by organizations, thus researchers and managers can identify differences between organizational cultures, change cultures, and empirically measure them (Cameron and Quinn, 2006, 146-147).

Organizational culture is so deeply rooted in company's structures and employees that it is mostly subconscious – personnel often quite vaguely describe it as "the way we do things around here". The meaning and manifestation of organizational culture perceived by the employees is established through the process of interaction and socialization in the shared workplace (Denison, 1996, 624). Behavior of the people working in the same organization is influenced by the prevailing culture. However, it is worth pointing out that a work organization is not a total institution and the same organizational culture is not necessarily spread through the entire company, instead, organizational subunits such as departments, hierarchical levels and even project teams may also reflect their own unique cultures (Cameron and Quinn, 2006; Hofstede, 1998). Cultural strength is a concept that is set to describe the extent of uniformity in shared values between organization's members (Saffold, 1988).

Since values are the core of organizational culture, a framework is needed to classify and compare these different values. In this study, the Competing values framework (CVF) by Quinn and Rohrbaugh (1983) is applied. The CVF allows the characterization of organizational cultures into four different types, namely clan culture, adhocracy culture, hierarchy culture and market culture. In this study, the analysis of organization culture is focused on these four culture types.

1.2.2 Incentives

In this study, the generic terms *incentives* or *incentive systems* is used as an umbrella term to encompass such concepts as rewards, compensation and recognition, as suggested by Milne (2007, 30). According to Kerr and Slocum (1987, 99), the incentive system, which determines who gets rewarded and why, is an unequivocal statement of the corporation's values and beliefs. Incentives are used to reinforce organization's values, promote outstanding performance and foster continuous learning by acknowledging desired behavior and level of achievement (Milne, 2007). Incentives are mainly categorized as tangible or intangible, but also such equivalent classifications as extrinsic and intrinsic are applied.

Tangible compensation systems – also referred to as extrinsic reward, pay and benefits systems – are often strategic programmes utilized by organizations to distribute rewards to employees. A common compensation package includes direct pay and indirect pay often in the form of benefits. (Li and Roloff, 2007; Wright, 2010) Compensation strategies are management tools that at their best can contribute to firm's effectiveness and strategic objectives by influencing individual behavior and encouraging high levels of performance (Milne, 2007). A second category encompassing intangible incentives, i.e. intrinsic rewards, includes recognition, work satisfaction and other elements of the work climate (Wright, 2010). Recognition is a non-financial award or token of appreciation given to employees selectively as acknowledgement of a high level behavior and commitment, and it can be as simple as giving positive feedback or just saying "thank you" (Milne, 2007).

Many studies have examined the effects of rewards on intrinsic motivation in particular. In their extensive meta-analysis Deci et al. (1999a) came to the result that intangible, verbal recognitions had a positive effect on intrinsic motivation while tangible rewards had an opposite effect. Monetary rewards and benefits may even reduce the creativity of an

employee because creative thinking takes time that does not show instant results to the management (Anon., 2008).

1.2.3 Motivation

Motivation arises as a result of certain mental processes that, besides arousing interest and energizing, also direct and sustain goal-oriented behavior and performance. Simply stated, a person is motivated when he/she wants to do something. Even though the behavior of a motivated person is characteristically voluntary and volitional, the motivation-enabling processes constantly shape in individual's mind affected by his/her interaction with surrounding environment, such as the workplace. (Cinar et al., 2011; Ryan and Deci, 2000a)

In the context of this study, the focus is set on work motivation of employees in particular. Work motivation and employee engagement are significant elements affecting the performance and productivity of organizations because the more employees are motivated the better they perform (Ahmed, 1998; Ankli and Palliam, 2012; Sokro, 2012; Stajkovic and Luthans, 2001, 2003). Managers can use motivation as a tool if they are aware of what "moves" their employees towards a desired goal (Cinar et al., 2011).

Motivation is a multidimensional construct because people are usually motivated by a combination of different factors (Cinar et al., 2011). Motivation can vary both in level (i.e. amount of motivation) and orientation (i.e. type of motivation) depending on individual's personal inclinations, the type of a task and surrounding environment. In this study, the self-determination theory (SDT) presented by Deci and Ryan (1985) is applied and examination of the origins of individual motivation is focused on two distinctive types – intrinsic and extrinsic motivation. **Intrinsic motivation** refers to doing something because it is inherently interesting and individual derives spontaneous satisfaction from the activity itself, whereas,

extrinsic motivation refers to doing something because it leads to a separable outcome, such as tangible or intangible rewards. Research implies that intrinsic motivation may be more effective on employee attitudes and performance than extrinsic motivation, and even that intrinsic motivation is a key driver of creativity. (Amabile, 1993, 1996; Amabile et al., 1996; Ankli and Palliam, 2012; Cho and Perry, 2011: Ryan and Deci, 2000a)

1.2.4 Organizational innovativeness

This study focuses on innovation at the organizational level, where it is primarily defined as the adoption of an idea, behavior or process that is new to the adopting organization (Damanpour, 1991, 1996; Park and Kruse, 2014). According to Damanpour (1996, 694), the adoption of innovation is a process that contains the generation, development, and implementation of new ideas or behaviors such as new products or services, process technologies, organizational structures and administrative systems. Here, the broad concept of innovation is specified into technical innovations, such as new products, services and production process technologies, and administrative innovations, such as new procedures, policies and organizational forms (Daft, 1978, 197; Damanpour, 1991, 560; Park and Kruse, 2014, 82; Van de Ven, 1986, 592). While technical innovations are linked to basic work activities of an organization, administrative innovations are more directly related to the management activities and the social structure of an organization, including the policies of recruitment, allocation of resources, structuring of tasks, authority and reward (Daft, 1978; Damanpour, 1991).

Organization's inclination to adopt innovations in a process of generating, developing, and implementing new ideas or behaviors, is one of the most substantial ways for a company to differentiate itself from competitors and attain a higher performance level (e.g. Damanpour, 1991; Damanpour and Wischnevsky, 2006; Rubera and Kirca, 2012; Schumpeter, 1975;

Wattanasupachoke, 2012). Considering the intensifying competitiveness in the local and global market environment, innovation is the major challenge for many companies. As even the most stable environments tend to change, organizations adopt innovations continually over time (Damanpour 1991). Continuous innovation and innovativeness are especially important in science and technology-dependent industries, where companies are expected to constantly generate novel products and methods in order to stay competitive and meet the needs of their customers (Rubera and Kirca, 2012, 134). The scope of organizational innovativeness is typically measured by the extent of innovations adopted in a given time period (Damanpour, 1991, 562, 588; Park and Kruse, 2014, 82). Innovations often stem from creative ideas of individual employees, thus it is important for managers to stimulate creativity and aim to organizational culture that enables development and implementation of new ideas and empowers creative individuals (Ahmed, 1998; Amabile, 1996, 1997; Amabile et al., 1996; Özsomer et al., 1997).

1.3. Theoretical framework

The context and focus areas of this study are presented in the theoretical framework displayed in Figure 2 on the following page. The framework is based on the reviewed literature and main theoretical concepts covered in this study. The conceptual model for understanding organizational culture (de Witte and van Muijen 1999a, 498) creates the context for organizational culture in which the relationships between incentives, work motivation and innovativeness are observed.
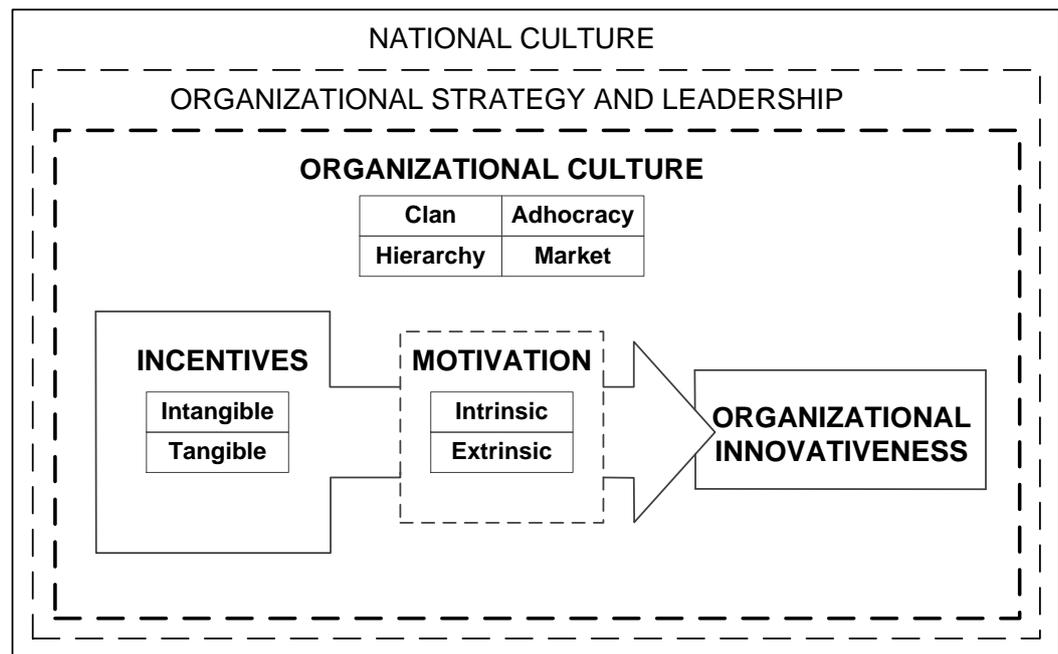
Figure 2. Theoretical framework

Deeper examination of organizational culture types – namely clan, adhocracy, market and hierarchy – is based on the Competing values framework (CVF) presented by Quinn and Rohrbaug (1983). The framework enables the analysis between the four different culture types and their relationship with organizational goals of innovation. Control theory is applied to describe the role of culture in innovative organizations and explain the relationship of organizational culture and innovation. Organizational control is an activity of the management that aims at motivating individuals to act in a way that is consistent with organizational objectives (Büschgens et al. 2013; Ouchi, 1980).

From motivation theories, self-determination theory of Deci and Ryan (1985) is applied and therefore the examination of distinctive types of motivation is focused on intrinsic motivation and extrinsic motivation. Self-determination theory has a broad empirical support and validation. It has been evolving for multiple decades through the active use of empirical approach. Many experimental models and instruments have been

developed along with the theory in order to allow for continued tests and elaborations. (Gagné and Deci, 2005) The self-determination theory also criticizes the dominant views of agency theory, which assumes that employees could not possibly internalize the employer's goals and, therefore, relies solely on the concept of extrinsic motivation and influencing the employees' behavior through compelling and pressuring methods. (Gagné and Forest, 2008)

A resource-based theory is applied to demonstrate how human and organizational tangible and intangible resources can be seen as assets. For instance, a tacit know-how and creativity of committed employees can be seen as an asset that can be used to build competitive advantage. Organizational culture can also be seen as a strategic resource that enables the company to run smoothly, and adapt and generate innovations on a continuous basis. (Barney, 1986; Miron et al., 2004)

1.4. Methodology

The theoretical section of this thesis is based on collecting and analyzing extensive amount of literature published in the fields of business management and psychological/behavioral studies in order to achieve a coherent theoretical basis for understanding the main concepts of this study, including organizational culture, intrinsic and extrinsic motivation of personnel, incentive systems, creativity, and organizational innovativeness. The references for existing theories are mainly retrieved from academically approved scientific articles published in renowned journals, accessed through LUT's and SPbU's databases. Also printed books and reliable internet sources are used but in a minor role.

In the empirical part, a quantitative research in the form of deductive study is carried out in attempt to answer research questions and achieve support for the hypotheses developed based on the extensive literature review conducted in connection with theory exploration. From a quantitative

research designs a correlational research type and a linear regression analysis are chosen to examine the causal relationship among different variables and summated factors (Locke et al., 2010, 97). The primary data is collected using a standardized and self-administered online survey. This type of a quantitative questionnaire that is mediated through the Internet, enables collecting large amount of data relatively easily and at a low cost. An online questionnaire also allows respondents to answer anonymously which may increase the truthfulness of answers by reducing the likelihood of picking the socially desirable answers. On the downside, the response rate of online questionnaires is often quite low – typically 11 per cent or even lower. (Saunders et al., 2009, 364-365) The online survey is created and distributed to the focus group using Qualtrics online survey software. As the data is collected only once from the focus group consisting of multiple companies operating in Finnish technology industries, the design of research is a cross-section of study population (Heikkilä, 2008, 15). The entire research setting can be observed from Figure 3.
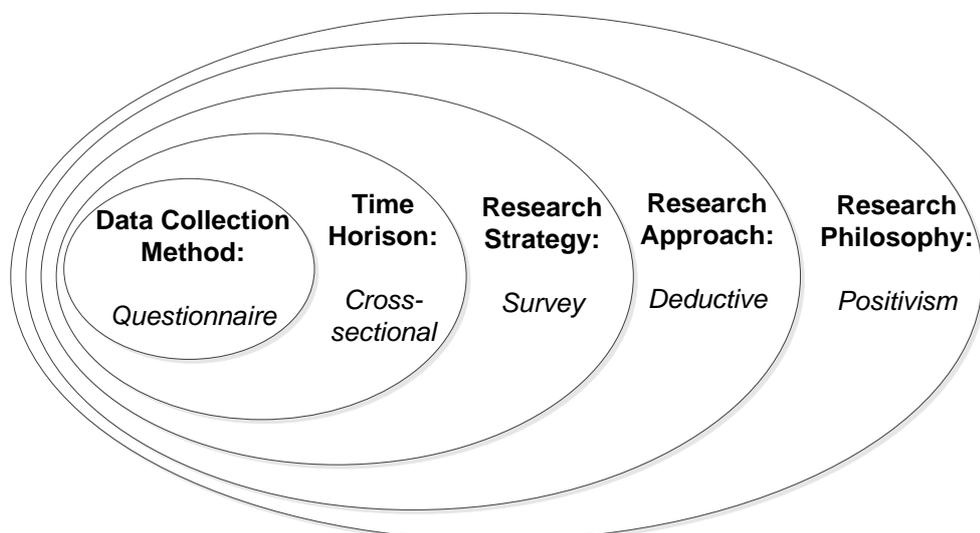
Figure 3. Research design (adapted from Saunders et al., 2009, 108)

More specifically, the focus group consists of companies operating in technology-driven industries classified by the TOL2008 standard, which is based on the NACE Rev.2 classification of economic activities in the

European community (Finnish Customs, 2014). Namely, these industries are electrical and electronics industry, mechanical engineering, metal industry, engineering activities and related technical consultancy, and ICT industry. In case of the ICT industry, NACE Rev.2 standard classification is extended with OECD's definition of the ICT sector (OECD, 2011, 159). All the included industries are presented in Appendix 1. These industries are selected because, in addition to being technology-intensive, Statistics Finland (2013) states that electronics industry received most and metal industry second most international patents in 2012, which can be interpret as one indicator of innovativeness. Additionally, ICT industry is included because it has a high rate of technological progress and innovativeness, it is one of the fastest growing sectors in the EU, and Finland is among the leading countries in this field (OECD, 2011). The sample of companies representing the chosen industries is retrieved from the Amadeus database. The e-mail addresses of appropriate respondents are collected manually online if not listed in the Amadeus research results.

The questionnaire is available in both Finnish and English making it possible to collect answers also from the company managers who do not speak Finnish as their first language. Both questionnaires are presented in the Appendix 6. The questionnaire is structured to be light and appealing, and answering it takes approximately 5 minutes. It consists of six compact parts investigating company's background information, work motivation of the personnel, reward policies, innovativeness of the firm, organizational culture, and lastly respondent's background. The questionnaire mostly consists of closed-ended questions, such as the 4-point Likert summated scales. This is because the perceptions regarding motivation of personnel, the extent of use of various incentives, and adoption of innovations are hard to measure with absolute values. Additionally, a ranking procedure of four different descriptions of organizational culture types is used as an ordinal measurement method. Open-ended questions are stated in the parts concerning company's background (Part 1) and respondent information (Part 6). In these parts exact values make it possible to extract

further information such as company's size category according to the European Commission's definitions, amount of R&D expenditure as a percentage of firm's revenue, and employee turnover.

1.5. Delimitations

This research does not separate between the concepts of organizational *culture*, which is said to be rooted in anthropology studies, and organizational *climate*, which is rooted in the field of psychology (Denison, 1996; van Muijen et al., 1999). Though some researchers (e.g. Schwartz and Davis, 1981; Trice and Beyer, 1993) support the opinion that organizational culture can only be measured through qualitative study methods whereas climate is measured quantitatively, other researchers (e.g. Cameron and Quinn, 2006; Denison, 1996; Hofstede, 1998; Hofstede et al., 1990; van Muijen et al., 1999) see no fundamental objections to measuring culture by quantitative questionnaires. This study supports the latter view and interprets both the culture and climate concepts as a common phenomenon which addresses the creation and influence of social contexts in organizations (Denison, 1996, 645-646). Even though detecting and describing organizational cultures is traditionally associated with in-depth qualitative approaches – which provide a more comprehensive and in-depth information – in order to investigate and compare multiple organizational cultures and provide generalizable results, a quantitative approach must be used (Cameron and Quinn, 2006, 149). According to Jung et al. (2009) a trend toward quantitative approaches can be identified and self-report questionnaires are the most prominent approach to exploring organizational culture.

The study concentrates on examining situational motivation instead of a relatively enduring and stable general motivation, which is mostly dependent of individual's personality traits. Though general motivation may also influence situational motivation and behavior, this research focuses on observing intrinsic and extrinsic motivation as a result of the

situational factors that may promote or inhibit them (Abuhamdeh and Csikszentmihalyi, 2009). According to the self-determination theory (Deci and Ryan, 1985) extrinsic motivation can be further divided to four different types that vary from externally controlled to relatively autonomous (Gagné and Deci, 2005). This research concentrates only on one of these types of extrinsic motivation, which is the most externally regulated, because it is the most obvious one to be observed by the respondents. The most significant limitation of this thesis with regards of studying work motivation of personnel is that the questionnaire is directed only to company representatives working at the executive level. Evaluating work motivation of personnel is based on the subjective perceptions and observations of the company managers. The actual personnel and employees working in different organizational levels might have a better say on what in fact motivates them and what type of extrinsic motivation they are experiencing, but involving both the managers and personnel of the sample companies would make the research too complex and time-consuming for an independent master's thesis work. Also incentive systems and organizational culture could be differently perceived depending on the position inside the company. Cameron and Quinn (2006, 79) noticed from the results of their research that top managers tend to rate the culture of the organization as more clan-focused than managers at lower levels of hierarchy.

Because the sampling is done from technology-based companies operating in Finland, the results may not be generalizable to other industries or countries. The results of this study are most probably valid in the context of technology-related companies in the Nordic countries, as well as other economies and national cultures similar to Finland. This is because the members of these cultures could share similar values to Finland concerning what constitutes an effective leadership and what type of organizational practices, including incentive systems, are most welcomed by the employees.

1.6. Structure of the thesis

This thesis is divided into two major parts. The theoretical part based on a comprehensive literature review comprises chapters 1-5 and the empirical part, which applies previous theories to practice in a form of quantitative research, is presented in chapters 6-8. The structure of this thesis is illustrated in Figure 4.

The first introductory chapter justifies the necessity to conduct this research by bringing forward the research gaps in the existing literature and by highlighting the importance of managing human capital in order to achieve better business performance. This chapter also supports the choice of industries selected to represent the empiric research sample and describes the methodology of this research.

The following chapters 2-5 examine the concepts of organizational culture, tangible and intangible incentives, intrinsic and extrinsic motivation of personnel, as well as organizational innovativeness. These concepts are the building blocks of the entire research and they provide answers to the research questions through theoretical point of view.

Chapter 6 reports the analysis methods, data collection and analysis process; whereas chapter 7 introduces the findings and first-hand empiric results for the research questions stated in this thesis. Chapter 8 summarizes the findings of the research, suggests practical managerial implications, points out the limitations of this particular study and suggests focus areas for follow-up research.
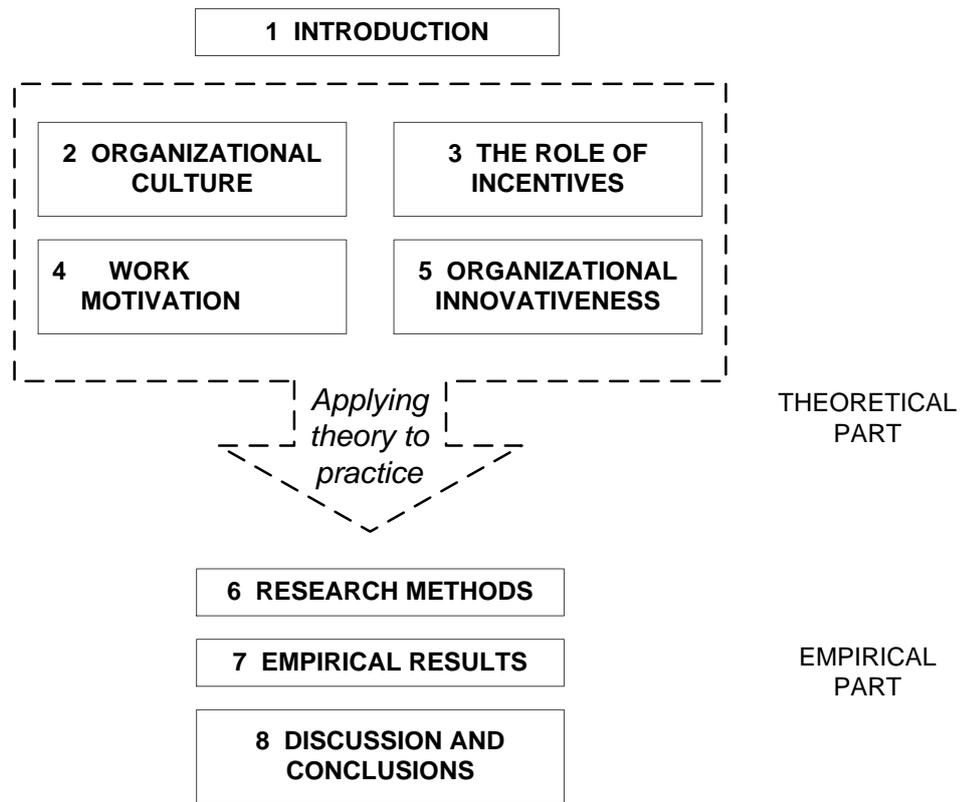
Figure 4. Structure of the thesis

2   ORGANIZATIONAL CULTURE

Organizational culture is a complex and enduring set of values, beliefs, assumptions, and symbols that define the way in which a firm conducts its business (Barney, 1986, 657). It is also the collective programming of the mind which characterizes and distinguishes one firm and its members from another (Hofstede, 1998, 478). The same organizational culture does not necessarily cover the entire organization; instead, subunits such as functional departments, products groups, hierarchical levels, or even teams may also reflect their own unique cultures (Cameron and Quinn, 2006, 16).

There is some dispute regarding similarities and differences between the concepts of organizational *culture* and organizational *climate* (e.g. Denison, 1996; Hofstede, 1998; Jung et al., 2009; van Muijen et al., 1999). This study adopts the viewpoint presented by Denison (1996, 645-646) who analyzed differences between these two constructs and came to a conclusion that both the culture and climate literatures address a common phenomenon, which is the creation and influence of social contexts in organizations. Thus, these concepts should be viewed as alterations in interpretation rather than differences in the actual phenomenon.

In this study, organizational culture is examined from a functional, sociological perspective – it is defined as a measurable and manageable attribute possessed by organizations rather than a metaphor describing organizations (anthropological perspective). Cultural traditionalists pursuing the anthropological perspective see culture as part of what organization *is* rather than something an organization *has*. Consequently, they claim that organizational culture cannot be managed, instead it can only evolve. Consistent with the herein applied sociological perspective, culture is seen as a potential predictor of other organizational outcomes, such as innovativeness and effectiveness. (Cameron and Quinn, 2006, 146; de Witte and van Muijen, 1999, 497)

Organizational cultures have been found to have influence on e.g. firms' financial performance (Barney, 1986; Denison, 1984; Desphandé et al., 1993) as well as creativity (Woodman et al., 1993) and innovativeness (Büschgens et al., 2013; Chandler et al., 2000; Sarros et al., 2008). Indeed, organizational culture is found to contribute to the sustained competitive advantage of companies, because it is a valuable, rare, non-substitutable, and inimitable asset (Barney, 1986; Miron et al., 2004). A company can successfully develop, market and sell its new product, but to do that year after year is a function of culture (Miron et al., 2004). Schein (1996) has stated that organizational culture is one of the most powerful and stable social forces operating in organizations.

Control theory is applied to describe the role of culture in innovative organizations. Organizational control is "*a management activity aimed at motivating individuals to act in a way that is consistent with organizational* objectives" (Büschgens et al., 2013, 764). It is important for managers to ensure that the objectives of employees are in line with organizational goals because the activities of individuals play a fundamental role in shaping innovation processes, such as new product development (Salvato, 2009). Ouchi (1979; 1980) has proposed that organization's control system is composed from market, bureaucracy and clan mechanisms – the latter one being the preferred control mechanism where individuals strive towards the best interest of the collective, and where an informal social control prevails due to a widespread mental programming. Innovative organizational structures are indeed often described to have such features as devolved responsibility, empowerment, community orientation and lack of hierarchy (Ogonna and Harris 2003, 512).

According to Hofstede et al. (1990, 291) organizational culture can be manifested through values, rituals, heroes and symbols – the latter three being reflected through practices (see Figure 5). The core of culture is formed by values which refer to the non-specific and often unconscious

and rarely discussable feelings that are invisible as such, but can be manifested in alternatives of behavior. The observable rituals, heroes and symbols are integrated in practices, and are structured from deep rituals outwards to superficial symbols. Rituals are collective activities that are carried out for their own sake because they are perceived as socially essential within a culture. Heroes are real or imagined persons, who possess characteristics that are highly appreciated in the culture, and are thus seen as models for exceptional behavior. Lastly, symbols are words, gestures, pictures, or objects that have a particular meaning within a culture. Though practices are visible to an outside observer, their specific cultural meaning is established through interaction and shared experiences in the common workplace. Practices are less primal than values and thus more responsive to planned change.
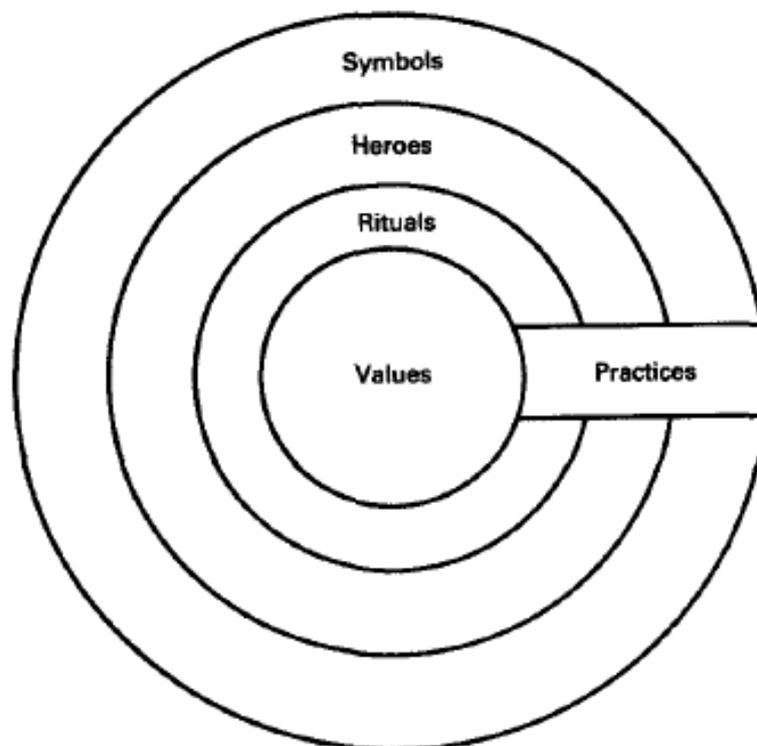
Figure 5. Manifestations of culture (Hofstede et al., 1990, 291)

The conceptual model for understanding organizational culture, presented in Figure 6, demonstrates quite aptly the different elements that influence the organizational culture, and should be taken into consideration.
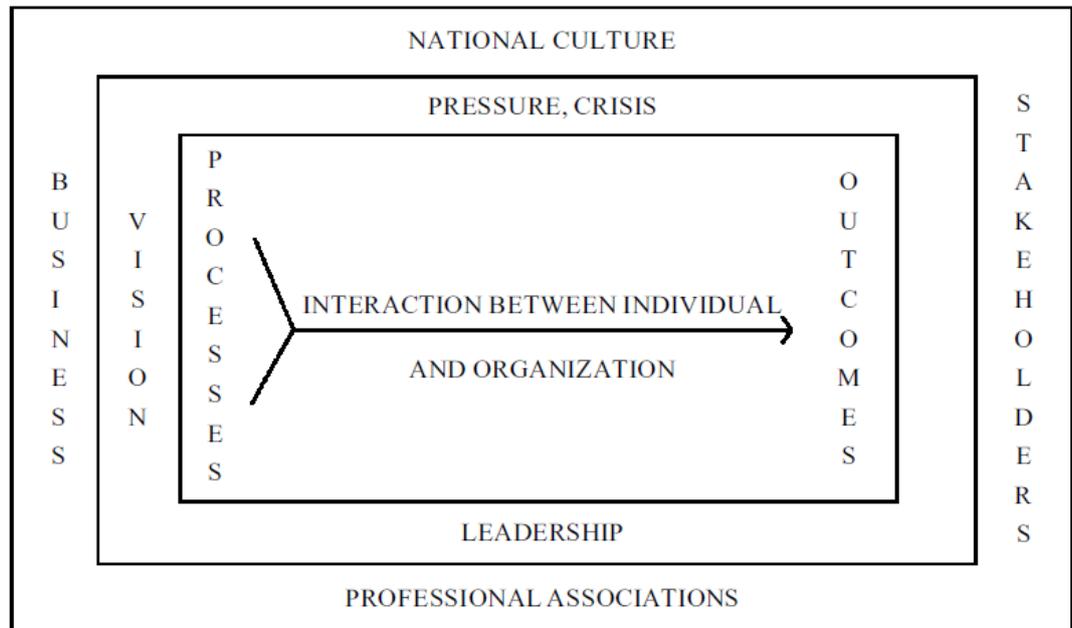
Figure 6. A conceptual model for understanding organizational culture (de Witte and van Muijen 1999a, 498)

The outermost frame indicates factors that influence organizational culture in the broader environment. These are national culture, business, professional associations, and stakeholders. For instance Gordon (1991) emphasizes that the three main assumptions regarding competitive environment, customer requirements and societal expectations are determined by the business sector. Thus, a firm strives to develop such value systems that ensure that strategies, structures and processes are in line with the assumptions. In this context, the term *strategic fit* becomes relevant, as it measures the fit of the organizational culture with internal capabilities and external demands, which enhances performance and enables organization's survival in the market (Saffold, 1988). Professional associations may also lead to formation of departmental sub-cultures,

where members differentiate themselves through use of distinctive language or jargon (de Witte and van Muijen, 1999a).

The next frame shows factors that are closer to the organization. These include development of clear vision and importance of good leadership that can guide the company through the times of crisis. Factors in this frame are influenced by broader environment – for instance, leadership has an impact on organizational culture but is simultaneously influenced by the national culture. The innermost frame visualizes the interaction between different business processes and personnel, which forms and develops the organizational culture. (de Witte and van Muijen, 1999a) Since the results of Chandler's et al. (2000) research indicate that both environmental and managerial practices strongly influence organizational culture, the next two chapters are dedicated to examining the relationships between national and organizational culture as well as leadership and organizational culture in more detail.

2.1 The interplay between national and organizational cultures

In describing individuals, organizational cultures, and national cultures, Hofstede (1995) uses the metaphor of flowers, bouquets and gardens. Though organizational cultures are partly predetermined by and reflect nationality (Hofstede et al., 1990; Witte and van Muijen, 1999a), they are different from national cultures and tend to have firm-specific, unique, and idiosyncratic elements (Hofstede, 1994). Unlike with national culture, membership of a company is often partial and a voluntary decision while representing a certain nationality is permanent and involuntary. Hofstede (et al., 1990; 1994) argues that the most significant difference between national and organizational cultures is in values and practices. Specific values of the national culture are adopted in early youth, while encounter with organizational culture and socialization of practices happens later in life at the workplace. National cultures differ mostly at the deeper level of basic values whereas organizational cultures differ at the level of more

superficial daily practices, such as symbols, heroes and rituals. This makes organizational cultures somewhat manageable when contrasted to uncontrollable national cultures. (Hofstede, 1994) The cultural differences in values and practices between national, occupational and organizational levels are portrayed in Figure 7.
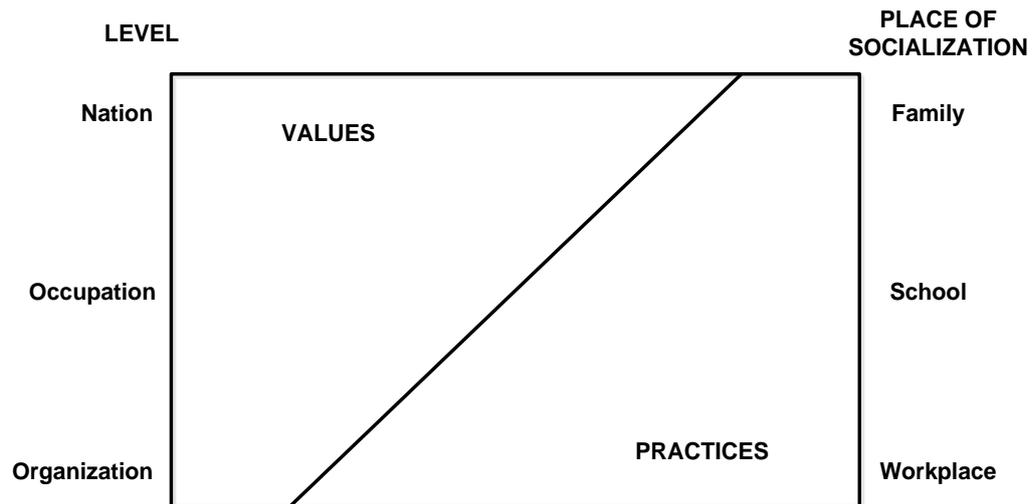
Figure 7. Cultural differences: ratio of values versus practices in different places of socialization (Hofstede et al., 1990, 312)

Finland is seen as a high-tech country. Regardless of its relatively small size it has continually been among the top EU countries to apply high-technology patents (per capita) from the European Patent Office. Finland also scores the highest gross domestic expenditure on R&D among the EU member states. (Eurostat, 2014) Finland is also well-known for its successful educational system. Finnish students have remained for many consecutive years as one of the best performers among the OECD countries. In PISA 2012 assessment, Finland came in sixth place among the OECD countries in mathematics, third in literacy and second in science (Ministry of Education and Culture, 2013). According to Statistics Finland (2012), nearly 30 per cent of the country's population aged 16 to 74 had tertiary level education (comprising universities and universities of applied sciences) in 2009. An effective combination of solid educational system,

prevalence of highly educated people and technological expertise serves as a great breeding ground for innovative, technology focused and knowledge intensive companies.

In attempt to examine Finnish culture and its effect on organizations more in-depth, the international Global Leadership and Organizational Behavior Effectiveness (GLOBE) study of 62 different societies, including Finland, is used as the source of information on how culture-specific characteristics impact on leadership and organizations. The GLOBE study results are introduced mostly on country cluster level – in which Finland, Denmark and Sweden represent the Nordic Europe cluster which is related to the historical concept of Scandinavia – though some findings are also presented on a country level.

The GLOBE study examines cultures as consisting from practices and values. Practices are acts or "the way things are done in this culture" describing the existing situation, while values are judgments about "the way things should be done", in other words the desired situation perceived by the nation's residents. Societal culture is described to consist of commonly experienced language, ideological belief systems, and ethnical and historical heritage, whereas organizational culture consists of common language/jargon within an organization, shared organizational values, and organizational history. The GLOBE project identifies a total of nine major cultural dimensions and six global leader behaviors of culturally endorsed implicit theories of leadership (referred to as CLT), which means that members of culture share common observations and values concerning what constitutes effective and ineffective leadership (House et al., 2004, 11-14). The researchers of the GLOBE project found that nations and their societal cultures have a significant effect on all nine organizational cultural practice dimensions. Table 1 on the following page presents these cultural dimensions and global leader attributes in more detail.

Table 1. Culture and leadership CLT dimensions

Dimensions of culture:	Definition:	Derived from:
1. Gender egalitarianism	The degree to which a collective minimizes gender inequality.	Hofstede's cultural dimensions
2. Assertiveness	The degree to which individuals are assertive, confrontational, and aggressive in their relationships with others	
3. Institutional collectivism	The degree to which organizational and societal institutional practices encourage and reward collective distribution of resources and collective action.	
4. In-group collectivism	The degree to which individuals express pride, loyalty, interdependence and cohesiveness in their organizations or families.	
5. Power distance	The degree to which members of a collective expect power to be distributed equally.	
6. Uncertainty avoidance	The extent to which a society, organization, or group relies on social norms, rules, and procedures to alleviate unpredictability of future events.	
7. Performance orientation	The degree to which a collective encourages and rewards group members for performance improvement and excellence	McClelland's need for achievement orientation
8. Future orientation	The extent to which individuals engage in future-oriented behaviors such as delaying gratification, planning, and investing in the future.	Kluckhohn and Strodtbeck's past, present, future orientation dimensions, and human nature as good vs. bad orientations.
9. Humane orientation	The degree to which a collective encourages and rewards individuals for being fair, altruistic, generous, caring, and kind to others.	

Leadership type:	Definition:
1. Charismatic/ Value-based	Visionary, inspirational, motivational, decisive; expects high performance outcomes from others based on core values.
2. Team-oriented	Collaborative, diplomatic, administratively competent; emphasizes effective team building and implementation of common goal among team members.
3. Participative	Involves others in making and implementing decisions.
4. Humane-oriented	Supportive, compassionate. modest and generous style of leading.
5. Autonomous	Independent, unique and individualistic.
6. Self-protective	Focuses on maintaining safety and security through status enhancement and face saving.

As seen in the table of summarized GLOBE findings on cultural dimensions presented in Appendix 2, the GLOBE study shows that regarding the cultural practices, Nordic Europe cluster scores the highest of all the clusters on uncertainty avoidance and institutional collectivism. In line with its cluster, Finland ranks high on uncertainty avoidance practices (8th) and institutional collectivism practices (10th), additionally future oriented cultural practices are predominant in Finland (14th) and markedly higher than in the Nordic Europe cluster on average (4.25 vs. 3.85). This is interesting, as future orientation is linked to the perceived effectiveness of a charismatic and visionary leadership (House et al., 2004, 325). High scores on uncertainty avoidance practices signify that in Finland various measures such as norms, rules and instructions are taken, in order to reduce the uncertainty associated with the future events. High degree of institutional collectivism practices shows that collective action is preferred and group loyalty is emphasized at the expense of individual goals. Institutional collectivism practices seem to be positively related to country's success in basic science, including the amount of technology transfer and ability to enhance technological development (House et al., 2004, 483). This is most probably due to scientific and technological co-operation between different parties and general societal focus on collective interests and co-operation. High scores on uncertainty avoidance, institutional collectivism and future orientation practices are also significantly and positively linked to country's economic prosperity and ranking in the World Competitiveness Index. Governmental support for competitiveness and prosperity as well as general satisfaction and health are positively correlated with future orientation and uncertainty avoidance. (House et al., 2004, 38)

The Nordic Europe cluster scores the lowest in societal assertiveness practices and in-group collectivism practices, as well as both societal and organizational power distance practices, The Nordics also score surprisingly low on gender egalitarianism, which means that more male

domination and favoritism is perceived. In Finland, this can be somewhat observed through a fact that there are still relatively few women in top positions in both society and business environments. Similarly to its country cluster, Finland also ranks low (54th) in in-group collectivistic societal practices. Since the cultural trait of assertiveness is derived from Hofstede's masculinity vs. femininity dimensions, a low score in assertiveness practices indicates that society is inclined towards feminine values, in other words it values unaggressive and cooperative behavior, and sympathizes with weak. Minor in-group collectivism practices signify that strongly independent and individualistic behavior is valued in the family context. As according to the GLOBE survey (House et al., 2004, 542), power distance societal practices and organizational practices are closely linked, thus infrequent occurrence of power distance and hierarchy in the national culture also results in more equal distribution of power in organizations. (House et al., 2004) Compared with most other European countries, Finland does not have high hierarchies in work life. According to the European Working Conditions Survey of 2005, Finland was top European countries when assessed on how easy it is for subordinates to approach their superior (Lehto and Sutela, 200, 62).

Regarding the values – in other words the desired situation of the way things should be done – Nordic Europe scores high on performance orientation and in-group collectivism. Humane orientation is also high on the values-based wish list. For instance, Finland scores very high (2nd) in humane-orientation society values, while in humane-oriented practices it is ranked as 35th country. Also, in-group collectivism values are much higher than practices, and in case of power distance the desired situation (values) is almost two scale points lower than the current practices. This signals that the country is yet to achieve its optimal state, since there's a gap between the way things are done and the way things should be done. On the other hand, Nordic Europe and Finland (ranked 55th) score the lowest on institutional collectivism values, while, as mentioned before, their score in institutional collectivism practices is one of the highest. This

also means that institutional collectivism practices are higher than the desired situation. In all other societal clusters, excluding Confucian Asia, the conditions are vice versa – institutional collectivism values scoring higher than practices. (Ibid.)

According to the GLOBE study, cultural dimension values, instead of practices, are generally related to the CLT leadership dimensions, as both describe the desired state rather than actual ongoing practices. As identified in the study, a cultural value of performance orientation seems to predict most significantly and positively charismatic/value-based and participative CLT leadership dimensions. High cultural scores on in-group collectivity values are most positively related to charismatic/value-based and team-oriented leadership, while negatively linked to self-protective leadership. Additionally, humane oriented cultural values – in other words being friendly, supportive and helpful towards others instead of pursuing self-gratification – are most remarkably linked to humane-oriented and participative leadership. (House et al., 2004, 41-42) GLOBE researchers state that according to a culture theory of Triandis (1995), such values as altruism, generosity, love and kindness are the most noteworthy as motivating factors guiding people's behaviors in countries where humane orientation is valued (House et al., 2004, 565). In fact, Finland was one of the top countries regarding how frequently workers receive help from their co-workers and superiors when they ask for it in The European Working Conditions Survey of 2005 (Lehto and Sutela, 2009, 62).

All in all, the most effective CLT leadership dimensions in Finland according to the GLOBE survey are charismatic/value-based (5.94), participative (5.91) and team oriented (5.85), while the most strongly rejected leadership style is self-protective (2.55). (See Appendix 2 for more detailed information and scores of country clusters.) Thus, effective leaders are not only seen as inspirational and energizing figureheads of an organization, but also as being able to successfully collaborate and communicate with employees and cultivate a creative work climate.

Additionally, a qualitative research on Finnish organizational cultures and leadership practices revealed that the most frequently used expression in Finnish media[1] to describe was "visionary", while the conducted focus group interviews resolved that Finnish managers were most often characterized as "Gets subordinates involved and develops self-esteem" (Chhokar et al., 2008, 97).

2.2 Transformational leadership: from control to commitment

Strong and visionary leadership is an important factor for organizations' optimal daily functioning, especially in case of unpredictable and highly competitive environment, which is typical in the current global economy. In this study, leadership is defined according to the GLOBE definition (House et al., 2004, 15) as *"the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organizations of which they are members."* The term of organizational control can be applied to describe different managerial methods aimed at motivating employees to act according to organization's goals and objectives (Büschgens et al., 2013). The methods of management have come a long way from the traditional, control-oriented work-force strategies and transactional leadership toward more humane approaches, comprising among other things commitment strategies and transformational leadership. This change from control to commitment happened gradually as managers started to realize that their employees reacted more positively and creatively when they were given broader responsibilities, encouraged to participate and collaborate, and empowered to take satisfaction in their work, rather than when supervised by a tight control and narrow job descriptions (Walton, 1985). The work-force strategies – namely control, transitional and commitment – and their main principles are elaborated in Appendix 3.

---

[1] Including the leading Finnish daily financial newspaper *Kauppalehti* and leading weekly financial magazine *Talouselämä.*

The control-oriented work-force strategy, originating from the early 20th century is based on Taylor's theory of scientific management and strives to achieve order, control and efficiency. This may have been an apt strategy at the time when work was for the most part individual, mechanical and repetitious, but nowadays a strategy that inspires obedience rather than commitment is neither appropriate nor adequate to generate high levels of performance. (Walton, 1985) Another dated type of managing employees is called transactional leadership. This command-and-control type leadership is centered on the exchange relationship where management addresses the material needs of their employees by trading something of a value – most often monetary reward – for work input (Bass, 2000; Molero et al., 2007). Superior performance against the high standards set by e.g. global competitors requires profound commitment which does not exist in a workplace dominated by control. Employees tend to respond to monotonous work tasks and close supervision by putting less effort and intrinsic interest to the function which leads to inferior quality and inefficiency, and as a vicious cycle, these operational deteriorations result in even stricter control (Harrison, 1987). These formal human resource management practices advocating the forms of bureaucracy and hierarchy seem to have an evident negative effect on employees' contribution, creativity and spontaneity (Chandler et al., 2000). Before forsaking the control and embracing the commitment there is a so called transitional stage in between. In this work-force strategy, managers must seek ways to include employees in some level of decision-making and encourage them to participate in e.g. problem solving (Walton, 1985).

As the content of work has become broader, more diverse and demanding, the style of employee management has shifted towards commitment-based approach. In this strategy, more focus is placed on employees' evolving responsibilities, individual contribution and opportunities for influencing the work environment. According to The Quality of Work Life Survey (Lehto and Sutela, 2009) conducted in Finland

in 2008, employees who are able to influence various aspects of their work are more committed to the organization. For instance, as many as 60 per cent of the respondents would be ready to change their employer if there were no possibilities to influence the pace of their work. The same survey also supports the notion that commitment is linked to satisfaction towards the management – 85 per cent of the employees would be ready to change jobs if they felt very unsatisfied with their superiors (Lehto and Sutela, 2009, 135).

The importance of shared vision increases as hierarchical structures flatten and formal ranks become insignificant when contrasted to work experience and expertise. Rather than directing and controlling the employees, manager takes the role of facilitator who delegates, educates subordinates how to self-manage, and emphasizes continuous learning and improvement by offering further training. (Walton, 1985) Committing every member of the staff to the company and effectively promoting their participation in problem solving and development of practices can bring forth valuable novel ideas. When employees feel that their input is valued they become significantly more motivated and emotionally committed to the company which helps to generate and implement great ideas that can potentially create competitive advantages to the firm (Whiteling, 2007). Additionally, *"-- people work harder because of the increased involvement and commitment that comes from having more control and say in their work; people work smarter because they are encouraged to build skills and competence; and people work more responsibly because more responsibility is placed in hands of employees farther down in the organization."* (Pferrer and Viega, 1999, 40).

The commitment-based strategy becomes especially vital in environments requiring organizational learning, problem solving, self-monitoring and teamwork. Committed and motivated staff entails better overall performance and higher incomes. (Walton, 1985) In fact, according to Denison (1984), firms that highlight the participation of employees

generate a return on investment almost twice as great as corporations that lack participative values. Also Pfeffer and Viega (1999) point out that based on research, experience and common sense, there is a direct relationship between a company's long-term financial success (stock market performance) and its engagement in high involvement management (HIM) practices in which employees are treated as assets and placed at the core of the organizational strategy. The researches propose a set of seven practices to reflect successful organizational cultures and firms that are able to achieve long-term financial profits through their employees. These dimensions are employment security, selective hiring, self-managed teams and decentralization, comparatively high compensation contingent on organizational performance, extensive training, reduction of status differences and sharing information (Pfeffer and Viega, 1999). These practices are described in more detail in Appendix 4.

In line with the commitment-based work-force strategy, the so called transformational leadership style has taken a foothold in present-day HRM practices. While transactional leader focuses on the material needs of his/her employees, transformational leader emphasizes employees' sense of self-worth and motivates them to perform beyond the expected level and identify with organization's goals and interests (Bass, 2000; Sarros et al., 2008). As a result of individual recognition and support by the leader, employees feel engaged to their work which enhances greater work satisfaction and effort (Lowe et al., 1996). Transformational leaders are often described as visionary, charismatic, trustworthy, inspiring, engaging, and innovatively stimulating. The leaders of this type also act as mentors and coaches as they tend to focus their intellectual stimulation and feedback on employee's self, rather than the task. (Molero et al., 2007)

The style of leadership is said to be an important determinant of organizational innovation and leaders help to define and shape the organizational culture. For instance participative leadership style is

associated with cultures of innovation and high-performing companies (Ogbonna and Harris, 2000). The role of transformational leader is to decisively promote innovative spirit and support the risk taking necessary to produce innovation which in turn can ensure the long-term prevalence of the firm (Amabile, 1998; Amabile et al., 1996; Sarros et al., 2008). In their research, Jung et al. (2003) specify that transformational leader enhances innovation mainly by engaging employees' personal value systems which increases motivation and leads to better performance, and by encouraging employees to think creatively.

In their study, Sarros et al. (2008, 152-153) found that articulating a vision for the future was a factor of transformational leadership that was most strongly and positively related to a climate for organizational innovation and a competitive, performance oriented organizational culture. According to Belassi et al. (2007), a positive work environment in the form of strong leadership and participative employee practices leads to a greater level of commercial success in new product development projects, as well as better success in achieving customer satisfaction. A supportive leader who possesses transformational characteristics also leads to more intelligent organizations, as organizational learning capability increases due to intellectual stimulation and individualized motivation of the employees (Lloréns Montes et al., 2005). A CEO's self-direction values emphasizing freedom, exploring, learning and creating, are positively linked to innovative organizational culture according to a study conducted by Berson et al. (2008, 626). Furthermore, the researchers found that innovation culture is positively related to such organizational outcomes as sales growth and employee satisfaction. On the other hand, CEO's appreciation for security has a negative impact on innovation culture and instead cultivates a bureaucratic culture. Berson et al. (2008, 618) also point out that self-direction values tend to guide individuals' attention and action towards intrinsically rewarding intellectual opportunities.

As supported by Böckerman et al. (2012), high involvement management (HIM) practices often lead to higher subjective wellbeing of Finnish employees and fewer workplace accidents. The researchers also point out that employees that are exposed to HIM practices are often multi-skilled, and thus can cover for one another's short absences, which helps an employer to reduce costs and time losses of finding an appropriate replacement. Also higher job discretion and the feeling of employment security are positively correlated to HIM practices in Finland (Kalmi and Kauhanen, 2008). Employee's job satisfaction, trust in employment and commitment to an organization can also act as predictors of the so called *organizational citizenship behavior* (OCB) (Podsakoff et al., 1990; Williams and Anderson, 1991). According to Becton et al. (2008, 494) OCB is a "*behaviour characterized by individuals voluntarily making prosocial contributions to the organisation that are above and beyond their job duties*". In other words, OCB can stimulate firm's performance, financial efficiency and customer satisfaction, but is often unrecognized by the formal reward systems inside the firm. For this reason, it is important to create management methods that would encourage employee's citizenship behavior. One way would be to formally evaluate and reward employees demonstrating OCB. Since employee's source of motivation for displaying OCB plays a major role in defining what type of incentives should be used to promote this behavior, it is important to weigh the possibility that formal rewards could in fact decrease the level of OCB in those employees who are intrinsically motivated and have a genuine desire to be their organization's citizens. (Becton et al., 2008)

2.3 Organizational culture types: the competing values framework

Organizations can be categorized into predefined types depending on their prevailing characteristics. According to Jung et al. (2009), these categorizations can be of a general descriptive nature, such as differentiating between homogenous or heterogeneous cultures, or rooted

in psychoanalytical concepts, such as Jungian archetypes. In this study, organizational analysis is based on the latter concept because the Competing values framework (CVF) by Quinn and Rohrbaugh (1983) is applied to categorize organizations based on their core values and culture types. CVF defines organizational culture as an attribute of the organization that emerges from collective behavior and can be separately measured and managed – in other words, CFV adopts a disciplinary foundation of a functional sociological tradition. Additionally, the CVF approach focuses on culture attributes rather than climate attributes, thus it is assessed "how things are" rather than how individuals feel about them. (Cameron and Quinn, 2006, 146-147)

Classification of organizational cultures and their core values into different types is important because it increases awareness of the underlying organizational structures which are needed to be understood in order to draw meaningful comparisons between different culture types and study potential relationships between different cultures, and for example organizational innovativeness (Büschgens et al. 2013). In the empirical part of this study, different organizational cultures are diagnosed by using the adapted Organizational Culture Assessment Instrument (OCAI), which is based on the CVF and has been found to be accurate in diagnosing important aspects of an organization's underlying culture (Cameron and Quinn, 2006, 23). The CVF is a well-applicable model to interpret different organizational cultures because it incorporates several dimensions proposed by other independent authors, and there are also various culture scales based on the CVF, thus the model is empirically valid (Büschgens et al., 2013; Cameron and Quinn, 2006; Howard, 1998).

The CVF was originally developed from research conducted on major indicators of effective organizations (Quinn and Rohrbaugh, 1983). The framework describes value systems by introducing two main dimensions with contrasting axes signifying the opposing values. The vertical axis runs between opposing values of flexibility and control describing whether the

emphasis is on organic versus mechanistic processes. The horizontal axis runs between opposing values of internal focus and external focus describing whether the focus is on organization's internal harmonious characteristics or on the improvement of firm's competitive position within the external environment. For example Nike can be regarded as a company deriving its effectiveness from its organizational versatility and rapidly changing product mix, whereas Boeing's effectiveness is in its longevity and organizational steadiness. IBM can be presented as an example of a company that is effective due to its consistent focus on internal organizational cohesiveness described as "the IBM way", whereas for instance Toyota is known for its glocalization-strategy and independence of its international branches. (Cameron and Quinn, 2006, 34-35) Typically organizations balance between the two dimensions as they often strive for growth, resource acquisition and external support, while simultaneously wanting to maximize their control of information and formal communication (Dastmalchian et al., 2000).

The complete CVF model is demonstrated in Figure 8. The presented two intersecting dimensions organize the indicators of effective organizations into four main clusters based on the core values forming a four-cell model of distinctive organizational cultures. These four distinct organizational culture types are: clan culture (emphasizing flexibility and internal focus), adhocracy culture (emphasizing flexibility and external focus), market culture (emphasizing stability and external focus), and lastly a hierarchy culture (emphasizing stability and internal focus). Each of the culture types is competing with, or contradictory to, the culture type on the diagonal (Cameron and Quinn, 2006; Quinn and Rohrbaugh, 1983). Thus, clan culture, in the upper left quadrant, is contradictory to the market culture situated in the lower right quadrant; similarly, the adhocracy culture is competing with the hierarchy culture. Büschgens et al. (2013) highlight that organizations' value systems are often not as simple and one-sided, and cannot be classified absolutely by only one cultural quadrant. Instead, organizations often internalize values from different quadrants with an

emphasis on one or two of them. For instance, collective information processing could be seen as a mean to collaboration and common morale in the clan culture, whereas in hierarchy culture it could be perceived as a mean to maintain stability and control. The prevalence of a specific organizational culture type can be assessed by measuring the strength of a culture – this issue is more closely examined in Chapter 2.5.

Flexibility and Discretion

CLAN
Orientation: Collaborative
Means: Cohesion, morale
Ends: HR development
Leader type: Facilitator, mentor, team builder
Value drivers: Commitment, communication, development
Theory of effectiveness: Human development and participation produce effectiveness.

ADHOCRACY
Orientation: Creative
Means: Flexibility, readyness
Ends: Growth, resource acquisition
Leader type: Innovator, entrepreneur, visionary
Value drivers: Innovative outputs, transformation, agility
Theory of effectiveness: Innovativeness, vision, and new resources produce effectiveness.

HIERARCHY
Orientation: Controlling
Means: Information management, communication
Ends: Stability, control
Leader type: Coordinator, monitor, organizer
Value drivers: Efficiency, timeliness, consistency and uniformity
Theory of effectiveness: Control and efficiency with capable processes produce effectiveness

MARKET
Orientation: Competing
Means: Planning, goal setting
Ends: Productivity, efficiency
Leader type: Hard driver, competitor, producer
Value drivers: Imarket share, goal achievement, profitability
Theory of effectiveness: Aggressively competing and customer focus produce effectiveness.

Internal Focus and Integration

External Focus and Differentiation

Stability and Control

Figure 8. The Competing values framework (adapted from Cameron and Quinn, 2006, 45; Quinn and Rohrbaugh, 1983, 369)

Next, each of the culture types included in the CVF is defined in more detail according to the illustrations made by Cameron and Quinn (2006, 37-48).

2.3.1 Clan culture

Name of this culture type is derived from organization's resemblance to an extended family. An organization where clan culture is predominant emphasizes friendliness, high cohesion and morale, shared values and goals, employee involvement, corporate commitment to employees, and a general sense of fellowship. The principal characteristics include minimal management levels, self-management, verbal and informal communication, employee ownership (company stock or options), work teams, participation in company decisions and regular job rotation between different tasks. Majority of work is done in semiautonomous teams that are rewarded on basis of team accomplishment. Also, quality circle programs that encourage employees to bring forward their improvement suggestions and an overall empowering work environment are salient features of a clan culture. Basic assumptions in a clan culture are that the environment can be best managed through teamwork and employee development, customers should be considered as partners, the organization is in the business of developing a humane work environment, and the major task of management is to empower employees and facilitate their participation, commitment, and loyalty. The most effective leaders in organizations dominated by clan culture are perceived as parent figures, team builders, facilitators, nurturers, mentors, and supporters.

2.3.2 Adhocracy culture

The word "adhocracy" is derived from a term "ad hoc" – expressing something specialized, temporary, and dynamic. Adhocracy-dominant organization serves as a dynamic, entrepreneurial and creative workplace that emphasizes individuality and involvement of employees in forecasting the future development. The goal is to foster adaptability, flexibility, and creativity in highly turbulent environment where uncertainty, ambiguity and excess information are typical. The basic values holding the organization united are commitment to pioneering and experimentation, courage to take

risks, and innovation, as well as an aspiration to be at the leading edge of new knowledge, products, and services. Adhocracy cultures are typical to industries including software development, think-tank consulting and aerospace technologies. In fact, sometimes adhocratic subunits exist in larger organizations that have a dominant culture of a different type. The effective adhocracy-type leaders tend to be future-oriented, visionary, innovative, creative, risk-oriented and entrepreneurial. They are also often rule breakers, instead of rule reinforces, and are perceived as warm and supportive.

2.3.3 Market culture

An organization that is described by the market culture is distinctly oriented towards the external environment and functions primarily through economic market mechanisms, such as monetary exchange, to achieve competitive advantage. Transactions – including sales, contracts and exchanges – taking place with a wide range of external stakeholders are the focus point of this type of an organization and transaction costs serve as the most important foundation of organizational effectiveness. A stereotypical market culture emphasizes high competitiveness, outpacing the competition, profitability, bottom-line results and market share domination. Since the market organization is a tough and results-oriented workplace with core values of competitiveness and productivity, effective managers tend to be demanding, hard-driving, whip-cracking competitors, who excel in directing, producing results, negotiating and motivating others.

2.3.4 Hierarchy culture

This cultural approach is based on the work of Weber (1947) who proposed seven characteristics that would make organizations at the time more efficient. These seven attributes of bureaucracy were: rules, specialization, meritocracy, hierarchy, separate ownership, impersonality

and accountability. Up until the 1960's Weber's proposition was seen as the ideal form of organization because it led to stable, efficient and consistent products in a predictable environment. Clear hierarchy, centralized control, and decision making together with standardized rules and procedures are valued as the key features of a successful and smoothly running hierarchy-based organization. Almost no discretion is provided by the job and employees are urged to follow the rules and established procedures instead of expressing their ideas and creativity. Often large organizations and government agencies are dominated by a hierarchy culture. Effective managers are efficiency-focused and good at coordinating, organizing, administrating, controlling and reinforcing rules.

2.4 Peculiarities of organizational cultures

When describing the effective leadership characteristics in the above discussed culture types, one can notice that the term "leadership" is mentioned together with clan and adhocracy cultures, whereas "management" is associated with market and hierarchy cultures. Indeed, leadership is commonly considered to emphasize human-orientation, teamwork, innovation and change, while management is linked to maintaining structures, stability and productivity. Though there are clear differences between leadership and management, they are interlinked and complementary. Making distinctions in order to separate or rank these two features is unwise since both are required in order to create, maintain, strengthen, or change any type of organizational culture. Both are needed for organizational effectiveness because change without some level of stability leads to chaos and innovation without productivity is unattainable. (Cameron and Quinn, 2006, 80)

Organizations often experience a change in their culture which tends to follow organization's life cycle in a predictable pattern. Quinn and Cameron (1983) divided organizational life cycle into four different stages: entrepreneurial stage, collectivity stage, formalization and control stage,

and lastly elaboration of structure stage. They found that in the earliest, entrepreneurial stages of their life cycle, organizations tend to be dominated by the adhocracy culture. Over time, when moving towards the collectivity stage, the entrepreneurial orientation is replaced by a clan culture. As the organization grows and its responsibilities expand, also the need to emphasize structure and control increases. Thus when entering the stage of formalization and control, organizational culture often changes towards hierarchy. Eventually, mature organizations, facing the stage of elaboration and structure, focus on market culture where external competitiveness and relationships are emphasized. Additionally, hierarchy and market cultures – both rooted in stability and control – have a tendency to remain dominant for the longest period of time in organization's life cycle. It is also extremely difficult to make a change towards more flexible clan and adhocracy cultures. An apt example of an organization that underwent this type of a cultural transformation during its life cycle is Nokia. In an article published by Helsingin Sanomat[2] (Hämäläinen, 2014), a former Nokia employee Pekka Lonka – an engineer who worked in product development for 25 years – goes through the rise and fall of Nokia's mobile phone business. Lonka describes how the 1980s represented a time of employee enthusiasm, Nokia's drive for growth, innovativeness and success, and collaboration with creative designers in order to make the products stand out from the competition. He states that Nokia lost its agility and poise and became more stationary by the end of the first decade of the 21st century. Inner structure became so complex that decision-making and division of new tasks happened very slowly. Also several organizational changes took place leaving many former low-level bosses wondering aimlessly without any meaningful tasks. Lonka ponders that success of the company led to arrogance and the organization lost its former courage and creative "madness". The inner interest of employees died out as work became less about developing novel products and more about executing processes assigned from the top of the hierarchy. It was commonly acknowledged that substantial bonuses followed projects that

---

[2] Helsingin Sanomat is the largest daily newspaper in Finland.

were completed in a standardized way and on time, thus it was easier for employees to just follow the mainstream instead of voicing their opinions.

When examining the relationship between different organizational cultures and organizational innovativeness, a recent study by Büschgens et al. (2013) provides interesting results. Though the researchers use different names to describe organizational cultures (namely group culture, developmental culture, rational culture, and hierarchical culture), their core values and dimensions are similar to the culture types identified by the CVF. The results of the analysis reveal that organizational focus on innovation is most strongly and positively related to the presence of developmental culture (in other words adhocracy culture), then, in a descending order, to group culture (clan culture) and to rational culture (market culture). Organizational focus on innovation was found to be negatively related to the presence of a hierarchical culture. Regardless of these results it is important to keep in mind that there are no good or bad cultures as such – even though hierarchy seems to decrease organizational innovativeness it may effect positively on other organizational goals. Additionally, Büschgens et al. (2013) establish that an innovation-supportive culture appears not to differentiate between incremental and radical innovations, and that it is most probably equally supportive to various types of innovations.

Desphandé et al. (1993) studied the relationship between organizational culture types and business performance[3] in Japanese firms. Their results state that business performance is at the highest level in market cultures, emphasizing competitiveness and market superiority followed by organizations with adhocracy cultures. Clan and hierarchical cultures are on the other hand associated with unsatisfactory business performance, the latter being the worst of two. Based on these results, organizational emphasis on external focus over internal maintenance is likely to be

---

[3] Business performance was measured by such indicators as market share, profitability, growth rate, and size of a business in relation to its most significant competitors.

associated with stronger performance. The researchers also found a significant positive relationship between innovativeness of the firms and their performance, thus supporting a notion that customer focus and innovation should be at the core of any business.

2.5 Strength and effectiveness of organizational culture

Since the core of organizational culture is shared values and beliefs, the strength of a culture refers to the extent of uniformity and prevalence of these deeply rooted values and practices between the members of organization (e.g. Hofstede, 1998; Miron et al., 2004; Saffold, 1988). Amongst other researchers, Sathe (1983) and Schein (1984) argue that cultural strength and cultural congruence – meaning the distribution and prominence of the same culture types and values across various parts of the organization – should be the main cultural dimensions of interest. In congruent culture, the strategy, incentive systems, human resource management practices and other dominant characteristics often accentuate the same type of cultural values which makes the whole organization more cohesive and promotes community-like sharing of social understandings and behavior patterns (Cameron and Quinn, 2006).

Strength and congruency of the organizational culture are often seen as positive features because widely-shared values help to point the employees towards the same direction and align their goals with the common strategy governed by the management. The existence of a strong and congruent organizational culture will more probably contribute to a higher level of performance. In weak and incongruent cultures the goals of employees may be scattered, different or even opposite to those of the management, which can create disconnects and obstacles that harm effective performance and impair the energy and focus of employees. Lack of cultural congruence, together with related feelings of discomfort and ambiguity between the organizational members, can lead to organizational change as it helps to detect the dysfunctional issues inside

the organization. Thus, a short-term incongruence can even be beneficial. However, if it prevails on a constant base, it will lead to inefficiency. (Cameron and Quinn, 2006; Saffold, 1988; Sokro, 2012) According to the so called "*strong culture hypothesis*" (Denison, 1984), positive shared values, beliefs and behaviors improve performance in proportion to the strength of their appearance inside the organization. Barney (1986) also highlights that the rarer and more imitable the organizational culture, the more valuable it is because it facilitates sustained competitive advantage and leads to superior economic performance.

Hofstede (1998) points out that the downside of strong cultures is that they are difficult to change and less adaptable to changing circumstances and turbulent environment than weaker cultures due to a social control mechanism in a form of widespread and immutable mental programming. It seems that strong organizational cultures enable reliable performance levels in relatively stable industries and circumstances but these benefits are significantly reduced in a more volatile environment (Sørensen, 2002). It can be argued that companies face a tradeoff between strong internal culture and the level of adaptability to environmental change. March (1991) describes a similar issue by proposing a tradeoff-relationship between exploitation and exploration. He suggests that firms described by a strong culture excel at exploiting established competencies but have problems exploring novel competencies that have a better fit with changing environmental conditions. Indeed, it can be argued that strong organizational culture, which results in employees focusing in the same direction, may also hinder necessary innovation and change.

According to Sørensen (2002), three interconnected explanations for the performance benefits of strong cultures have been put forward. First, broad and deeply-rooted agreement of appropriate values, beliefs and norms enables informal social control within the organization, which means that violations and misbehaviors are more likely to be promptly detected and corrected by other employees, regardless of their status in

the formal hierarchy. This makes corrective actions more effective and less costly than formal control structures. Secondly, strong cultures enhance goal alignment and common understanding of firm's best interests which decreases the feeling of uncertainty and enhances coordination. Lastly, strong cultures enhance work motivation and performance through experiences of self-direction and empowerment.

Due to the community-like sharing of energy, social understandings and behavior patterns, strong and congruent cultures tend to empower employees and create emotional attachment between the personnel and the firm which contributes to employees' motivation, commitment, performance, loyalty and work satisfaction (Sokro, 2012). According to Martin (1992), these types of strong cultures that act as unifying glue among the employees and are generally detected across the organization, can also be called *integrated* cultures. She also proposes two other cultural perspectives: *differentiated* where cultural differences among subunits arise and organizational values are not widely identified, and *fragmented*, where there is not one prevailing and recognizable culture as individuals often shift from one to another culture within the company. Sokro (2012) also mentions the work of Truskie (1999) who identifies high-performance organizational cultures as integrated and balanced cultures that consist of four complementing key elements: cooperation, consistency, achievement and inspiration.

3   THE ROLE OF INCENTIVES

According to the economic theory on incentives, employers try to control the effort that personnel apply on different work tasks by planning an incentive scheme (Prendergast, 1999). Incentive is something that motivates an individual to take an action. In this study, the generic term "incentives" is used to encompass such concepts as rewards, remuneration, compensation and recognition, as suggested by Milne (2007, 30). More specifically, two distinct types of incentives – tangible and intangible – are closely studied using the classification designated by the Total reward framework (Figure 10 in chapter 3.1). Total reward signifies all of the tools available to the employer that may be used to attract, motivate and retain talented employees. From the employee point-of-view, total reward includes everything of value resulting from the employment relationship. (World at Work, 2014) The concept strives to bring some strategic coherence to the distinction between extrinsic and intrinsic incentives (Wright, 2010).

Remuneration of personnel is an essential part of a HRM strategy, which represents a part of the entire business strategy of a firm (Figure 9). It is of a high importance to keep incentive policies in line with the business strategy since a key factor of a well-functioning and effective workplace is the compatibility between incentives and company's strategic objectives, principles and main functions. (Kauhanen, 2012; Vartiainen and Kauhanen, 2005) Incentive systems that are complementary to the business goals are the most likely to ensure a substantial payoff (Huff, 2007). Formal incentive policies can be considered as a symbolic manifestation of a culture – this is particularly true in case of startup firms, where the reward system has been found to have a strong impact on organizational culture (Wright, 2010). Inventive strategy should consider at least three of the following issues: what kind of results the organization wants to reward; on what level rewards are given (e.g. individual, group, or

organization); and how the reward is distributed (e.g. number of personnel, work hours, or wage level). (Vartiainen and Kauhanen, 2005, 16)
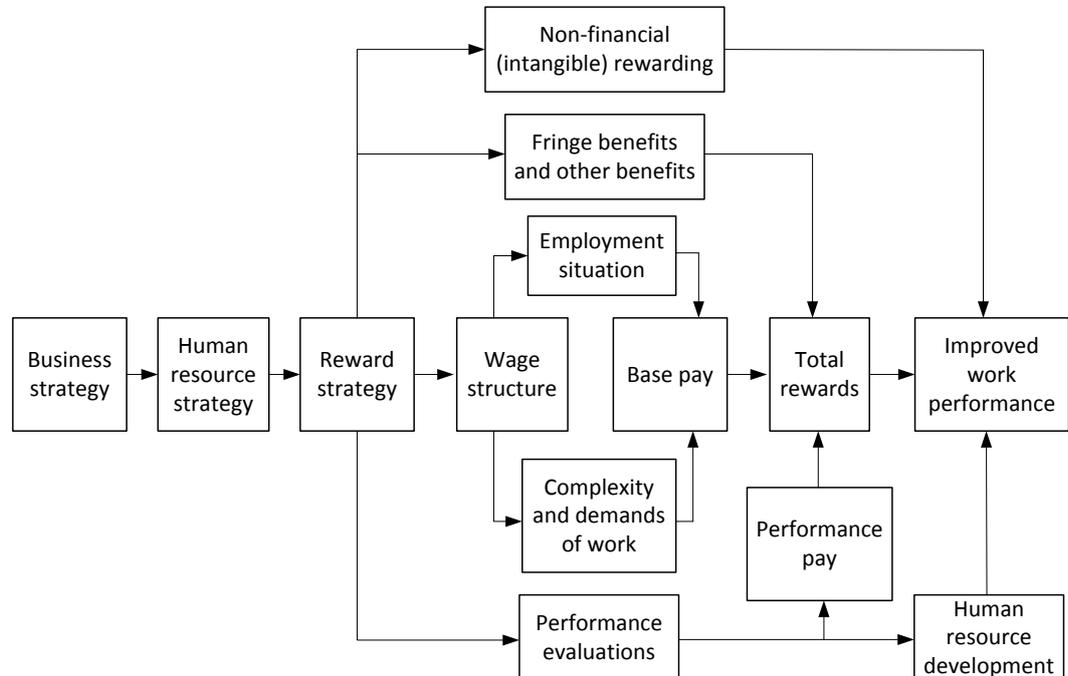
Figure 9. Reward system as a part of organizational entity (Adapted from Vartiainen and Kauhanen, 2005, 18)

Many organizations strive to design an effective reward and recognition process that would act as a signal of their commitment to employees and spread organizational values and beliefs across the personnel (London and Higgot, 1997). Besides reinforcing organizational values, incentives are also used to promote outstanding performance and foster continuous learning by acknowledging desired behavior and level of achievement (Milne, 2007). The incentive system can also have a significant impact on firm's innovative activity – it can either be a tool to increase innovativeness, or it can discourage innovative activity by focusing on rewarding other behaviors (Chandler et al., 2000). Not all of the companies perceive the goals of HRM and incentive systems to be important or worth actively pursuing. In most of these cases a company lacks experts who could harness the power of human resources for proper

use, the management disregards the importance of HRM, and the personnel are seen as a cost factor instead of an asset.

3.1 Classification of incentives

The entirety of an incentive system, in accordance with the perspective of the total reward framework, consists of intangible incentives, which are most often related to employee's development paths and social aspects, and tangible incentives, which are further divided to direct remuneration (money) and either statutory or voluntary indirect remuneration that carries an economic value at least to the employer (Kauhanen, 2012, 114).
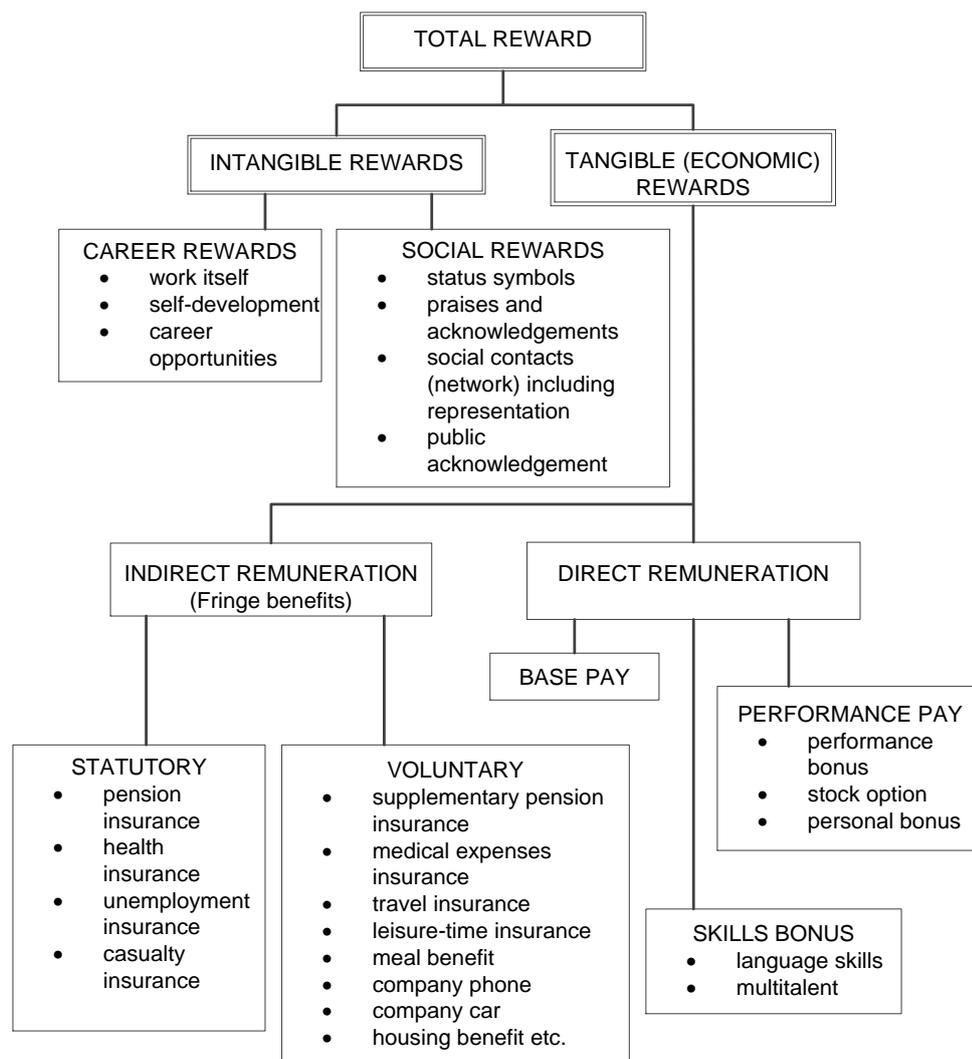
Figure 10. The total reward framework (adapted from Kauhanen, 2012, 111)

More specifically, intangible incentives comprise the opportunity to develop your skills, advance in career, and have an influence in your work community. Additionally these types of incentives include receiving feedback and appreciation for your skills and work tasks, having flexible working time arrangements, and job security. (Vartiainen and Kauhanen, 2005, 22) As a part of tangible direct incentives, base pay is typically regulated by employment contracts and collective bargaining agreements. In case of direct remuneration, Kerr et al. (1987) identified two distinct reward systems: the hierarchy-based system and the performance-based system. Similarly, also Kanter (1987) noted that many organizations tend to reward on the basis of status rather than contribution – this means that pay rise is linked to promotion, which motivates people to look out for themselves rather than improve their overall contribution. In addition to this notion, some companies are found to use bureaucratic rules to allocate promotions and heavily weigh seniority over productivity in promotion decisions, which may lead to promoting the "wrong" employee. This situation can be described by the so called *tournament theory* which depicts that wage differences are rather based on relative differences between the agents instead of their absolute level of performance. (Prendergast, 1999)

In Finland, other statutory wage-related indirect benefits include social security benefits such as pension insurance and unemployment insurance. Voluntary benefits paid by the employer include various extra insurances and employee benefits that suit the particular organization and its personnel – some organizations provide traditional company cars, others electric bicycles to promote their sustainability principles. Sky is the limit when designing new voluntary fringe benefits but it is important to take into consideration the expectations and needs of the personnel, and the derived value for the organization. Involving personnel in the planning of these benefits could diminish the common problem of voluntary benefits, which is the imbalance between personnel's low appreciation towards

offered benefits and their cost to the employer. (Kauhanen, 2012, 114-120)

In popular compensation plans, rewards are most often determined by performance of either an individual (e.g. pay-for-performance), group (e.g. gainsharing), or organization (e.g. stocks and options) (Gagné and Forest, 2008). Lately, group- and organizational-based incentives have been gaining popularity because teams are increasingly becoming the primary work units of many organizations. Additionally, there is a growing interdependence between tasks due to more flat organizational structures which makes it difficult to separate contributions of individual workers. (Milne 2007) When dealing with group performance there is always a potential for an unwanted free-rider problem, but Kandel and Lazear (1992) have suggested that this could be solved by phenomena of peer pressure, whereby group members monitor one another and there is a desire to attain social approval.

In their study of wages and working conditions in the European Union, Antoni et al. (2005) found that the so called modern forms of variable pay, i.e. having income related to the performance of a group or company and/or income from shares, are established more often in high performance work organizations, which can be described by such characteristics as teamwork, job rotation, decentralized decision-making, flat hierarchy, horizontal communication and diversified tasks. It has also been found that highly innovative companies have the most decentralized administrative structures and group oriented reward systems (Miles et al., 1978), and since group incentives encourage inter-departmental cooperation they also enhance innovative activity (Harden et al., 2010). The traditional forms of variable pay, such as piece rate or productivity payments, are on the other hand found slightly more often at workplaces with repetitive and monotonous tasks (Antoni et al., 2005). Individual-based performance pay, which is designated by management, is also claimed to nourish short-termism, undermine teamwork, foster rivalry and

politics, and do harm to effectiveness as employees feel the loss of control, competence and self-determination. These concerns over the negative effects of traditional forms of variable pay have in fact stimulated the development of the high commitment management model. (Wood, 1996)

3.2 Incentive systems in Finland

From a cultural standpoint in relation to reward, it is important to include an observation of institutional factors, such as the structure of collective bargaining, which is especially significant in the case of Europe, where trade unions have a comparatively strong stance on pay determination and collective bargaining. Reward systems seem to be more sensitive to national culture than other HRM practices. In spite of the growth of more flexible pay schemes, including performance pay, collective bargaining systems remain strong in Nordic countries. (Easterby-Smith et al., 1995; Wright, 2010) Finland is an example of a corporatist political and economic system, which is based on a social concert between organized economic agents. Finnish labor market policy is a result of interplay between labor market parties and the government in such issues as wage bargaining. (Vartiainen, 1998) The amount of salaried employees belonging to trade unions[4] in Finland was 69 per cent in 2011 (OECD, 2014) signifying that unions have a lot of negotiating power concerning e.g. unemployment insurance, pension, and parental leave to mention few. Employees tend to join unions based on their profession or education. Finnish trade unions typically endorse the need to base pay increases and wage differentials on productivity. A typical collective agreement, that covers employees of a particular industry or sector, usually contains a set of minimum tariff wages at different job-complexity levels and educational ranks. In economies where strong trade unions rule, it is important to moderate rising wage

---

[4] There are three main employee trade union confederations: SAK - The Central Organisation of Finnish Trade Union, STTK - Finnish Confederation of Salaried Employees, and AKAVA - The Confederation of Unions for Academic Professionals in Finland.
On the employer side, the two main confederations are: EK - Confederation of Finnish Industries and KT - Local Authority Employers in Finland. (SAK, 2011)

claims in order to avoid increasing the unemployment rate. (Vartiainen, 1998)

The population structure of Finland is aging rapidly, and the supply of labor force is projected to diminish until the year 2030 as the baby boomers born after the World War II retire and are replaced by younger population, which is smaller in size (Statistics Finland, 2009). The industrial sector in particular is experiencing growth in recruitment-related problems due to the difficulties of acquiring sufficient workforce with requisite work experience, specific skills and occupational training. Conflicting views regarding wages have also become more common. (Secretariat of the Economic Council, 2007) Rynes (1987, 190) has suggested that compensation systems are capable of attracting or repelling the right kind of employees because they communicate so much about an organization's philosophy, values, and practices. Finnish organizations are indeed facing pressure to modify their incentive systems in order to entice their aging experts to work beyond the retirement age, and better attract and recruit new skilled job applicants. The latter is proving to be quite challenging as the recent studies indicate that younger generations are of the opinion that work is emphasized too much in today's society and that there should be more balance between work and leisure.

The Professionals study carried out by T-Media (2008) points out that when compared to older generations (over 50 years old) of highly educated working people, younger people (under 30) are less willing to consider what is best for the employer if it entails more effort for themselves. Ilmakunnas and Maliranta (2005) state that age has a clear positive impact on wage, most likely because of a strong seniority effects in wage settings as the wage profile is steep to keep work incentives high until the time of retirement. The researchers also suggest a strong insider influence in collective wage bargaining as another interpretation. According to the Employer Branding Today (2011) investigation of what

young Finnish students wish from their working life and what are their career goals, the majority of respondents placed a chance to handle a wide range of work tasks, and a good work-life balance as the most important features. Salary placed third in the order of importance.

The findings of Finnish Quality of Work Life Surveys dating from 1977 to 2008 (Lehto and Sutela, 2009) confirm the previous notions. The changing trend depicts that the content of work is becoming more significant while the importance of pay has been diminishing. The content of work is more important for women, while men value pay more. Additionally, being pay-oriented seems to be tied to the quality of work and the level of education, as people with a basic level of education working in e.g. manufacturing jobs consider pay to be definitely more important than content of work. Highly educated people working in well-paid positions seem to be reflecting attitudes where the work itself has turned into the main source of motivation instead of the pay. Self-development is clearly more important for Finnish workers than advancing in their career and moving up on the hierarchical ladder – personal development is especially vital among those who have a high educational level. The opportunity to influence the content of work has also been rising as the ability to influence working methods, division of tasks and choice of working partners has been increasing, though still being more closely linked to white-collar employees than blue-collar workers. Traditional Tayloristic patterns of work organizations are becoming a thing of the past, as the monotony of work has decreased especially in case of women's work. This is a huge step forward from the 1970's Finland, where women used to conduct extremely monotonous work tasks. Presented findings of The Finnish Quality of Work Life Surveys are displayed in graphs in Appendix 5.

As Finnish firms adapt more network-like transorganizational approaches and the variety of work tasks and projects increases, new types of management and reward practices are evolving to support these changes. The European Working Conditions Survey of 2000 (Paoli and Merllié,

2001) shows that a traditional base pay is the most dominant pay component in European countries. Noteworthy in this study is that the highest rates of so called modern forms of variable pay, such as team bonuses, profit sharing and share ownership schemes, were at the time found in Finland and Sweden. These modern schemes are more common in the private sector and bigger companies. In Lehto and Sutela's (2009) research, reward systems based on evaluation of skills requirement level of work were reported by 46 per cent of employees in 2008, though this occurred more in tasks requiring high level of education. Practices including appraisal of personal work performance have become considerably more common, and performance-based bonuses systems were reported to be applied in 38 per cent of the respondents' workplaces.

According to Kauhanen and Piekkola (2006), performance-related pay schemes, which are tied to meeting predetermined financial-, quality-, or productivity-related goals, have become more common in Finland since the beginning of 1990s. Their survey highlights that in 1990 only 10 per cent of employees in Finnish industry were a part of a performance-related pay scheme, whereas in 1998 the amount had risen to almost 50 per cent. The principal cause for the firms to adopt performance-related pay schemes is to motivate the personnel and in some cases increase wage flexibility. By studying a sample of trade union members belonging to The Confederation of Unions for Academic Professionals in Finland (AKAVA), Kauhanen and Piekkola (2006) found that performance-related pay has a better effect on employees' effort when performance is measured at the individual or team level, and the performance measures are such that the employees can control them. Interestingly, performance-related pay schemes are more motivating when employees and employer jointly participate in the design of the scheme – the importance of cooperation is most apparent in R&D work. An intriguing relationship between tangible and intangible incentives and motivation is more thoroughly examined in the following chapter.

3.3 Impact of incentives on motivation

It is important to keep in mind that employee benefits should not be considered as a substitute for intangible rewards, such as managerial support, encouragement and interaction (Huff, 2007). Employees tend to commit to an organization based on how they are treated there, instead of a specific pay system. While people may come to work for the pay, they stay at work for various other reasons like chances to learn new skills or to work in a flexible setting. (Lachance, 2000) Though there is an ongoing dispute whether tangible or intangible incentives have a positive impact on employee's work motivation and performance, the most important thing to keep in mind is how well these different incentive systems match with the organization. The optimal design of incentives is highly dependent on contextual factors, and the first step in designing an effective incentive plan is to determine which incentives are right for the specific company and its employees (Pouliakas and Theodossiou, 2012; Sammer, 2007). For instance, Kerr and Slocum (1987) suggest that a hierarchy-based reward system, where mentor-like superiors evaluate subordinates based on subjective criteria and give feedback on a frequent base, is related to clan culture, whereas performance-based pay system, which links rewards to quantitative performance measurement and low level of superior-subordinate interaction, is seen appropriate in market cultures. The impact of tangible versus intangible incentive systems also depends on the type of the task – intangible incentives and intrinsic motivation are particularly linked to effective performance in problem solving-related heuristic tasks, whereas tangible incentives and extrinsic motivation may be fully sufficient in algorithmic tasks, which are more automated and repetitious. Heuristic tasks involve experimenting with various possibilities and devising a novel solution, while in algorithmic tasks one follows a set of clearly established instructions which lead to one conclusion. (Gagné and Deci, 2005)

Traditional economic research often emphasizes the (positive) effects of extrinsic, monetary incentives on human behavior, and bases its analysis

on agency theory. One of the major drawbacks of agency theory is that it relies solely on extrinsic motivation and expects that increases in payment will lead to increases in employees' effort (Frey and Osterloh, 2005; Gagné and Forest, 2008). However, studies originating from the scientific field of psychology have, for many decades now, questioned the use of contingent incentives and highlighted the potential "crowding-out" effect that external rewards may have on intrinsic motivation (Deci, 1971; Gagné and Forest, 2008). In fact, Deci (1971) was one of the first ones to argue that some activities provide an inherent reward to a person, and introduction of external incentives, such as pay-for-performance, can suppress this enjoyable, intrinsically-motivated behavior and result in reduced effort.

In a broad meta-analysis examining the effects of extrinsic rewards on intrinsic motivation, Deci and his research group (Deci et al., 1999a) conclude that all expected rewards – including engagement-contingent, completion-contingent and performance-contingent rewards – significantly weaken intrinsic motivation. Additionally, all of these rewards also considerably diminish self-reported interest in task. On the contrary, unexpected rewards do not affect intrinsic motivation, and intangible verbal rewards in the form of positive feedback enhance both free-choice intrinsic motivation and self-reported interest. Unexpected and non-contingent rewards seem not affect motivation because they are not directly tied to performance and thus people are less likely to perceive them as the extrinsic reason for their actions. While positive feedback is good for intrinsic motivation, negative feedback is likely to cause a decrease in this inherent enjoyment, because it induces anxiety, weakens feelings of competence and self-actualization, and is often interpreted to covey external control. All in all, when giving feedback to employees it is important to use it as a medium for sharing information with the employee rather that an attempt to control their behavior through continuous praises, which can also lead to a loss of intrinsic motivation. (Deci, 1976) When considering the nature of a task, the effects of tangible rewards are

different when the tasks are interesting versus boring: while tangible rewards clearly diminish intrinsic motivation in tasks that are perceived interesting, they do not have any significant effect in case of boring tasks (Deci et al., 1999a). A short-term idea to reward a person for completion of a task which is interesting in itself has also more far-reaching impacts as the enduring attitude towards re-engaging in similar tasks and activities may be spoiled (Suvorov, 2003). These findings raise questions about current compensation practices in organizations and their potential effects on employee motivation. For instance Claman (1998, 3) has criticized that incentive systems often lag behind the progress that is happening in content of the work: *"The current compensation systems do not reward the core competencies of the intelligent career [including research skills, strategic thinking skills and skills of personal leadership] -- but are still based on the industrial economy from which they evolved"*.

In organizational environments where extrinsic rewards are prominent, people often work only to the point that triggers the reward and no further. Offering contingent incentives can also reinforce the so called *dysfunctional behavioral responses*, where employees emphasize only those aspects of their performance that are awarded (Prendergast, 1999). An old urban legend about the fireman who turned into arson after the fire department started paying bonuses for emergency call-outs (Sammer, 2007) may be an exaggeration, but it does make a good point on a matter that some bonuses may in fact lead to inappropriate behavior rather than improved work performance. Another cautionary example is a company that pays its service technicians a flat rate per completed job; in this case some technicians may become motivated by the money and rush through their work in order to complete the largest amount of repairs in the least amount of time leaving behind a sloppy execution and inferior quality (Anon., 2008). Werbel and Belkin (2010) propose that the greater the proportion of performance contingent individual reward in relation to base pay, the greater the likelihood of employee's misconduct. In fact, a bonus ranging between 10 to 15 per cent of annual base pay is suggested to be

large enough to provide a motive for employee misconduct (Werbel and Belkin, 2010).

Performance-dependent rewards, such as the piece rate payment, can also lead to employees overworking themselves which endangers their health and long-term function as a part of an organization (Suvorov, 2003). Creative thinking and innovating can also be damaged by inappropriate contingent rewards, as taking time to envision and think over different possibilities does not show immediate quantifiable results. Tangible incentives may impede multi-tasking as employees are drawn toward those activities that are directly compensated and away from the uncompensated tasks. Due to these concerns, complex jobs are not typically evaluated through explicit pay-for-performance contracts, instead some of the incentives are provided in a form of subjective performance evaluation. (Holmström and Milgrom, 1990; Prendergast, 1999)

Various studies suggest recognition (Milne, 2007; Lachance, 2000), employee participation (Crush, 2007; Pouliakas and Theodossiou, 2012), and perceived fairness and transparency of incentive system (Gagné and Forest, 2008; Wood, 1996; Wright, 2010) as drivers of good remuneration practices. Recognition is most typically an intangible reward given to employees selectively in appreciation of positive behavior or high level of accomplishment that is not dependent on comparing performance to a given target. Recognition, which can be as simple and informal as saying "thank you", motivates the employee because it shows that the employer or superior is paying attention and acknowledging effort, commitment and learning. Recognizing accomplishments and celebrating successful milestones keeps enthusiasm going and encourages maintaining a good performance even in lengthy projects where the ultimate goal is further in distance. The key to keeping recognition programs fresh and effective, so that the employees do not get indifferent to e.g. praises, is to stay flexible in the range of recognition items and actions that programs can use. (Milne, 2007; Lachance, 2000).

In their study of workers in lower- and middle-skilled occupations in seven different European countries[5], Pouliakas and Theodossiou (2012) highlight that employees have a significant preference for flatter organizational structure and worker participation in decision making. These findings support the adoption of participative management techniques that include increasing communication in all directions, pushing decision making down to the level where appropriate practical information is available, and encouraging employees to take initiatives to improve operations and practices. According to Crush (2007), listening to employees and directly asking them what they want could be much more effective, and probably cheaper, than introducing profit-related pay. Giving an opportunity for employees to work from home, i.e. telecommute, seems to be the perk that has the strongest link to engagement with the employer. Employees who feel that they are being trusted, and given control over their own time and workload are more engaged, efficient and motivated. (Crush, 2007)

Regarding fairness and transparency of incentive systems, Hennessey et al. (1992) state that employee satisfaction with their benefits is linked with their level of knowledge and awareness of what is provided by the employer. For instance, individual performance-related pay is often perceived to operate unfairly and thus demotivate some of the employees (Kessler and Purcell, 1991; Marsden and Richardson, 1994). Gagné and Forest (2008) underline the importance of perceived fairness as a predictor of intrinsic work motivation. They elaborate that both *distributive justice* and *procedural justice* perceptions are positively related to intrinsic work motivation – the first referring to the perceived fairness of decision outcomes relative to contributions, and the latter to the perceived fairness of processes used to arrive at outcome decisions. Larkin et al. (2012) also suggest that *social comparison theory* (Festinger, 1954), which argues that individuals tend to evaluate their own abilities in comparison to referent others, can explain why individual performance-related pay can

---

[5] These countries were Finland, Denmark, France, Greece, the Netherlands, Spain and the UK.

often be perceived as unjust. In individual performance-related pay systems, compensation varies across employees, generating frequent pay comparisons between colleagues. This can lead to perceptions of inequity and distress in situations where an employee believes that he is working harder and longer hours than referent peers but is nonetheless getting paid less than others. These feelings of unfairness arising from social comparison can lead to increased employee turnover, reduced commitment and effort, unethical behavior based on envy, and the tendency to sabotage other workers within the organization. (Larkin, 2012)

As a solution to problems brought by individual pay-for-performance systems, Larkin et al. (2012) suggest that a homogenous team-based compensation can reduce social comparison between coworkers. However it must be pointed out that this solution does not address wage comparisons across teams. Also Barnard (1998) suggests that a successful reward system among other things should take into consideration the dynamics of team-based organizations and reward the desired team performance. Many researchers underline that group incentives have the potential to motivate employees and improve organizational commitment especially in case of innovative, high-technology companies (Diaz and Gomez-Mejia, 1997; Park and Kruse, 2014; Tremblay and Chenevert, 2008). Group incentives are indeed found to be more prevalent in innovative companies with advanced technology than in low-technology companies.

Group level rewards have been shown to influence the collective motivation of team members (Shameer, 1990), but on the other hand, it has also been argued that group incentives can lead to monitoring between employees in order to avoid free riding problems and this type of peer pressure can decrease the feeling of autonomy, which is a vital part of intrinsic motivation (Han and Shen, 2007). There are also other potential downsides to team-based performance-related pay as reported in Beer and Cannon's (2004) study of Hewlett-Packard's experiments in the

US, where team pay-for-performance was established to motivate achievement of team goals, including team-process improvement, production and quality goals. A team-based pay that was added incrementally to base pay resulted in managers' conclusion that worker's attention was focused more on their pay instead of their work. Team members also felt that they had little control over their performance because they often encountered factors outside their regulation, including delays in shipment, or breakdown of work equipment. Most importantly, high-performing teams often refused to include anyone to their team who they thought might be below their level of competence. This hindered employee mobility between teams and reduced the capacity of the organization to transfer learning from one team to another. (Beer and Cannon, 2004)

After examining the effects of tangible and intangible incentives on work motivation, it has become clear that both of them have their downfalls as well as advantages. Therefore, the preferred approach to designing an effective incentive system could be combining the best aspects of both systems. It is important to highlight that an intrinsic approach to management does not ignore extrinsic rewards – on the contrary, it strives towards a system that balances between these approaches. Reasonable amount of direct pay and various fringe benefits are, without a doubt, necessary to attract and keep high-quality employees, but managers should avoid controlling their subordinates with these tangible rewards by binding performance appraisal solely to these rewards. Jobs should be structured to give employees considerable participation in decision making on important issues related to them, and work tasks should be interesting and challenging – this would make them intrinsically motivating for workers. An incentive system that includes inspiring and encouraging workforce often leads to self-motivated employees who do not need a constant presence of their boss to urge them forward. Designing intrinsically motivating work tasks takes careful planning, but seems to be worth the effort. (Deci, 1976)

4 WORK MOTIVATION

Motivation is associated with person's attitudes and values, and is manifested by attention, effort, and persistence. Work motivation can be described as a set of energetic mental processes that initiate work-related behavior and determine its form, direction, intensity and duration. It is important to understand what kind of factors energize, channel and sustain work behavior in order to know how to design effective company practices that enhance work motivation, as well as job satisfaction and performance. (Tremblay et al., 2009) The psychological contract between an employee and the components of an organization, such as pay, opportunities, and dignity, is an important factor in determining individual's work motivation (Liu et al., 2007).

When studying work motivation, the majority of theorists concentrate on motivational orientation as the product of situational factors, including e.g. the nature of rewards, or the design of the work task. Motivation is seen as a state of mind influenced in large part by the immediate social environment. However, there is also evidence that motivation can operate like a stable, relatively enduring trait, and that there can be individual differences in basic motivational orientations. This enduring motivation that is embedded in personality may also have a considerable influence on situational experience and behavior. (Abuhamdeh and Csikszentmihalyi, 2009; Amabile, 1993) For instance, Deci and Ryan (1985) suggest that some people are inherently more oriented toward work that supports their need for autonomy, while others are more oriented toward controlling aspects of their work. The latter are less likely to experience intrinsic motivation. This study concentrates on examining situational motivation that can be influenced by different incentive systems and organizational cultures, instead of a general motivation which is mostly dependent of individual's personality traits.

Motivation can vary in its form and amount depending on individual's personal inclinations, the type of a task and surrounding environment. In this study, the self-determination theory (SDT) presented by Deci and Ryan (1985) is applied and examination of distinctive types of motivation is focused on intrinsic and extrinsic motivation. Amabile (1993, 186) elaborates that a person is intrinsically motivated when he/she seeks enjoyment, interest, satisfaction of curiosity, self-expression, or personal challenge in the work. On the contrary, a person is extrinsically motivated when he/she engages in the work in order to obtain some goal that is apart from the task itself. Extrinsic, reward-contingent motivation may work well in simple and quite repetitious work tasks, but in knowledge intensive organizations, where creative thinking and problem solving are essential, intrinsically motivated workforce that enjoys new challenges and continuous learning is a must (Gagné and Deci, 2005). Innovative companies in particular need a highly skilled and motivated workforce because employees are expected to continuously acquire new knowledge and skills related to novel products and services (Neal et al., 2005; Richard et al., 2003). A higher level of personnel motivation has been found to increase the overall organizational efficiency. Motivated employees are also less prone to look for other jobs and leave the organization. (Sokro, 2012)

The next chapters examine motivation in more detail by describing some of the most prominent work motivation theories. The SDT taxonomy of different motivation types is presented, and intrinsic and extrinsic motivations are thoroughly reviewed.

4.1 Work motivation theories

This study applies the self-determination theory (SDT) and focuses on two distinctive types of motivation, namely intrinsic motivation and extrinsic motivation. Though the focus is definite, it is worth introducing some of the other motivation theories, including the classical needs and motives -

related theories of Maslow (1954), Alderfer (1972), and Herzberg (1966), as well as Vroom's expectancy theory (1964), and Locke and Latham's goal-setting theory (1990). These theories are briefly examined in order to bring forward the differences of them in comparison to SDT.

4.1.1 Self-determination theory

The SDT theory of Deci and Ryan (1985) was created to replace the shortcomings of the cognitive evaluation theory (CET; Deci, 1975). CET concentrates on person's perception of why he is doing the activity, and whether the locus of causality of behavior is within himself or is activity rather performed for external reinforcements (Deci, 1972, 223). SDT incorporates CET within itself but is much broader in scope. SDT analyses how three main innate psychological needs; competence, autonomy and relatedness can be supported or disrupted by the social and environmental conditions. (Gagné and Deci, 2005) The underlying assumption of SDT is that "*human beings are active, growth-oriented organisms who are naturally inclined toward integration of their psychic elements into a unified sense of self and integration of themselves into larger social structures*" (Deci and Ryan, 2000, 229).

SDT explains how extrinsically motivated behavior can be internalized so that it becomes intrinsically motivated, or in other words autonomous. It also aims to clarify what kind of individual differences can occur in the perceived locus of causality. Locus of causality refers to the perceived self-determination and concerns the degree to which people experience their behavior to be volitional and freely chosen rather than stimulated by desired outcomes and external pressure. SDT considers motivation as a continuum between amotivation, which is a complete lack of motivation, extrinsic motivation and intrinsic motivation. There are in fact also different types of extrinsic motivation that vary from externally controlled to relatively autonomous. Intrinsic and extrinsic motivation types are

reviewed in more detail in chapter 4.2. (Deci et al. 1999b; Festré and Garrouste, 2008; Gagné and Deci, 2005)

The fundamental difference between SDT and most other work motivation theories is that the focus of SDT is on the relative strength of intrinsic (autonomous) versus extrinsic (controlled) motivation, rather than on the total amount of motivation (Gagné and Deci, 2005). Other theories tend to consider motivation as a unitary concept that varies in amount rather than type and concentrate only on the amount of total motivation a person has for a task when making predictions. Gagné and Deci (2005) highlight that it is important for a motivational theory to differentiate types of motivation when making predictions because there is a clear empiric evidence showing that, whereas intrinsic motivation facilitates effective performance and well-being, extrinsic motivation can detract from those outcomes, particularly in tasks requiring cognitive flexibility and creativity.

4.1.2 Needs and motives theories

The theories of Maslow (1954), Alderfer (1972), and Herzberg (1966) are considered classics in organizational behavior (Gagné and Deci, 2005). Maslow's hierarchy of needs categorizes human needs to five different classes: physiological needs, safety needs, belongingness and love needs, esteem needs, and the need for self-actualization. These needs are organized in a hierarchy, and basic physiological needs must be satisfied in order to move up the hierarchy towards the needs of actualization. For example, if a person is extremely hungry, other objects of interest, except finding food, are forgotten or become of secondary importance. According to this theory, needs that are satisfied no longer motivate the person. (Maslow, 1970, 35-46) Alderfer further developed Maslow's theory by summarizing the needs to three main categories: existence needs (e.g. pay security), relatedness needs (e.g. esteem), and growth needs (e.g. personal development). Alderfer's need theory does not support the hierarchical structure of its predecessor and rather

promotes the view that the importance of needs may vary for each individual. (Elizur et al., 1991; Gagné and Deci, 2005) Herzberg, defined a total of 16 motives which he categorized in two groups based on how they effected job satisfaction. Herzberg's two-factor theory[6] states that there are intrinsic motivators and so called hygiene factors. Intrinsic motivators, such as recognition and responsibility, are directly work-related and enhance job satisfaction, while hygiene factors, such as status and salary, are extrinsic to the work itself and do not lead to positive satisfaction. (Herzberg, 1987)

SDT shares similarities with the above presented theories because it also uses a concept of psychological needs and assumes that satisfaction of these needs is associated with better performance and well-being. SDT also highlights the importance of participative approaches that allow people to experience satisfaction of their higher psychological needs. The fundamental difference between SDT and the needs and motives theories of Maslow, Alderfer, and Herzberg, is that latter ones focus primarily on the stimulants of motivated action, while SDT addresses both how behavior is energized and how it is directed. In addition, most of the humanistic theories, such as the three presented ones, often lack empirical support, but SDT, while also being categorized as humanistic theory, has received a significant amount of empirical validation. (Gagné and Deci, 2005)

4.1.3 Expectancy theory

Vroom's (1964) expectancy theory of motivation highlights the importance of the connection between effort, performance and outcome. It places a strong emphasis on the motivational effects of incentives, and predicts that a person's actions are primarily targeted to maximize his/her benefits and minimize the potential harm. The theory proposes that motivation towards action depends, firstly, on the desirability of the rewards (in other words

---

[6] This theory is also known as Motivation-hygiene theory and Dual-factor theory

valence) associated with a given level of effort, secondly, on the belief that a given performance will produce the rewards (instrumentality), and thirdly, on the belief that a given level of effort will actually lead to a desired level of performance (expectancy). In line with the SDT, expectancy theory suggests that a person's motivation is at the highest level when the work task is optimally challenging – a work that is too difficult or too easy leads to decrease in motivation. The perceived attractiveness of the incentive is also dependent on the individual and his/her personal needs. (Kauhanen and Piekkola, 2006; Marsden, 2004)

4.1.4 Goal-setting theory

The goal-setting theory of Locke and Latham (1990) stresses the motivating power of defining appropriate work goals and engaging employee commitment to them rather than emphasizing extrinsic rewards. The theory suggests that personnel's performance will be maximized when they establish explicit, challenging goals that have high valence and understand what kind of activities, in which they are competent, will lead to these goals. In other words, characteristics of goals are used to predict work outcomes. When studying motivation through the goal-setting theory, it has been found that individuals who strive towards more challenging goals generally succeed better in their work tasks than the ones aiming towards an easy way out. Unlike SDT, the goal-setting theory does not differentiate between types of motivation, and observes motivation as a unitary concept. This theory does not give any attention to the fact that there could be different goal contents leading to different qualities of performance. The type of performance – in other words whether the task is centered on creative problem solving or repetitious and automated tasks – and its effect on goal setting is also not examined. (Gagné and Deci, 2005; Marsden, 2004; Sheldon et al. 2004)

4.2 Intrinsic motivation and extrinsic motivation

SDT distinguishes between two types of motivation: intrinsic motivation and extrinsic motivation. It also mentions a state of amotivation, which is wholly lacking in motivation and self-determination. Intrinsic motivation refers to doing an activity for its own sake because one finds it inherently interesting and satisfying. On the contrary, extrinsic motivation refers to doing something for an instrumental reason, such as the anticipated reward. A subtheory of SDT, called organismic integration theory (OIT), details the different forms of extrinsic motivation, that can be relatively controlled by external factors, or that can be relatively autonomous. The overall taxonomy of motivational types is presented in Figure 11. It visualizes how different types of motivation can be aligned along a self-determination continuum representing the degree to which these motivations emanate from the self. (Gagné and Deci, 2005; Gagné and Forest, 2008; Ryan and Deci, 2000b)
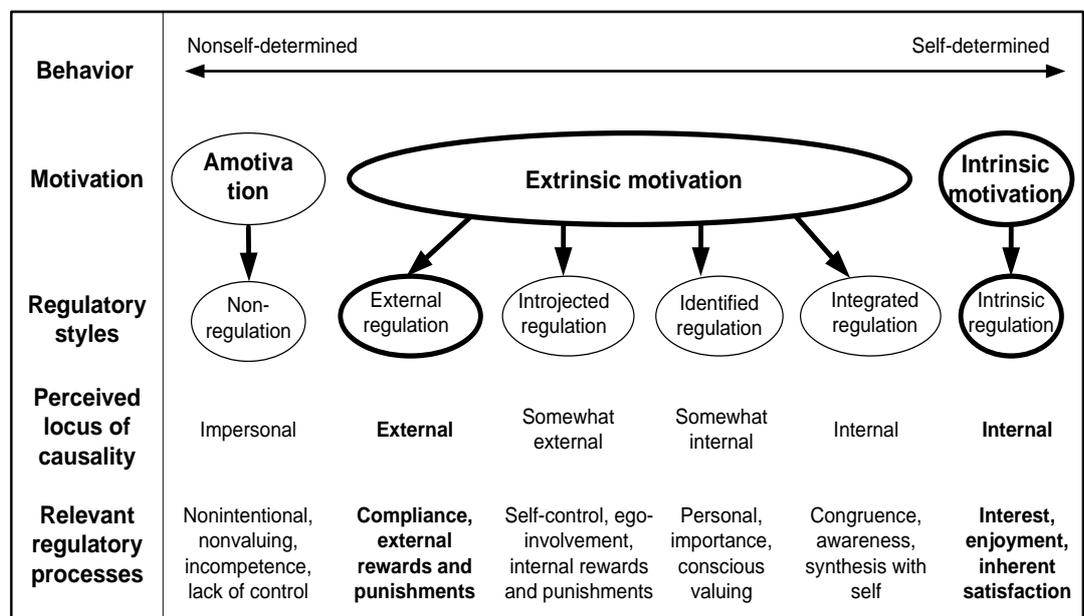
Figure 11. The self-determination continuum (Ryan and Deci, 2000b, 72)

A more in-depth examination of motivation types begins from the most self-determined and intrinsically regulated end of the continuum. Intrinsic

motivation reflects the positive potential of human nature, which has an inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn. It nurtures cognitive and social development through spontaneous curiosity, exploration and inclination toward mastery. Experiences of self-development and self-actualization act as sources of enjoyment, vitality and well-being. Ryan and Deci (2000) view intrinsic motivation as an evolved propensity, similar to the developmentalists who acknowledge that from the time of birth, children are active, curious and playful even in the absence of specific rewards. Multiple empiric studies highlight that intrinsic motivation requires supportive conditions to thrive, as it is quite easily disrupted by various unsupportive conditions. Thus, the focus of examination is not on what causes intrinsic motivation, but rather on the conditions that facilitate versus undermine this inherent motivational tendency. For instance social-contextual events – such as feedback and communication – that lead toward feelings of competence during action can enhance intrinsic motivation for that action. The degree to which one's attention is devoted to the activity at hand (attentional involvement) is suggested as a key component of the process related to intrinsically motivated behavior. Optimal challenges and absence of negative and demeaning evaluations are also found to facilitate intrinsic motivation. For instance, the mental state of heightened attentional involvement called "flow" comes into being when challenges are balanced by skills and the person enjoys the experience of being fully engaged in the activity. The feeling of competence alone does not enhance intrinsic motivation – it must be accompanied by a sense of autonomy (self-determinacy). In other words, the perceived locus of causality should be experienced as internal. Tangible rewards, pressured evaluations, deadlines, directives and threats among others result in external perceived locus of causality, which endorses extrinsic motivation. (Abuhamdeh and Csikszentmihalyi, 2012; Deci et al., 1999a; Ryan and Deci, 2000b)

Extrinsic motivation can be divided into four different forms which are aligned along a continuum representing the degree to which they have been internalized. Ryan (1995, 405) defines internalization as *"the active assimilation of behavioral regulations that are originally alien or external to the self"*. At the high end (closest to the intrinsic motivation) lies integrated regulation that occurs when identified regulations become habitual and part of the person's sense of self. This is the form of extrinsic motivation that is most fully internalized and autonomous, yet the activity is still considered extrinsic because it is done to attain separable outcomes rather than for the inherent satisfaction and enjoyment. The next form of extrinsic motivation is identified regulation, which means that the action is accepted or owned as personally important because the person can identify with its value or meaning. Moving towards left on the continuum, the next form of extrinsic motivation is introjected regulation. Introjection means taking in a regulation but not fully accepting it as one's own. The perceived locus of causality is relatively external and behaviors are performed either to avoid guilt and anxiety or to attain self-esteem and pride. A classic form of introjection is ego involvement, in which person is motivated to demonstrate ability in order to maintain feelings of worth. The least autonomous, extrinsically motivated behaviors are referred to as externally regulated. These behaviors have an external perceived locus of causality and are performed to satisfy an external demand or reward contingency. (Festré and Garrouste, 2008; Gagné and Deci, 2005; Gagné and Forest, 2008; Ryan and Deci, 2000b)

From the above mentioned forms of extrinsic motivation, the empirical research of this study concentrates on measuring externally regulated behavior because it is the most obvious form to observe and report by the respondents. External regulation and introjection represent controlled motivation, while intrinsic motivation, integration and identification are often categorized as autonomous motivation. Autonomous motivation is associated with active information seeking, goal attainment, better performance, and increased well-being. It can be fostered by satisfying the

three basic psychological needs of competence, autonomy and relatedness. This means that the path towards performance improvements and increased well-being of personnel is based on considering and satisfying these higher psychological needs. (Deci and Ryan, 2000; Gagné and Foster, 2008)

5   ORGANIZATIONAL INNOVATIVENESS

An overview of literature focusing on innovation shows that only few topics have had a greater agreement among scholars than the current status of significance given to innovation (Llorens-Montes et al., 2005). Innovation is the name of the game in the twenty-first century (Keskin, 2006). Embracing innovation is a vital part of corporate strategy in an environment where nothing endures but change. Intense global competition, turbulence, and uncertainty have forced companies to continually renew themselves. Innovation is central to economic growth and can be seen as a source of sustained competitive advantage to companies (Damanpour and Wischnevsky, 2006). Innovation is seen as the key element of competition especially in the context of high-tech industries where firms are forced to constantly introduce new products to stay in the game and meet rapidly changing needs of tech-savvy consumers. In case of the high-tech companies, innovativeness has been found to have a direct positive effect on firm's market position, financial position and firm value. (Rubera and Kirca, 2012)

Ahmed (1998) points out that all companies seem to talk about the importance of innovating, many try to do it, but only few actually succeed in it. Talking about the need for innovation and its benefits is insufficient. In order to actually be innovative, the organization needs to realize continuous aggressive investment and commitment that innovation demands. It is not enough to preach about innovation or throw occasional resources and R&D funds at it – innovation requires an organizational culture that is favorable to creativity and constantly guides its members to strive for innovation. (Ahmed, 1998) Buckler (1997, 43) provides a holistic viewpoint to innovation by stating that innovation "*is an environment, a culture – almost spiritual force – that exists in a company*" and drives value creation.

Innovation is a people-intensive effort stemming from organization's learning initiatives, capabilities and accomplishments (Wang et al., 2010). Innovative behaviors and idea generation related to them are often difficult to observe and measure (Poskela and Martinsuo, 2009). The process of innovation often begins with the activation of some person(s) to seize a new opportunity that may originate from the feelings related to uncertainty, change and chaos in the surrounding environment. These individuals who are able to recognize new opportunity and initiate a process departing from the organization's established routines are referred to as corporate entrepreneurs, idea generators or idea champions. (Kanter, 1988) From the managers' perspective, the primary purpose of innovation is to introduce change in the organization to create new opportunities or exploit the existing ones (Damanpour and Wischnevsky, 2006). A concept of corporate entrepreneurship is used to signify a proactive process in firm through which individuals pursue entrepreneurial opportunities to innovate (Ireland et al., 2006, 10; Wang et al., 2010).

5.1 Definition of innovation

The definitions and conceptualizations of innovation tend to vary depending on the researcher, discipline and perspective. For instance, innovation can be described as "*a cycle that goes through stages and requires drivers to conceive and carry ideas from the mind to the market place*" (Verhaeghe and Kfir, 2002, 410). Innovation can also be conceptualized as a process that starts from emergence of a novel idea and concludes with market introduction (Freeman and Engel, 2007, 94). Innovation may exist in many different forms (e.g. product, service, process, market, technical, organizational, and social innovation) and in different types, such as radical or incremental innovation. Radical innovations provide a bigger boost to the firm's competitive edge than incremental innovations. Radical innovations are also harder to come by and they have potentially a much larger effect on individual firm's competitive edge, their customers, and whole industries (Sainio et al.,

2012). This study focuses on innovation in the context of organizations, which leads to defining innovation as the development, introduction and use of new ideas and behaviors in organizations. More precisely, Büschgens et al. (2013, 766) refer to innovation as "*as a process that involves the generation, adoption, implementation and incorporation of new ideas, practices and artifacts within organizations*". This study does not separate between the radical and incremental types of innovation.

Following the dual-core model of innovation by Daft (1978), organizational innovation, or innovativeness, in the context of this study is divided to technical innovation and administrative innovation. Technical innovations, which are linked to basic work activities of an organization, include products, services and production process technologies that are new to the firm. Administrative innovations encompass new procedures, policies and organizational forms, and are more directly related to the management activities and the social structure of an organization. One of the major predictors of business success is organization's ability to react quickly to environmental pressures. According to Ogbonna and Harris (2003, 514), the timeliness of this reaction is enabled by organization's ability to harness its human resources by adopting a range of innovative human resource practices (process innovations). Organizational innovativeness is typically measured by the rate of the adoption of innovations. (Daft, 1978; Damanpour, 1991; Damanpour and Wischnevsky, 2006; Park and Kruse, 2014; Van de Ven, 1986) Organizational innovativeness is viewed as an outcome of various antecedent organizational determinants, including organizational culture, incentives and creativity of employees (Sarros et al., 2008). Organizational structures and creativity of employees as antecedents of innovation are examined more comprehensively in the next chapter.

5.2 Organizational structure and creativity of employees as antecedents of innovativeness

There is no innovation in organizations without creative ideas from individual employees. In order to be innovative, organizations must stimulate creativity. The important role that managers have in influencing individuals' creativity is accentuated in this setting. (Amabile, 1998) Creative thinking is encouraged in surroundings where creative people are given the needed resources, support and stimulus from the management to pursue the process of generating novel ideas. Instead of hierarchical structures and emphasis on authority levels, everyone should be given an opportunity to share their thoughts and ideas regardless of their position and departmental placement. Simply stated, the quality of idea should matter over the organizational position of the person who proposed it. (Claver et al., 1998)

Innovation prospers when individual ideas and hunches can serendipitously connect and recombine with other ideas and hunches that complete them. Thus, the work environment should also encourage the free flow of ideas. There is a growing number of innovative organizational structures where traditional, relatively closed R&D departments are redesigned to be more transparent by embracing open innovation platforms and sharing their research with universities, partners, suppliers and customers. Another way to facilitate serendipitous connections required by innovation is to build information networks that allow ideas and hunches to persevere, scatter and recombine. An environment where brainstorming is constantly running in the background of daily operations is one way to spread the ideas inside an organization and prevent them from being undetected by the masses. Johnson (2010) suggests that one way of creating this type of environment would be to develop an open database of hunches, which would act as a web-based version of traditional suggestion box. A public database of ideas would make notions visible to everyone in the organization, and other employees could expand

on these ideas. These type of information networks allow making use of both individual and collective intelligence. (Johnson, 2010, 123-128)

Ahmed (1998, 31) claims that innovation is the engine of change and culture is a primary determinant of innovation. Flexible organizational structures and related transformational leadership facilitate the development and implementation of new ideas. Firms with the advantage of flexibility tend to perform better at innovating than rigidly structured and controlled firms. Innovativeness empowers individuals in the role of idea generators and encourages collective idea sharing and brainstorming. (Saros et al. 2008; Özsomer et al, 1997) The degree of support and encouragement an organization provides to its employees to take initiative and explore innovative ideas and approaches is predicted to influence the degree of actual innovation in the organization (Martins and Terblanche, 2003).

Creativity and innovation are closely linked. In fact, Amabile (1998) underlines that innovation is the successful implementation of creative ideas by an organization. A model presented in Figure 12 describes the influence of organizational work environment on the creativity of individuals and teams, as well as the influence of individual and team creativity on overall organizational innovation. The three upper circles represent organizational components that are considered necessary for overall innovation. Management practices that are proved to foster creativity and innovation include providing autonomy in work tasks, matching the requirements of assignments with employee's skills and interests, giving constructive feedback and encouragement, and assembling work teams that represent complimentary fields of expertise. Organizational motivation to innovate depicts firm's basic orientation toward innovation, which is communicated by the management. Resources include everything (e.g. skillful people, relevant information, and training) that the organization has access to and may use to support the work progress in the domain targeted for innovation. As seen from the

lower circles, creativity is comprised from three elements, which are creative-thinking skills that determine how flexibly and imaginatively people approach problems, expertise, including technical, procedural and intellectual knowledge, and lastly motivation, in which inner passion (intrinsic motivation) to solve problems leads to more creative solutions than external rewards. Amabile (1998) accentuates that though managers can impact all three components of creativity (expertise, creative-thinking skills and motivation), the first two are more difficult and time consuming to influence than motivation. According to the research results, intrinsic motivation can be increased considerably by subtle changes in organization's environment – including the previously mentioned management practices. (Amabile, 1996; 1998)
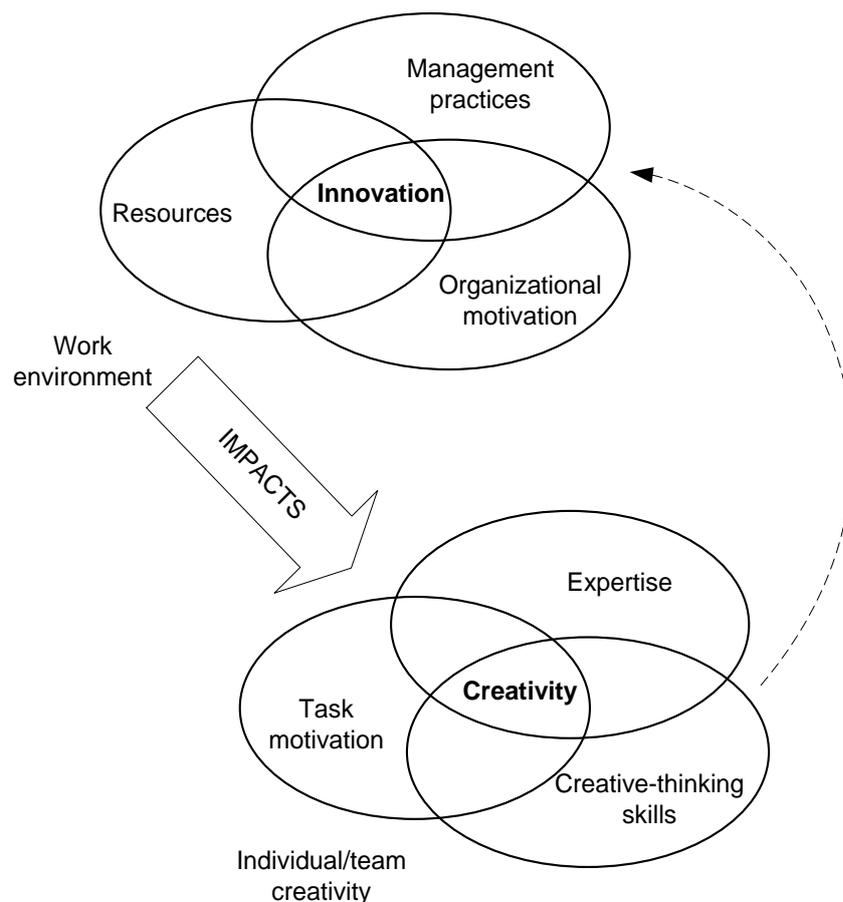
Figure 12. Interrelation between organizational environment, creativity and innovation (adapted from Amabile, 1996, 9)

6 RESEARCH METHODS

This chapter explicates the research methods applied in the study. The empirical part of the study was carried out with companies operating in Finnish industry groups of metal industry, electrical and electronics industry, ICT industry, and architectural and engineering activities (including technical consultancy, testing and analysis). More detailed industry classifications and descriptions are presented in Appendix 1. The following chapters present the measurement model of the study, the process of collecting the data and pre-testing the questionnaire, and describe the main analysis methods applied in the IBM SPSS statistics software (version 22.0.0.0).

6.1 Measures of the study

A quantitative research in the form of deductive study is carried out in attempt to answer research questions and achieve support for the hypotheses developed based on the conducted review of existing literature and theories. From the quantitative research designs, a correlational research type is chosen because it enables examination of the nature of relationships among variables measured in different units (Locke et al., 2010, 97). The primary data is collected using a standardized survey, which is in the form of structured online questionnaire. A quantitative survey enables collecting large amount of data relatively easily.

The development of the measurement or exploitation of an existing measurement is extremely important for success of the study. The measurement acts as a tool for gathering data and should thus be valid in order to produce statistically good results. It is advised to use primarily measures whose reliability and validity are already examined. (Metsämuuronen, 2003) The questionnaire, presented in Appendix 6, is structured of six compact parts investigating company's background

information, work motivation of employees, reward policies, innovativeness of the firm, organizational culture, and lastly respondent's background. The parts are distributed inside the questionnaire in a way that questions requiring a longer time to answer are placed at the end of the questionnaire in order to give a better first impression and not to scare the respondent to leave the questionnaire unanswered by presenting long question listings in the beginning. The questionnaire mostly consists of closed-ended questions. This is because the perceptions regarding motivation of employees, the extent of use of various incentives, and adoption of innovations are hard to measure with absolute values. Additionally, a ranking procedure of four different descriptions of organizational culture types derived from the OCAI tool of Cameron and Quinn (2006) is used as an ordinal measurement method. Open-ended questions are stated in the parts concerning company's background (Part 1) and respondent information (Part 6). The following Figure 13 summarizes the scale development and the measurement model of the study. Measures of each part of the questionnaire are introduced in the following chapters.

Theoretical Background	Measures	Survey item	Dimensions	Concept
Competing Values Framework (Quinn and Rohrbaugh, 1983)	Adapted Organizational Culture Assessment Instrument (Cameron and Quinn, 2006)	Part 5; item A → Clan culture Part 5; item B → Adhocracy culture Part 5; item C → Market culture Part 5; item D → Hierarchy culture	Organizational culture
	Developed for the purpose of this study using the Total reward framework (Kauhanen, 2012) and a group-based incentives study of Wood (1996)	Part 3; items 1-7 → Tangible incentives Part 3; items 8-13 → Intangible incentives	Incentive systems
Self-Determination Theory (Deci and Ryan, 1985)	Adapted Work Extrinsic and Intrinsic Motivation Scale (Tremblay et al., 2009) and the Situational Motivation Scale (Guay et al., 2000)	Part 2; items 1-4 → Extrinsic motivation Part 2; items 5-9 → Intrinsic motivation	Motivation
A dual-core model of organizational innovation by Daft (1978)	Adapted from Park and Kruse (2014), Damanpour (1991)	Part 4; items 1-3 → Technical innovations Part 4; items 4-5 → Administrative innov.	Organizational innovativeness
	Developed for this study Derived from Amabile et al. (1996)	Part 4; item 6 → Cooperative innovation Part 4; item 7 → Creativity	

Figure 13. Measurement model of the study

6.1.1 Background questions

The first part of the questionnaire consists of questions identifying the background information of the company that is represented by the respondent. These questions are open-ended, with an exception of drop-down selection menu for the primary industry groups according to the NACE Rev.2 classification. These organizational control variables include year of establishment, the primary industry group, revenue, R&D expenditure, number of full-time personnel, number of employees hired during the last year, and number of employees who left the company during the last year. In the further analyses concentrating on measuring the effects of independent variables on dependent variables, revenue, age of the company and main industry group are variables that are controlled for in order to reduce their effect on the value of the dependent variable.

The sixth part of the questionnaire includes three background questions related to the individual respondent. These individual control variables are: the overall employment duration in the organization, current position in the company, and employment duration in this current position. This information is mainly used to ensure that the respondents of the survey are persons operating in managerial positions.

6.1.2 Measures of work motivation of employees

The second part of the questionnaire includes questions related to the perceptions of the respondent about the work motivation of employees. Work motivation is regarded as a mediating variable between incentives and organizational innovativeness. The theoretical base for studying motivation in this thesis is based on the self-determination theory, and thus questions measuring motivation are divided to the ones examining extrinsic motivation (items 1-4) and others examining intrinsic motivation (items 5-9). The Work Extrinsic and Intrinsic Motivation Scale (WEIMS) of

Tremblay et al. (2009), that is grounded in self-determination theory, is adapted to measure the type of motivation in employees. Items 1, 2 and 3 measuring the extrinsic motivation, as well as items 6, 7 and 8 measuring the intrinsic motivation are adapted from the WEIMS. Item 4 is added based on the Total reward framework (Kauhanen, 2012, 111) where various fringe benefits represent one type of economic rewards which are indicated to represent the extrinsic motivation of employee. Item 5 is added as a measure of intrinsic motivation because the basic needs to form interpersonal attachments and attain a feeling of belongingness are a part of fundamental human motivation (Baumeister and Leary, 1995). Item 9 is adapted from the Situational Motivation Scale (SIMS) of Guay et al. (2000), which is also grounded on the self-determination theory and acts as a basis for the items included in the WEIMS. Both WEIMS and SIMS apply a 7-point Likert scale, which is transformed into a 4-point Likert scale in this study (1=does not correspond at all, 4=corresponds a lot).

6.1.3 Measures of incentive systems

The third part of the questionnaire asks the respondent to indicate how often different incentive policies are implemented in their company. Incentives act as independent variables in this study. In line with the Total reward framework (Kauhanen, 2012), incentives are divided to tangible incentives (items 1-6) and intangible incentives (7-12). Items are mostly developed for the purpose of this study. In case of items 4, 5, 6 and 7, a study of Wood (1996) is applied. The study states that group- or organizational-wide forms of performance pay systems (items 4, 5, 6) are associated with high commitment management. Additionally, employees' ability to influence and their participation in the design of payment systems leads to commitment and increases the feeling of transparency and fairness of payment system (Wood, 1996). The scale applied in this study is a 4-point Likert scale (1=never, 4=often).

6.1.4 Measures of organizational innovativeness

The fourth part of the questionnaire measured organizational innovativeness according to the dual-core model of innovation by Daft (1978). Innovativeness is considered a dependent variable that can be affected by incentive systems and employees' work motivation. The questions considering organizational innovativeness mainly consisted of the extent to which the company had used new technologies, new products or services, new procedures, and new organizational forms in the past three years. The prior surveys conducted by Damanpour (1991) and Park and Kruse (2014) acted as examples in creating the items of this section. Item 1 is partially adapted from a questionnaire of Wang et al. (2010) and it measures the extent of introducing new products and services to the market. Items 2 and 3, on the other hand, measure the extent to which the company has adopted new technical innovations, while items 4 and 5 are related to the adoption of new administrative innovations. Item 6 measures the extent to which the company cooperates with extrinsic parties in developing innovations, and was suggested by the representatives of The Federation of Finnish Technology Industries. Lastly, item 7 measures the potential creativity of personnel and is grounded in studies of Amabile et al. (1996). Once again, a 4-point Likert scale is applied to measure the extent of occurrence of these innovations (1=not at all, 4= a lot).

6.1.5 Measures of organizational culture types

The fifth part includes items related to the perceptions of the organizational culture types. The type of primary organizational culture is determined by applying a modified Organizational Culture Assessment Instrument (OCAI) of Cameron and Quinn (2006), which is based on the Competing values framework of Quinn and Rohrbaugh (1983). The Purpose of the original OCAI is to assess six key dimensions of organizational culture. These dimensions relate to the dominant

characteristics of the organization, the leadership style of the organization, management of employees, the glue that holds the organization together, organizational strategic emphases and criteria of success. Each one of these six dimensions incorporates four alternatives indicating the four different organizational culture types. The aim of the respondent is to divide a total of 100 points among these alternatives depending on the extent to which they are similar to the organization. (Cameron and Quinn, 2006)

The amplitude of the original OCAI makes it too time-consuming and complex for this particular questionnaire, and thus the instrument is modified to meet the assured 5 minute duration of answering the questionnaire. In the adapted OCAI, respondents are presented with four different descriptions of company cultures (A-D) which are based on the six key dimensions of organizational culture that have been compressed to a few sentences. The respondents are asked to rate each of the alternatives from 1 to 4 depending on the extent to which the description is similar to their own organization. Alternative A represents clan culture, alternative B adhocracy culture, alternative C market culture, and alternative D hierarchy culture. By asking the respondent to rate the culture types in order of their suitability instead of dividing 100 points among the alternatives, the possibility of them distributing equal amount of points to several different alternatives is avoided. On the other hand, the rating option disables measuring the strength of a prevailing organizational culture.

6.2 Data and data collection

The data is gathered from a focus group consisting of companies operating in technology-driven industries classified by the TOL2008 standard, which is based on the NACE Rev.2 classification of economic activities in the European community (Finnish Customs, 2014). Namely, these industries are electrical and electronics industry, mechanical

engineering, metal industry, engineering activities and related technical consultancy, and ICT industry. In case of the ICT industry, NACE Rev.2 standard classification is extended with OECD's definition of the ICT sector (OECD, 2011, 159). All the included industries are presented in Appendix 1. These industries are selected because, in addition to being technology-intensive, Statistics Finland (2013) states that electronics industry received most and metal industry second most international patents in 2012, which can be interpret as one indicator of innovativeness. Additionally, ICT industry is included due to its high rate of technological progress and innovativeness, and its role as one of the fastest growing sectors in the EU and Finland (OECD, 2011).

Actual sample of companies representing the chosen industries is collected from Amadeus database, where search conditions are limited to Finland, to the selected NACE Rev.2 standard industrial classifications and to companies with number of employees exceeding four people, which considerably lowers the amount of the sample, as many micro sized companies with less than five employees are left out. Still, this action is justified, because organizational culture is better represented by more people. By having the amount of personnel limited to a minimum level of five employees, all of the micro-sized companies (which are defined to have less than 10 employees) are not excluded from the population. This gives an opportunity to examine small startups in the sample, which might have quite an innovative organizational culture worth examining. As an addition, the level of annual turnover is set to the minimum of 200 000 EUR to ensure that the companies included in the survey are in fact active and have a certain volume of business operations.

The dataset obtained from Amadeus database contains a total of 3 704 companies that fit the pre-determined qualifications. Some companies are listed together with their contact information, such as a general e-mail address. However, since the primary objective is to collect responses from the company managers, such as the CEOs or HR managers, majority of

the e-mail addresses is collected manually. The final amount of sent e-mails containing the cover letter and survey link is 3 106 due to absence of contact information and seizure of operations of some companies. A total of 233 e-mails were failed to deliver through the Qualtrics Online Survey software, and bounced back because the message delivery was blocked by the recipient. Thus, when cleared from unreachable and ineligible respondents, the final sample is 2 873 companies. In a period of four weeks, during which the questionnaire was open for data collection, a total of 424 valid responses were collected. The active response rate of this survey is 14,75 per cent, which is quite high for an online questionnaire, where a typical response rate tends to be 11 per cent and lower (Saunders et al., 2009, 364-365). The significant sample of 424 companies gives a good representation of the entire population.

The questionnaire is available in both Finnish and English making it possible to collect answers also from the company managers who do not speak Finnish as their first language. Both questionnaires are presented in the Appendix 6. The original measurement tools adapted from previous studies written in English language, such as the OCAI-tool, are carefully translated to Finnish language, ensuring that the associative value is not lost in translation. Both of the surveys are pretested with two entrepreneurs in the managing positions in their own companies and one HR professional working in an international company. Based on their comments and adjustment suggestions made by the representatives of The Federation of Finnish Technology Industries, the questions and phrases are modified to reach a level of desired readability, clarity and precision. The questionnaire is structured to be light and appealing, and answering it takes approximately 5 minutes.

6.3 Analysis methods

The data collected through questionnaire is first exported from Qualtrics to Microsoft Office Excel where it is properly structured and then analyzed

quantitatively using the IBM SPSS statistical analytics software. The summated measurement scales are created using factor analysis, which define the underlying structure of interrelationships among a large number of variables (Hair et al. 1998). One way ANOVA is applied in order to test whether there are statistically significant differences in the means between the industries and culture types. The correlations between company features, organizational culture types, intangible and tangible incentives, intrinsic and extrinsic motivation, and organizational innovativeness are tested with Pearson product-moment correlation coefficient (Pearson's R). The relationships between tangible and intangible incentives and different types of motivation, as well as organizational innovativeness are studied by means of a linear regression analysis. The moderating effect of different organizational culture types on the relationships between incentives and motivation and innovativeness is studied by the means of hierarchical regression for moderation. These analyses are more thoroughly introduced in the following chapter.

7   EMPIRICAL RESULTS

This chapter presents the descriptive statistics and results of the statistical analysis that was carried out on the collected data using IBM's SPSS statistics software, version 22.0.0.0. First, a descriptive analysis of respondents and companies is provided to shed more information on the sample of 424 companies. After this, a formation of summated scales and analysis of their reliability is conversed. One way analysis of variance (ANOVA) is applied in order to test whether there are statistically significant differences in the means between the industries and culture types.   Exploratory factor analysis is used to assess the created summated scales and explore interdependencies between observed variables. As a result of factor analysis loadings, the set of variables is reduced to five factors representing intangible and tangible incentives, intrinsic and extrinsic motivation, and organizational innovativeness. Pearson product-moment correlation coefficient (Pearson's R) is used to measure the dependencies between different organizational features, culture types, intangible and tangible incentives, intrinsic and extrinsic motivation, and organizational innovativeness. In order to study the mediating effect of motivation on the relationship between incentives and innovativeness, a multiple linear regression analysis is applied and the three step technique by Baron and Kenney (1986) is followed in order to conduct the mediated regression. The influence of primary organizational culture types on relationships between incentives and motivation, and incentives and innovativeness is first studied by the means of hierarchical regression analysis. In the hierarchical analysis, the effect of interaction variable was detected to be insignificant, and thus, a multiple linear regression analysis with subsets representing different culture types was applied to further investigate the impact of organizational culture.

7.1 Descriptive statistics and assumptions of the regression model

The descriptive statistics of original variables are presented in Appendix 7. Industry groups, culture types and respondent's organizational position are left outside the examination because they are coded as dummy variables, indicating the absence or presence of the particular feature. Some outliers were observed in variables representing revenue of a company and the amount of fulltime employees. These variables are transformed by computing their natural logarithm.

Linear regression analysis includes assumptions about normality and homoscedasticity of the residuals in order to ensure that the analysis is correct. The normality of the residuals is estimated from the Normal P-plots of regression standardized residuals. The residuals are mainly normally distributed as the residual curve goes in a direct line from one corner to another. Potential heteroskedasticity of the residuals is assessed using partial regression plots. The residuals were at least moderately homoscedastic because they distributed evenly across the scatterplot. In the regression coefficients, values of tolerance were included in order to measure collinearity and multicollinearity. The values of tolerance range from 0 to 1, and values closer to 1 indicate that there is no multicollinearity. In this study, all of the tolerance values of regression coefficients were well above 0.7. Multicollinearity can also be assessed using the values of variance inflation factor (VIF) which is the inverse of tolerance eigenvalues, condition indexes and variance proportions. All of the VIF values were under 5, which supports the notion of no multicollinearity in this study.

7.2 Descriptive analysis of the sample

Descriptive analysis of the individual respondents and the companies they represent is reviewed next in order to gain information about the company

representatives' characteristics, including their position and employment duration in the company. The basic background information of companies is also presented and they are divided to main industry groups based on their NACE Rev.2 rating.

7.2.1 The respondents

A total of 424 valid responses were collected when the survey was closed after being open for four weeks. The majority of respondents (321 persons) held a current position as the chief executive officers or vice presidents of the company; this was expected since the survey links were primarily sent to the e-mails of CEO's. The second biggest group of respondents is represented by HR managers and directors (40 persons), then by chief operation officers or development managers (25 persons), chief finance officers and finance managers (12 persons), and members and chairmen of the board (9 persons). The other respondents (17 persons) include i.e. marketing directors, office managers and sales directors.
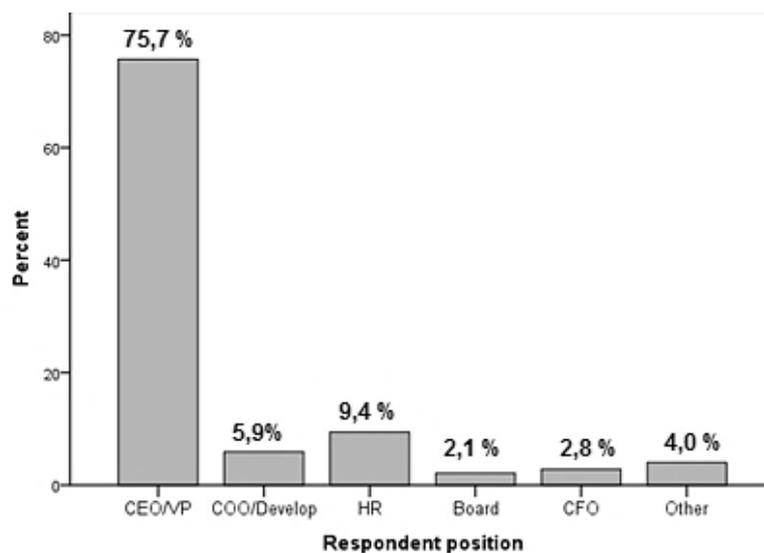
Figure 14. Current organizational position of the respondents

The employment durations of the respondents included the employment duration in the company and the employment duration in the current

position. As seen in the table below, the majority of respondents have worked in their current companies for 6-10 years and slightly less respondents for 1-5 years. The employment duration in the current position is 1-5 years in the majority of cases.

Table 2. Employment durations of respondents

	Employment duration in the firm	Employment duration in this position
Less than 1 year	5,5 %	11,1 %
1-5 years	23,3 %	33,9 %
6-10 years	24,7 %	24,6 %
11-15 years	16,6 %	12,8 %
16-20 years	12,1 %	7,3 %
Over 20 years	17,8 %	10,2 %

7.2.2 The respondent companies

The main industry groups and the respondents' distribution to these industries are presented in the figure below. The main industry groups are composed from the NACE Rev.2 industry specifications and their detailed grouping can be seen from Appendix 1.
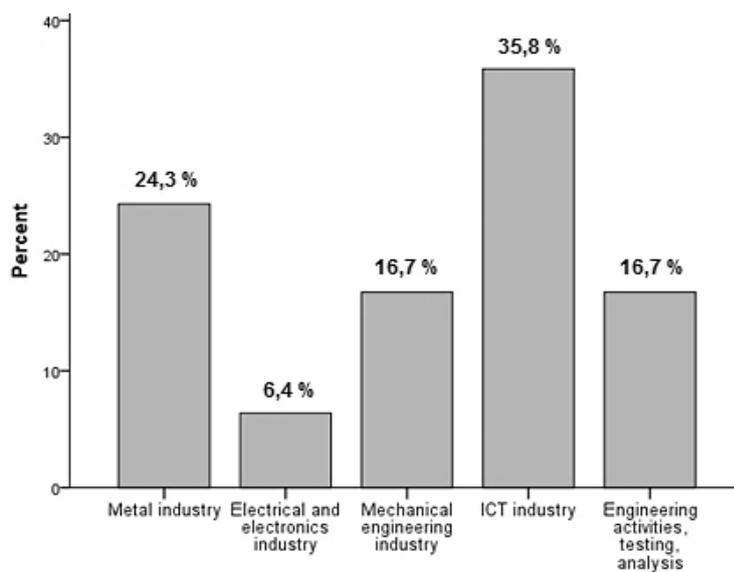
Figure 15. The industry types of companies

The company representatives were also asked to mark the organizational culture (clan, adhocracy, market, hierarchy) that best fit to their company, based on this choice, the respondent companies are grouped to their primary culture types seen in the pie chart below. Culture types representing flexibility and discretion (clan and adhocracy cultures) are distinctly dominant, representing a total of 71 per cent of responded companies. On the other hand, the stable and controlled culture types (market and hierarchy cultures) represent a minority with only 29 per cent. The prevalence of collaborative and creative organizational cultures is reasonable since the industries represented in the sample are quite innovative.
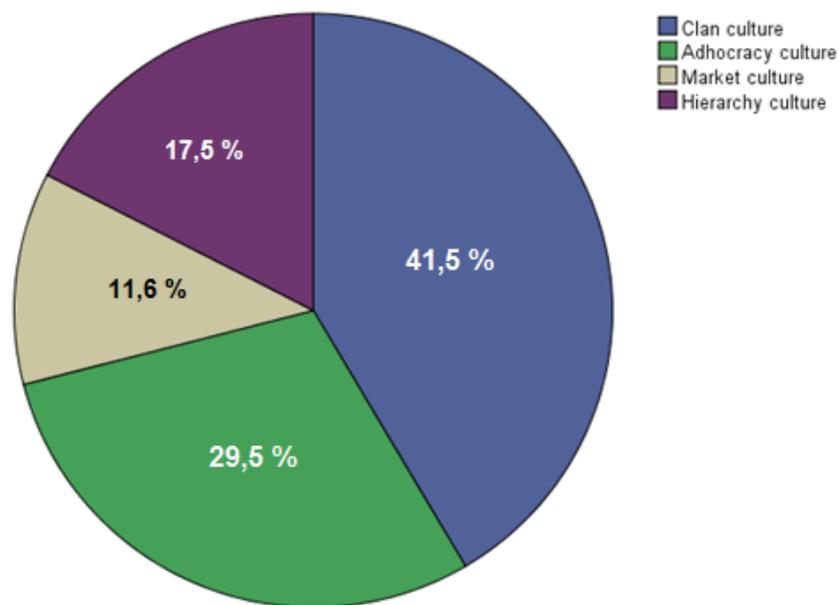
Figure 16. The primary culture types of the organizations

It was further analyzed what type of organizational cultures are found primary in different industries. As can be seen from Table 3, clan culture and adhocracy culture occur most frequently in the companies operating in the ICT industry. Market culture is more dominant in respondent companies operating in metal industry, and hierarchy culture also appears most frequently in ICT industry. These findings only give a descriptive

overlook at the sample but should not be used to draw deeper conclusions, because the majority of cultures are observed in ICT industry mostly because there were more respondents representing the ICT related companies.

Table 3. Organizational culture types and industry groups

Type of industry	Primary culture type				Flexibility vs Control cultures	
	Clan culture	Adhocracy culture	Market culture	Hierarchy culture	Flexibility and discretion	Control and stability
	Count	Count	Count	Count	Count	Count
Metal industry	43	21	**19**	20	64	39
Electrical and electronics industry	10	7	4	6	17	10
Mechanical engineering industry	28	22	7	14	50	21
ICT industry	**57**	**55**	14	**26**	112	40
Arch. and eng. activities; testing, analysis	38	20	5	8	58	13
Total	176	125	49	74	301	123
Percentage	41,5	29,5	11,6	17,5	71,0	29,0

The following Table 4 presents the means of the summated scales representing the constructs of tangible and intangible incentives, extrinsic and intrinsic motivation, and organizational innovativeness in the different industry groups and primary culture types. One way ANOVA analysis is applied in order to test whether there are statistically significant differences in the means between the industries and culture types. The differences are significant when ANOVA's Sig. value is under 0,05.

Table 4. The differences of incentives, motivation and innovativeness in different organizational environments.

		Tangible incentives	Intangible incentives	Extrinsic motivation*	Intrinsic motivation	Organizational innovativeness
INDUSTRIES	**Metal**					
	Mean	2,070	2,765	2,190	2,897	2,423
	N	103	101	101	101	103
	Std. dev.	,729	,606	,744	,479	,522
	ANOVA: F	10,652	35,317	4,320	30,470	17,366
	Sig.	,001	,000	,038	,000	,000
	Electrical and electronics					
	Mean	**2,453**	3,000	2,00	2,933	2,662
	N	27	26	26	27	25
	Std. dev.	,871	,549	,849	,796	,601
	ANOVA: F	1,797	,162	4,998	4,665	,167
	Sig.	,181	,688	,026	,031	,683
	Mechanical engineering					
	Mean	2,267	3,061	2,34	3,050	2,716
	N	71	71	71	71	71
	Std. dev.	,722	,532	,736	,545	,524
	ANOVA: F	,003	,091	,017	3,375	2,630
	Sig.	,956	,763	,895	,067	,106
	ICT					
	Mean	2,437	**3,208**	**2,48**	**3,432**	**2,820**
	N	152	152	151	152	150
	Std. dev.	,685	,478	,756	,458	,506
	ANOVA: F	12,594	21,913	9,027	57,063	32,696
	Sig.	,000	,000	,003	,000	,000
	Arch. & eng. activities;testing, analysis					
	Mean	2,141	3,079	2,31	3,180	2,359
	N	69	71	70	70	70
	Std. dev.	,682	,538	,808	,647	,551
	ANOVA: F	2,658	,375	,023	,050	18,872
	Sig.	,104	,541	,881	,823	,000
PRIMARY CULTURE TYPES	**Clan**					
	Mean	2,268	3,097	**2,45**	3,241	2,509
	N	176	174	173	175	174
	Std. dev.	,692	,545	,795	,504	,511
	ANOVA: F	,007	2,878	7,677	5,093	11,530
	Sig.	,935	,091	,006	,025	,001
	Adhocracy					
	Mean	**2,385**	**3,104**	2,27	**3,275**	**2,898**
	N	124	124	124	124	124
	Std. dev.	,705	,498	,664	,549	,527
	ANOVA: F	4,264	2,174	1,089	6,391	49,397
	Sig.	,040	,141	,297	,012	,000
	Market					
	Mean	2,260	3,047	2,16	2,906	2,565
	N	49	49	49	49	47
	Std. dev.	,844	,608	,800	,595	,586
	ANOVA: F	,014	,004	2,493	11,366	,478
	Sig.	,905	,948	,115	,001	,490
	Hierarchy					
	Mean	2,095	2,806	2,25	2,972	2,438
	N	73	74	73	73	74
	Std. dev.	,750	,599	,846	,693	,535
	ANOVA: F	5,198	16,664	,954	9,987	9,545
	Sig.	,023	,000	,329	,002	,002

As seen in Table 4, companies operating in electrical and electronics industry are the ones that emphasize most tangible incentives. Intangible incentives, the both types of motivation and organizational innovativeness are emphasized by the companies in the ICT industry. Surprising enough extrinsic motivation seems to be emphasized in clan culture, while intangible incentives, intrinsic motivation and organizational innovativeness are emphasized in companies with a predominant adhocracy culture.

7.3 Measurement scales

In order to measure the dimensions of incentive systems, motivation and organizational innovativeness, a total of 5 original summated scales were formed according to the theoretical concepts. In this study, the separate variables are summated and their average score is used in the analysis. The reliability of each summated scale is evaluated with Cronbach's alpha, which is a coefficient of internal consistency and the most widely used measurement to assess the reliability of scales. The value of Cronbach's alpha varies from 0 to 1, and value of 0,6 is generally considered to be the lower limit of acceptability. The values of Cronbach's alphas are presented in Table 5. As the table presents, the Cronbach's alpha coefficients are over the acceptable value of 0,6 in all summated scales except for the one measuring extrinsic motivation.

Table 5. Original summated scales and their Cronbach's alpha

Summated scale	N	Mean	Std. dev.	Cronbach's alpha
1 Intangible incentives	6	2,974	,481	,687
2 Tangible incentives	7	2,318	,588	,688
3 Intrinsic motivation	5	3,165	,580	,867
4 Extrinsic motivation	4	2,855	,453	,466
5 Innovativeness	7	2,618	,558	,825

Because Cronbach's alpha does not ensure unidimensionality but rather assumes that it exists, exploratory factor analyses are conducted.

Unidimensionality refers to the issue that each summated scale should consist of items loading highly on a single factor. The Maximum likelihood-method is applied and an orthogonal Varimax rotation is used because factor correlations are not driven by the data. The absolute value of 0,4 is used to suppress small coefficients from factor loading. The first factor analysis is conducted to see whether the variables indicating the overall concepts of incentives, motivation and organizational innovativeness load properly into three different factors. Organizational innovation is assumed as a one-dimensional construct although in future studies it might be worth assessing the dual-core dimensions of organizational innovativeness including administrative and technological levels. All of the variables representing external motivation (4 items) and three variables representing incentives did not load to the factors and were thus deleted from the refined factor analysis. The detailed loadings of this factor analysis that provides an overview on factors of incentives, motivation and innovation are presented in the Table A in Appendix 8. The three factor groupings received good communalities, which were mostly over 0,50 with a few exceptions, as well as acceptable Cronbach's alpha values, Kaiser-Meyer-Olkin values (above 0,6), and Bartlett's test.

 After the primary factor analysis, a factor analysis for incentives was conducted and the number of factors was limited to two because according to the theory the incentives were divided to intangible and tangible ones. The factor solution for intangible and tangible incentives is presented in the Table B in Appendix 8. Once again, not all of the coefficients loaded on factors within the given minimum limit of 0,4. These variables were excluded from the final summated scales. A similar factor analysis was also conducted to variables representing motivation and as a result a factor for intrinsic motivation was created (see Table C in Appendix 8). Unfortunately, the variables measuring extrinsic motivation did not load appropriately on the same factor and had a Cronbach's alpha value significantly lower than the accepted 0,6. Thus, no summated scale was created for extrinsic motivation; instead, a single variable representing

the motivational power of good employee benefits ("motivating benefits") is used to represent the concept of extrinsic motivation.

After confirming the scales with reliability and factor analyses, the following summated scales were formed (see Table 6). The Kolmogorov-Smirnov test of normality shows that the scales are normally distributed because the null-hypothesis of normal distribution is approved due to the p-values that are above 0,05.

Table 6. Summated scales matrix

Summated Scales	N of items	Mean	Std. Dev.	Cronb. alpha	Kolmogorov-Smirnov
Tangible incentives	4	3,042	,558	,658	,083
Intangible incentives	3	2,271	,729	,612	,149
Intrinsic motivation	5	3,168	,580	,867	,000
Organizational innovativeness	7	2,618	,558	,825	,081

When assessing the reliability and validity of the research it is also important to take into consideration the weaknesses that are typical for the particular data collection method (Hirsjärvi et al., 2000, 182). The possible disadvantages related to a survey are for instance a lack of a possibility to ensure that the questions are answered truthfully and carefully. In case of this survey, it was stressed to the respondents that the questionnaire was anonymous and their individual responses could not be linked to any certain company. Additionally, the questionnaire was designed to be very compact and there were no personal questions as such. It is also difficult to control misunderstandings because respondents' awareness of the theme is unknown. However, this questionnaire was primarily designated and sent to the top management of sample companies, and it is thus quite certain that they have a good knowledge of the discussed topics. The questionnaire was also constructed in a way that concepts were presented in a commonly comprehensible way and no business jargon was used. The readability and clarity of the questionnaire was also pre-tested with

two entrepreneurs and one HR professional as well as two representatives of The Federation of Finnish Technology Industries. The final formulation of the questionnaire was based on their comments and suggestions. A typically low response rate of online surveys (11 per cent) is also one of the disadvantages of this particular research method (Saunders et al., 2009, 364-365). Two reminders were sent to the respondents to accumulate more responses. The final response rate of this research is 17,75 per cent, which is considered good.

7.4 The relationships between organizational cultures, company features, incentives, motivation and innovativeness

The relationships between organizational culture types, intangible and tangible incentives, intrinsic and extrinsic motivation, and organizational innovativeness are tested with Pearson's R (Pearson product-moment correlation coefficient). Correlation coefficient indicates the strength of the association between any two metric variables. The values of the correlation coefficient vary between -1 and 1, the closer coefficient is to 0 the weaker the correlation. Negative values mean negative correlation whereas positive values denote positive correlation. Generally, a coefficient value of 0,60 is considered as moderate correlation, a value between 0,60-0,80 as strong correlation, and a value over 0,80 as very strong correlation. (Hair et al. 1998, 143)

The following figures illustrate the significant relationships of different industries and cultures (Figure 17) as well as organizational culture types and incentives, employees' work motivation, organizational innovativeness, and the age and revenue of the firm (Figure 18). A more comprehensive and detailed table representing the correlation matrix with values of Pearson's correlation coefficients of variables is presented in Appendix 9. As can be observed from the matrix, the correlation coefficients are relatively low. Correlations with statistical significance at 5

per cent risk level are marked with *, whereas correlations with significance at 1 per cent risk level are marked with **.
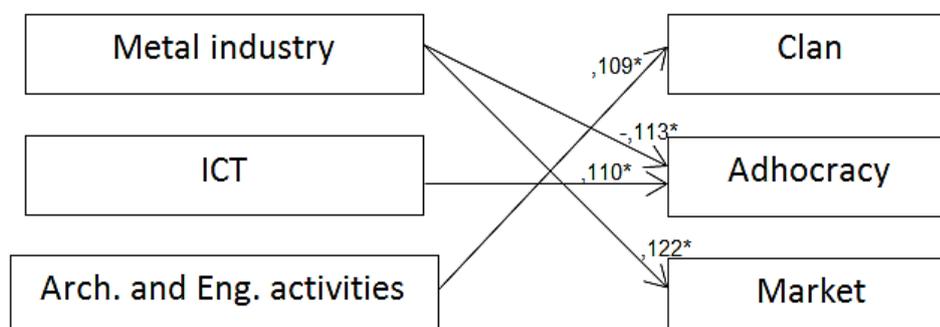
Figure 17. The relationships of industries and culture types

As can be seen from the presented figure illustrating the relationships between different industries and culture types, there is a negative relationship between metal industry and adhocracy culture type, which is described as flexible, innovative and entrepreneurial. The industry has a positive correlation with more controlled, competitive and results-oriented market culture. The ICT industry is connected to innovative adhocracy culture, where staying on the cutting edge and prospecting new opportunities are valued.   The industry group of architectural and engineering activities, including technical testing and analysis, is positively correlated with clan culture which is highly focused on commitment and participation. All of the correlations between industries and culture types are significant at 5 per cent risk level.

From Figure 18 one can see that clan culture is positively and significantly correlated with both intrinsic and extrinsic motivation, though the correlation is slightly stronger in case of extrinsic motivation. Correlations with significance at 1 per cent risk level are presented with thicker arrows. Clan culture is significantly and negatively correlated with organizational innovativeness. Adhocracy culture is most positively and significantly correlated with innovativeness, and it also correlates positively with intrinsic motivation. The correlation coefficient shows that adhocracy culture has a slightly negative correlation with revenue. The age of the

company is negatively correlated with adhocracy culture, which signifies that the predominant adhocracy culture type is associated with younger companies. Market culture is negatively and significantly correlated with intrinsic motivation, but on the other hand positively related to revenue – this is not a surprise, as market culture is characterized as highly results-oriented and concentrated on winning in the marketplace. Market culture is positively correlated with the age of the company, which means that it is associated with older companies. The findings regarding the relationships between market and adhocracy cultures and the age of companies are quite interesting because they underpin the previous findings of Quinn and Cameron (1983), who propose that in the earliest stages of their life cycles organizations tend to be dominated by the entrepreneurial and creative adhocracy cultures, whereas organizations that have reached their mature phase in the life cycle focus on market culture where external competitiveness and relationships are emphasized. A primary culture of hierarchy, which is dominated by strong control and formal practices, is significantly and negatively correlated with intangible incentives, intrinsic motivation, and innovativeness. Hierarchy is also negatively related to tangible incentives but on a 0,05 significance level.
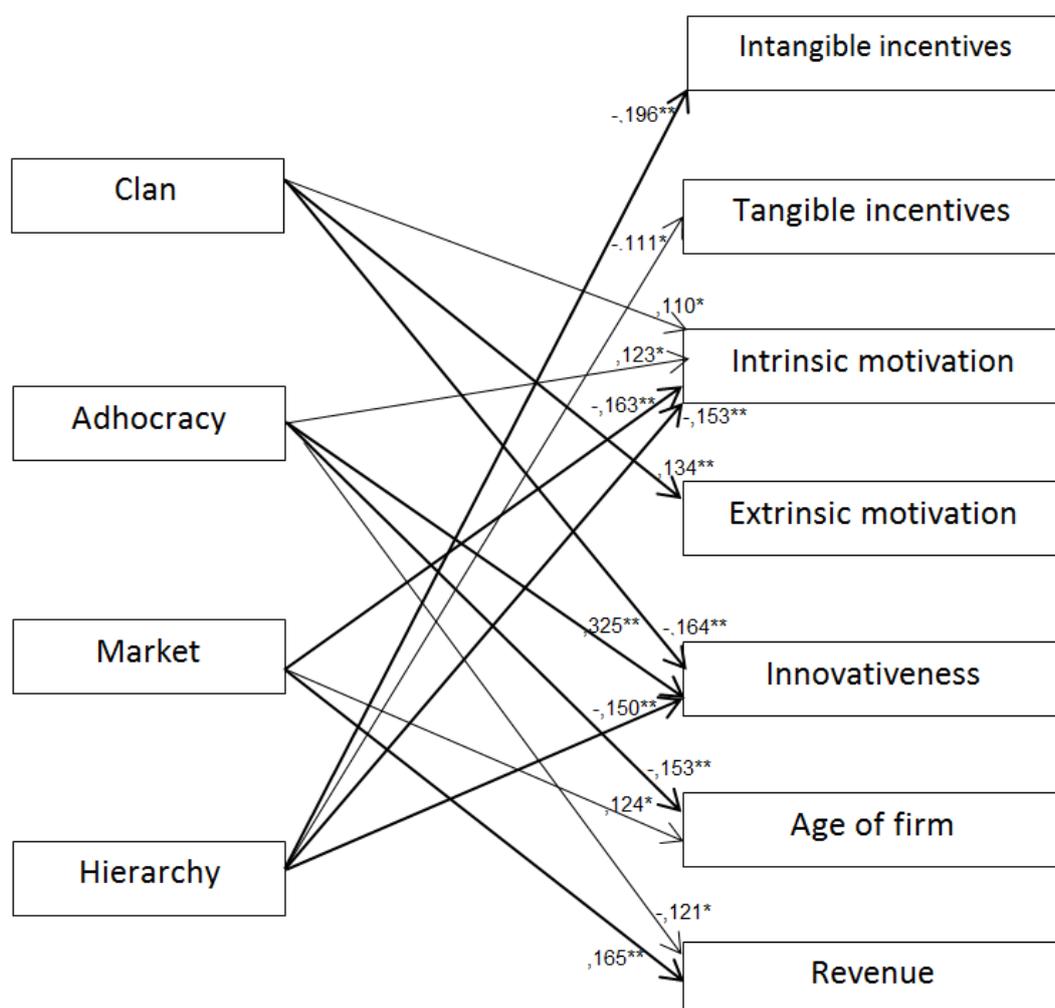
Figure 18. The relationships of culture types and other factors

As presented in the correlation matrix (Appendix 9), intangible incentives (,380**) are more positively and significantly correlated with intrinsic motivation than tangible incentives (,272**). Additionally, the ICT industry seems to correlate highly (,223**) with the use of intangible incentives. Intangible incentives (,447**) have a higher correlation with innovativeness than tangible incentives (,299**), which could potentially support the first hypothesis of this study "*H1: Intangible incentives are more positively correlated with innovativeness than tangible incentives.*" Both intangible (,223**) and tangible incentives (,365**) have a positive correlation with revenue. Intrinsic motivation (,399**) has a considerably higher positive correlation with organizational innovativeness than extrinsic motivation (,149**).   Intrinsic motivation is significantly and negatively (-,146**)

correlated with the age of the firm, which indicates that it is associated with younger companies. Companies representing the ICT industry are highly related to intrinsic motivation of employees (,346**). Organizational innovativeness is positively correlated with revenue (,115*), and the industry group of ICT (,270**). On the other hand, metal industry (-,200**) and the industry group of architectural and engineering activities (-,208**) seem to be negatively correlated with organizational innovativeness. Age of the firm is strongly and positively related to the level of revenues (,489**), and there is a positive connection with mechanical engineering (,280**) and metal industries (,198**). Companies operating in the ICT industry (-,338**) and architectural and engineering activities (-,111*) are correlated with younger companies. Interesting enough, the amount of hired employees during the last year correlates positively with intangible (,209**) and tangible incentives (,240**), as well as intrinsic motivation (,144**) and innovativeness of the firm (,143**). The amount of employees who left the company during the last year is positively connected to market culture type (,144**) , tangible incentives (,165**), and the age of the firm (,144**).

Though the correlation coefficients provide a convenient way to examine the interrelations of construct, they do not automatically mean that there is a causal connection between the variables. The reason for this is that the correlation coefficient strongly depends on the size of the sample and therefore a weak correlation can be interpreted to be statistically significant. Thus, the hypotheses must be further investigated using regression analyses in SPSS.

7.5 The mediating role of motivation between incentives and innovativeness

The relationships between different types of incentives and motivation as well as organizational innovativeness are studied by means of a linear regression analysis. In this study a confirmatory regression analysis is

applied to examine the impact of a set of selected variables that are important according to theory. The scales are first of all tested for potential heteroskedasticity and multicollinearity. As the scatterplots are evenly distributed in all of the cases, it is concluded that the data is homoscedastic. Additionally, when testing for multicollinearity, the variance inflation factor (VIF) is well under 5, which means that there are no multicollinearity problems.

The multiple linear regression analysis is used to analyze the relationship between a single dependent variable (y) and several independent variables (x). In addition to independent and dependent variables, this analysis also identifies a mediator (z), and is therefore called a mediated regression. In this study, the two types of incentives hold the role of independent (x) variables, the organizational innovativeness acts as the dependent (y) variable, and intrinsic and extrinsic motivations are assumed to be the mediators (z) that mediate the relationship between the independent and dependent variables. It is hypothesized that:

H2a Intrinsic motivation will mediate the positive relationship between intangible incentives and innovativeness.

H2b Extrinsic motivation will mediate the less positive relationship between tangible incentives and innovativeness.

The three step technique by Baron and Kenney (1986) is applied to conduct the mediated regression, and the existence of mediation is tested through the four conditions. The regression analysis is conducted using the forced estimation method. In this method, all of the desired independent variables are entered into analysis without excluding some of them before or during the analysis. There is no need for e.g. hierarchical or stepwise regression if the mediating effects are tested in three steps as presented below (Baron and Kenney, 1986).
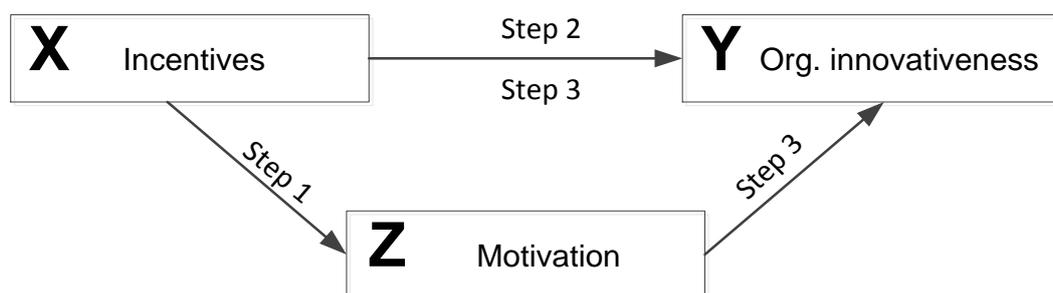
Figure 19. Regression analysis for mediating effect

Step 1: Regressing the mediator on the independent variable, i.e. intrinsic and extrinsic motivation on intangible and tangible incentives ($z=a_1+b_1x$)

Step 2: Regressing the dependent variable on the independent variable, i.e. organizational innovativeness on intangible and tangible incentives ($y=a_2+b_2x$)

Step 3: Regressing the dependent variable on both the independent variable and on the mediator variable, i.e. organizational innovativeness on the intangible and tangible incentives as well as the intrinsic and extrinsic motivation ($y=a_3+b_3x+b_4z$). (Baron and Kenney, 1986, 1176)

7.5.1 The regression analyses

The results of regression analyses conducted in the three steps specified by Baron and Kenney (1986) are presented in the following Tables 7-10. In the model statistics, R-value is the correlation between the observed and predicted values of dependent variable, R^2 stands for the proportion of variance in the dependent variable which can be explained by the independent variables (coefficient of determination), and Adj. R^2 is the adjusted coefficient of determination that penalizes the addition of extraneous predictors to the mode. Adjusted coefficient of determination takes into account the number of the independent variables included in the regression equation and the sample size. F signifies the results of F test for the additional contribution to prediction accuracy of a variable above

that of the variables already in the equation. Sig. is the significance of this change in F value, and a significance value below the risk level of 0,05 signifies that F change is statistically significant. In the regression coefficients, B is the initial regression coefficient of the variable, while beta coefficient is the estimate resulting from an analysis performed on standardized variables so that they have variances of 1. The t and Sig. values measure the significance of the partial correlation for variables, and a significance value below the risk level of 0,05 means that divergence from zero is statistically significant. The value of tolerance (Tol.) is used to measure collinearity and multicollinearity – the tolerance values approaching 1 indicate that there are no multicollinearity problems.

Tables 7 and 8: *Step 1* Regressing motivation on incentive types

Dependent variable	R	R^2	Adj. R^2	F	Sig.
Intrinsic motivation	,497	,247	,232	16,706	,000
Independent variables	**B**	**beta**	**t**	**Sig.**	**Tol.**
(Constant)	2,324		12,676	,000	
Intangible incentives	,281	**,270**	5,386	,000	,736
Tangible incentives	,123	**,154**	3,031	,003	,714

Dependent variable	R	R^2	Adj. R^2	F	Sig.
Extrinsic motivation	,316	,100	,082	5,621	,000
Independent variables	**B**	**beta**	**t**	**Sig.**	**Tol.**
(Constant)	1,320		4,938	,000	
Intangible incentives	,132	,95	1,739	,083	,742
Tangible incentives	,213	**,201**	3,611	,000	,719

As can be seen from the above presented Tables 7 and 8, both tangible and intangible incentives are positively and significantly associated with intrinsic motivation. The link between intangible incentives and intrinsic motivation is greater, than in case of a link between tangible incentives and intrinsic motivation. Table 8, where dependent variable is extrinsic motivation, shows that tangible incentives are positively associated with extrinsic motivation, but here the relationship between intangible incentives and extrinsic motivation is insignificant. This means that Step1

for analyzing the mediating role of extrinsic motivation between intangible incentives and organizational innovativeness is not fulfilled.

Table 9. *Step2* Regressing innovativeness on incentives

Dependent variable	R	R^2	Adj. R^2	F	Sig.
Organizational innovativeness	,530	,280	,266	19,726	,000
Independent variables	**B**	**beta**	**t**	**Sig.**	**Tol.**
(Constant)	1,064		6,118	,000	
Intangible incentives	,375	**,375**	7,609	,000	,737
Tangible incentives	,080	**,104**	2,080	,038	,709

In the second step, organizational innovativeness is regressed on two types of incentives. As seen from the beta-values presented in the Table 9, intangible incentives are associated more positively with organizational innovativeness than tangible incentives. This finding delivers support for the first hypothesis (H1) of this study, which states that intangible incentives are more positively correlated with innovativeness than tangible incentives.

Table 10. *Step 3* Regressing innovativeness on incentives and motivation

Dependent variable	R	R^2	Adj. R^2	F	Sig.
Organizational innovativeness	,572	,328	,311	19,298	,000
Independent variables	**B**	**beta**	**t**	**Sig.**	**Tol.**
(Constant)	,487		2,411	,016	
Intangible incentives	,316	**,313**	6,267	,000	,683
Tangible incentives	,053	,069	1,379	,169	,683
Intrinsic motivation	,246	**,258**	5,295	,000	,717
Extrinsic motivation	-,029	-,040	-,908	,364	,858

In the third step of the mediated regression analysis is regressing innovativeness on incentives and motivation. As can be seen from the Table 10, intangible incentives and intrinsic motivation are significantly and positively associated with organizational innovativeness. The relationship between tangible incentives and organizational innovativeness is positive, but insignificant. The negative relationship between extrinsic motivation and organizational innovativeness is also not statistically significant due to the significance value which is above the risk level of 0,05. Next, the four

conditions for mediating indicating a mediating effect are tested and discussed.

7.5.2 Testing of the mediation

According to Baron and Kenney (1986, 1177) there are four conditions that should be met to indicate a mediating relationship. These conditions are:

1) The independent variable has to have a significant relationship with the mediator in the first equation (b_1 is significant)
2) The independent variable must have a significant relationship with the dependent variable in the second equation (b_2 is significant)
3) The mediator has to have a significant relationship with the dependent variable in the third equation (b_4 is significant)
4) The effect of the independent variable in the dependent variable must be less in the third equation than in the second (b_3 is smaller than b_2).

Condition 1

There is a significant relationship between both intangible and tangible incentives (independent variable) and intrinsic motivation (dependent variable). The link is much stronger between intangible incentives and intrinsic motivation, than between tangible incentives and intrinsic motivation. There is also a positive and significant relationship between tangible incentives and extrinsic motivation, while the relationship between intangible incentives and extrinsic motivation is insignificant. Due to the fact that the relationship between intangible incentives and extrinsic motivation is insignificant, the first condition does not realize. Thus, extrinsic motivation does not have a mediating role between intangible incentives and organizational innovativeness.

The above findings support the claims presented in the theoretical part stating how intangible incentives, such as recognition and opportunities of self-development, increase intrinsic motivation, and how tangible incentives, such as pay for performance and bonuses, may "crowd-out" intrinsic motivation and thus increase extrinsic motivation in which a person is engaged with the work in order to obtain for instance money or status.

Condition 2

There is a significant positive relationship between intangible incentives (independent variable) and organizational innovativeness (dependent variable). The relationship between tangible incentives and organizational innovativeness is also positive, but less than in case of intangible incentives. By examining both the conditions 1 and 2, it can be said that there is a possibility that intrinsic motivation mediates the relationship between incentives and organizational innovativeness.

Condition 3

When examining the relationships between the incentives and innovativeness as well as motivation and innovativeness, it can be seen that intangible incentives and intrinsic motivation both have a significantly positive relationship with innovativeness. The association of innovativeness with tangible incentives and extrinsic motivation is insignificant. This means that these insignificant relationships do not pass the third condition.

Condition 4

The final condition of examining mediating relationships is that the effects of the independent variables on the dependent variable must be smaller in the third equation than in the second. When observing the presented relationships between intangible incentives (independent variable) and the dependent variable of innovativeness, it can be seen from the beta-values, that the effects are smaller in the third equation than in the second.

Therefore, it can be concluded that intrinsic motivation mediates positively the relationships between intangible incentives and organizational innovativeness as predicted in the hypothesis H2a. The hypothesis H2b is rejected as extrinsic motivation did not act as a mediator between the two types of incentives and organizational innovativeness. This is because all of the conditions were not realized due to the insignificant relationships between intangible incentives and extrinsic motivation, as well as extrinsic motivation and organizational innovativeness. The mediating effect found in this study is illustrated in the following figure.
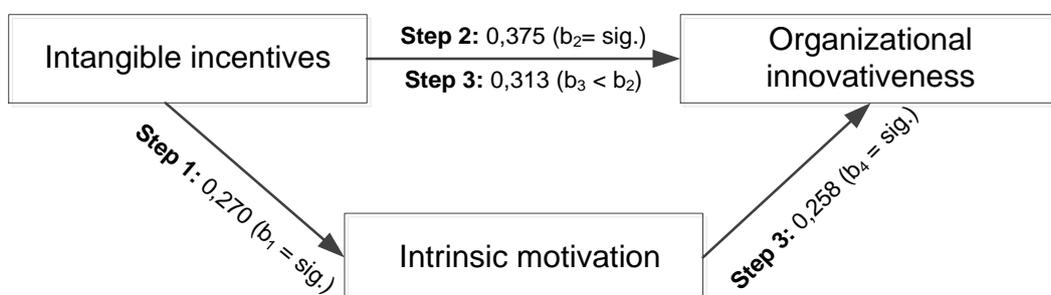
Figure 20. The mediating effect of intrinsic motivation on organizational innovativeness

7.6 The impact of organizational culture on relationships between incentives, motivation and innovativeness

Hypotheses H3a-b and H4a-b suggest that specific organizational culture types could act as moderators between the relationships of incentives and motivation as well as incentives and organizational innovativeness. These moderation hypotheses are:

H3a: The positive relationship of intangible incentives and intrinsic motivation is greater in clan and adhocracy cultures than in market and hierarchy cultures.

H3b: The positive relationship of tangible incentives and extrinsic motivation is greater in market and hierarchy cultures than in clan and adhocracy cultures.

H4a: The positive relationship of intangible incentives and innovativeness is greater in clan and adhocracy cultures than in market and hierarchy cultures.

H4b: The positive relationship of tangible incentives and organizational innovativeness is greater in market and hierarchy cultures than in clan and adhocracy cultures.

The moderation effect of the four different organizational culture types is first tested by the means of hierarchical regression analysis. The basic idea behind the moderation effect is presented in Figure 21. The first step of hierarchical regression involves analyzing the control variables comprising of company age, revenue and industry groups with the dependent variable (motivation types and innovativeness) in order to ensure that the potential shared variability of these control variables with predictor (incentive types) is taken into consideration. One of the industry groups (architectural and engineering activities) is left out from the control variables due to its role as a benchmark dummy variable. In the second step of hierarchical regression analysis, predictor variable is included in the analysis in addition to the previous control variables. In the third step, all of the previous variables are accompanied with the moderator variable, which is the primary culture type. In the fourth step, an interaction variable, which is created by multiplying the standardized values of predictor and moderator, is added to the explanatory model. The moderation effect is justified if the effect of the interaction variable is significant. In this case, the significance values of F change in case of all the tested interaction variables were over the risk level of 0,05, which suggested that culture types did not act as moderators. Despite this, the effects of intangible incentives on intrinsic motivation were positive and significant in clan, market, and hierarchy cultures, and the effects of intangible incentives on innovativeness were positive and significant in clan, adhocracy, and

hierarchy cultures. The control variables were also significant in majority of the models. A further analysis investigating the impact of organizational culture types on relationships between incentives, motivation and organizational innovativeness in a form of linear regression with subsets of primary organizational culture types was decided to be carried out.
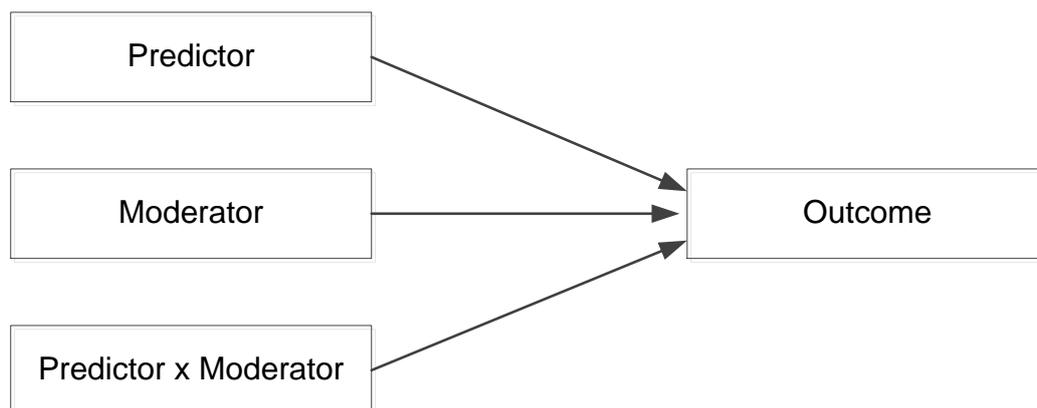
Figure 21. The moderation effect

The findings of linear regression analyses run with subsets of primary organizational culture types are presented in tables A-E in Appendix 10. Table A presents a model summary of the effect of controlled for variables – namely, revenue, age of the firm, and industry groups – on intrinsic and extrinsic motivation types and organizational innovativeness in the context of different organizational culture types. The values of R^2, which stands for the coefficient of determination, and values of adjusted R^2 presented in the table are used to observe the change in level of explanation before and after the predicting variables (intangible and tangible incentives) are added to the model.

As can be seen from Table B, the positive relationship between intangible incentives and intrinsic motivation is greater in clan culture (,330) and adhocracy culture (,324) than in hierarchy culture (,261). The association between intangible incentives and intrinsic motivation in the context of market culture is insignificant, as the significance value exceeds the set limit of 0,05. The coefficient of determination (R^2) and the adjusted

coefficient of determination (Adj. R^2) become higher when the variable of intangible incentives is included into the model to accompany control variables than in case of the regression model where only the effects of control variables are examined. This finding supports the hypothesis H3a, which states that "*The positive relationship of intangible incentives and intrinsic motivation is greater in clan and adhocracy cultures than in market and hierarchy cultures.*"

Table C presents the regression results for the relationship between tangible incentives and extrinsic motivation in the context of different organizational cultures. The positive relationship between tangible incentives and extrinsic motivation is slightly greater in the context of hierarchy culture (,392) than in case of adhocracy culture (,370). The association is insignificant in organizational culture types of clan and market since the significance value exceeds 0,05. Once again, the coefficient of determination and the adjusted coefficient of determination are higher when tangible incentives –variable is included into consideration together with control variables. These findings partially support the predetermined hypothesis 3b, which states that "*The positive relationship of tangible incentives and extrinsic motivation is greater in market and hierarchy cultures than in clan and adhocracy cultures.*"

As can be observed from Table D, the positive relationship between intangible incentives and organizational innovativeness is significant in all of the observed organizational cultures. The positive association is greatest in the context of clan culture (,442), then in hierarchy culture (,428), market culture (,385), and lastly in adhocracy culture (,346). The coefficient of determination and the adjusted coefficient of determination are higher in the model that includes intangible incentives together with control variables. These findings once again only partially support the hypothesis 4a, which states that "*The positive relationship of intangible incentives and innovativeness is greater in clan and adhocracy cultures than in market and hierarchy cultures.*" It seems that the positive

relationship between intangible incentives and innovativeness is significantly positive regardless of the primary culture type.

The last Table E shows the positive relationship between tangible incentives and organizational innovativeness to be considerably greater in a controlled hierarchy culture (,330) than in a flexible clan culture (,242). The association is insignificant in subset models incorporating organizational culture types of market and adhocracy cultures due to the limit exceeding significance values. Once again, the models where variable of tangible incentives is included in observation determine more than the ones with control variables alone. The hypothesis 4b stating that "*The positive relationship of tangible incentives and organizational innovativeness is greater in market and hierarchy cultures than in clan and adhocracy cultures*" is partially supported by these findings.

7.7 Summary of findings

The following table summarizes the empirical findings presented in the previous chapters. Research outcomes are first presented based on the pre-assigned hypotheses. At the end of the table additional findings relating to incentives, motivation and innovativeness, as well as industry groups and culture types are mentioned.

Table 11. Summary table

H1	Intangible incentives are more positively related with innovativeness than tangible incentives
Results:	According to the Pearson's R correlation test, intangible incentives have a higher correlation with innovativeness than tangible incentives. Results of linear regression analysis also indicate that intangible incentives are associated more positively with organizational innovativeness than tangible incentives. ➔ Supported.

H2a	**Intrinsic motivation will mediate the positive relationship between intangible incentives and innovativeness**
Results:	Based on the mediated linear regression analysis that follows the three step technique of Baron and Kenney, it can be concluded that intrinsic motivation mediates positively the relationships between intangible incentives and organizational innovativeness. ➔ Supported.
H2b	**Extrinsic motivation will mediate the less positive relationship between tangible incentives and innovativeness**
Results:	A significant positive relationship between tangible incentives and extrinsic motivation is found. However, extrinsic motivation does not act as a mediator between tangible (nor intangible) incentives and organizational innovativeness. The pre-set conditions of mediation effect are not met due to the insignificant relationships between extrinsic motivation and organizational innovativeness. ➔ Rejected.
H3a	**The positive relationship of intangible incentives and intrinsic motivation is greater in clan and adhocracy cultures than in market and hierarchy cultures**
Results:	A linear regression analysis, run with subsets representing primary organizational culture types, demonstrates that a positive relationship between intangible incentives and intrinsic motivation is greater in clan culture and adhocracy culture than in hierarchy culture. The association between intangible incentives and intrinsic motivation in the context of market culture is proved insignificant. ➔ Partially supported.
H3b	**The positive relationship of tangible incentives and extrinsic motivation is greater in market and hierarchy cultures than in clan and adhocracy cultures**
Results:	The positive relationship between tangible incentives and extrinsic motivation is found to be slightly greater in the context of hierarchy culture than in case of adhocracy culture. The association is insignificant in organizational culture types of clan and market. ➔ Partially supported.
H4a	**The positive relationship of intangible incentives and innovativeness is greater in clan and adhocracy cultures than in market and hierarchy cultures**
Results:	The positive relationship between intangible incentives and organizational innovativeness is significant in all of the observed organizational culture types. The positive association is greatest in the context of clan culture, then in hierarchy culture, market culture, and lastly in adhocracy culture. ➔ Partially supported.

H4b	**The positive relationship of tangible incentives and organizational innovativeness is greater in market and hierarchy cultures than in clan and adhocracy cultures**
Results	The regression analysis proves that positive relationship between tangible incentives and organizational innovativeness is considerably greater in hierarchy culture than in clan culture. The association is insignificant in subset models incorporating organizational culture types of market and adhocracy cultures. ➔ Partially supported.
Additional findings:	• Intangible incentives are more positively and significantly correlated with intrinsic motivation than tangible incentives. Both intangible and tangible incentives have a positive correlation with revenue. • Intrinsic motivation has a considerably higher positive correlation with organizational innovativeness than extrinsic motivation. Intrinsic motivation is associated with younger companies. • Organizational innovativeness is positively correlated with revenue. • The amount of hired employees during the last year correlates positively with incentives, intrinsic motivation, and innovativeness. The amount of employees who left the company is positively dependent of market culture, tangible incentives, and the age of the firm.
	• Tangible incentive systems are emphasized most strongly in companies operating in electrical and electronics industry. • Metal industry has a positive correlation with market culture, and negative correlation with adhocracy culture. • ICT industry is correlated with innovative adhocracy culture, use of intangible incentives, and intrinsic motivation of employees. • The industry group of architectural and engineering activities is positively correlated with clan culture.
	• Clan culture is positively correlated with both intrinsic and extrinsic motivation, though the correlation is slightly stronger in case of extrinsic motivation. Clan culture is negatively correlated with organizational innovativeness. • Adhocracy culture is positively correlated with innovativeness, and intrinsic motivation. Adhocracy culture is negatively correlated with the age of a firm. • Market culture is positively correlated with the age and revenues of a company, and negatively correlated with intrinsic motivation. • Hierarchy culture is negatively correlated with intangible and tangible incentives, intrinsic motivation, and innovativeness.

8 DISCUSSION AND CONCLUSIONS

In this study the interrelations between organizational culture types, intangible and tangible incentives, employee motivation and organizational innovativeness were examined by means of a comprehensive theoretical literature review and an empirical survey that included first-hand information collected from 424 respondents representing Finnish technology industries. The research hypotheses that were formulated based on the existing academic literature were tested using correlation analysis and multivariate regression analysis, including the examination of mediation and moderation effects. A total of seven hypotheses were tested from which two were supported, four partially supported, and one rejected. Results of the hypotheses testing are illustrated in Figure 22.
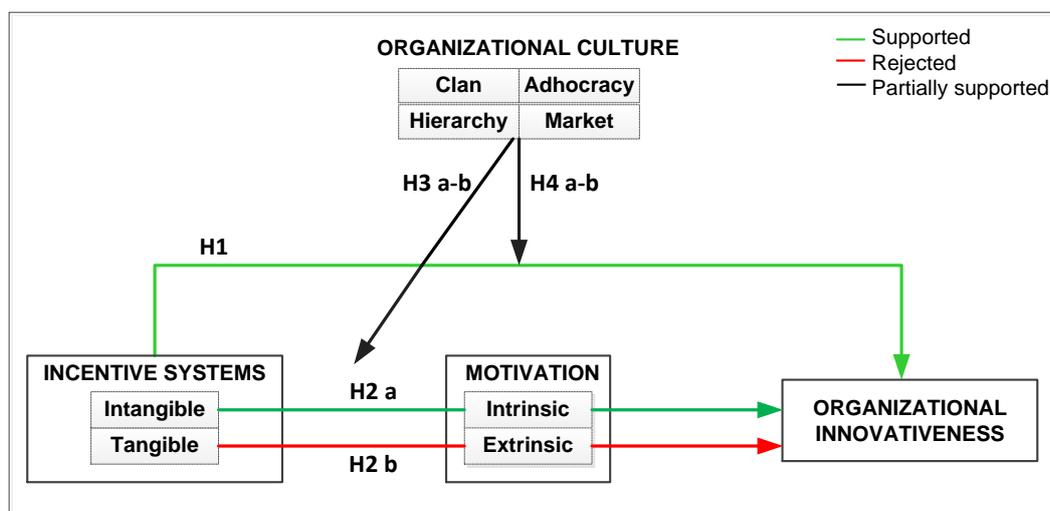
Figure 22. Results of hypotheses testing

First of all, both intangible and tangible incentives are positively linked to organizational innovativeness, though, as hypothesized, intangible incentives are found to have a higher positive connection. This supports a notion that intrinsic approach to management should not ignore extrinsic rewards. Managers should strive towards a system that balances between these approaches. Both of the incentive systems seem to have their downfalls and advantages and therefore the preferred approach to

designing an effective incentive system could be combining the best aspects of both systems. Reasonable amount of base pay and various fringe benefits are, without a doubt, necessary to attract and keep qualified employees, but managers should avoid controlling their subordinates with tangible rewards by binding performance appraisal solely to them. After all, employees tend to commit to an organization based on how they are treated there, instead of a specific pay system.

In their extensive meta-analysis, Deci et al. (1999a) came to the conclusion that intangible incentives had a positive effect on intrinsic motivation while tangible rewards had an opposite effect. However, the results of this study show that both intangible and tangible incentives have a positive relationship on intrinsic motivation, though the link between latter is much smaller. Kerr and Slocum (1987) have suggested that clan culture is linked to a reward system where mentor-like superiors give feedback and recognition to their employees on a frequent basis. They also point out that performance-based pay system and overall quantitative performance measurement are related to market cultures. The findings of this thesis seem to support these suggestions, as a positive relationship between intangible incentives and intrinsic motivation is found to be greater in flexible clan and adhocracy cultures, whereas, market culture is strongly correlated with extrinsic motivation. A significant negative dependency is found between control-oriented hierarchy culture and intangible incentives. It seems that flexible and flatter organizational structures foster intangible incentives which motivate employees by communicating that managers are paying attention and acknowledging effort, commitment and continuous learning. It is also found that intrinsic motivation indeed mediates the relationship between intangible incentives and organizational innovativeness.

The clear majority of respondents identify flexible clan and adhocracy culture types as their primary organizational cultures. The innovative and fast growing ICT industry is connected to adhocracy culture where staying

on the cutting edge and prospecting new opportunities are valued. This is quite evident, as many software and game developing companies are known for their creative approaches related to work environment and HRM practices. The industry group of architectural and engineering activities, including technical testing and analysis, is positively correlated with clan culture. This is probably because the majority of organizations representing this industry are quite small design and consultancy agencies, where people have the conditions to feel family-like connections. Metal industry relates positively to competitive and results-oriented market culture, which might be the result of intense market competition.

The results show that adhocracy culture is most positively correlated with organizational innovativeness, while the relationship is negative in case of hierarchy culture. The finding supports the basic assumptions of these particular culture types identified by the Competing values framework (Quinn and Rohrbaugh, 1983). In addition, when examining the relationships between different organizational cultures and innovativeness, Büschgens et al. (2013) found that organizational focus on innovation was most strongly and positively related to the presence of adhocracy culture, then to clan culture and market culture. In line with the results of this thesis, they also found that organizational focus on innovation was negatively related to the presence of a hierarchical culture. Interestingly, clan culture was found to be negatively linked to organizational innovativeness in this study, which is a divergent finding when reflected to the existing literature and theories.

Flexible organizational structures and related transformational leadership facilitate the development and implementation of new ideas. Firms with the advantage of flexibility tend to perform better at innovating than rigidly structured and controlled firms (Ahmed, 1998). This study has found positive relationship between intangible incentives and organizational innovativeness to be the greatest in the context of clan culture, then in

hierarchy culture, market culture, and lastly in adhocracy culture. The placements of monitored hierarchy culture as second and innovative adhocracy culture as the last in these relationships are quite abnormal.

An interesting finding is that the amount of employees who left the company during a last year is positively dependent on market culture. Since a stereotypical market culture can be characterized by a high level of competition, and demanding and whip-cracking managers, a well-being of employees may be questioned. Thus, employees who do not withstand a hard-driving environment created by prominent market culture do not commit to the company. Staying on top and outpacing the competition should not rule out the well-being and involvement of employees. In fact, firms that highlight the participation of employees generate a return on investment almost twice as great as corporations that lack these values (Denison, 1984).

Market culture is found to have a positive connection with the age of a company, while adhocracy culture is linked to younger firms. These findings support the notion of Quinn and Cameron (1983) which states that organizational cultures often follow organization's life cycle in a predictable pattern. While organizations tend to be dominated by adhocracy culture in their earliest, entrepreneurial stages, organizations facing the mature stage habitually focus on market culture where external competitiveness and relationships are emphasized. The competitive market culture is also found to be positively related to the level of revenue of a company. The fact that the extent of company's operations is linked to market culture seems to support the results of Desphandé et al. (1993), who state that business performance is at the highest level in market cultures, emphasizing competitiveness and market superiority.

8.1 Managerial implications

The results of this study have generated several implications and suggestions. Both incentive systems were found to have a positive connection to organizational innovativeness, though the relation was stronger in case of intangible incentives that are also positively related to intrinsic motivation. The findings support the notion that relying solely on tangible rewards and extrinsic motivation most probably will not lead to long-lasting increases in employees' effort, commitment and creativity. Taking into consideration the prevalence of knowledge-intensive heuristic work, compensation systems should better acknowledge the capabilities related to strategic reasoning skills, research skills, and skills of personal leadership and proactivity.

The most important thing for managers to keep in mind is that different incentive systems should have a good fit with the organization. The optimal design of incentives and ratio between tangible and intangible incentives is highly dependent on contextual factors, and the first step in designing an effective incentive plan is to determine which incentives are right for the specific company and its employees. It is also important to keep the reward and recognition systems effective by staying flexible in the range of used recognition items and actions. This way the recognition will not become perceived as directly performance-contingent and employees will not get indifferent to it.

In order to keep employees intrinsically motivated, ambitious, and creative, tasks assigned to them should have a level of challenge that corresponds with employee's potential. Challenges that are neither too easy nor too difficult for the employee are considered an important prerequisite for enjoyable, intrinsically-motivated behavior that may lead to a mental state called flow. Increasing organization's efficiency is the responsibility of managers and should start at the management level. Because of this, it is important that managers realize how attitudes and motivation can be

managed. Multiple empiric studies highlight that intrinsic motivation requires supportive circumstances to thrive, as it is quite easily disrupted by various unsupportive conditions. Nonetheless, intrinsic motivation can be increased considerably by even subtle changes in organization's environment. Since intrinsic motivation is one of the building blocks of creativity, it can be an effective way to pursue higher level of innovativeness. The performance and abilities of employees can also be improved by proper recruitment and selection process, job placement and rotation, as well as participation, training, and development. According to Denison (1984), firms that highlight the participation of employees generate a return on investment almost twice as great as corporations that lack participative values.

Based on the sociological perspective that is applied in this study, it is believed that organizational culture can be measured, managed and changed through strategic action and implementation plans. A saying "*What can be measured can be understood; what can be understood can be controlled; and what can be controlled can be improved.*" is quite apt in describing the perspective of this study. Quinn (1988) has developed a competency framework based on the CVF which advices managers how to reach a desired type of an organizational culture (see Figure 23). Because it is vastly assumed that flexible culture types (clan and adhocracy) are most favorable forms for organizations that want a committed personnel and strive for innovativeness, leaders should embody the characteristics of facilitator, mentor, innovator and broker, instead of monitor, coordinator, director and producer. In order to increase traits of clan culture in the organization, managers should strive to understand and meet employee needs, promote team work and participation, support and recognize team players, foster better morale through empowerment, provide chances for self-management and create higher levels of trust among the personnel. This does not mean that employees are not expected to work hard and carry their responsibilities, and that stretch goals are not considered important. To increase

innovative adhocracy culture, manager should make the organization more forward-looking, clarify a vision of the future, encourage and celebrate risk taking, foster creative alternatives and innovation, and make change welcomed. This again does not mean taking unnecessary and unadvised risks, and abandoning careful analysis and projections. In order to steer away from hierarchy culture, organization should eliminate useless rules, directives, paperwork and procedures, and push decision making and involvement down the organizational structures. To manage change away from market culture, measures and financial indicators should be given slightly less centrality and more attention should be addressed to motivating people and adapting to human needs instead of market needs exclusively.
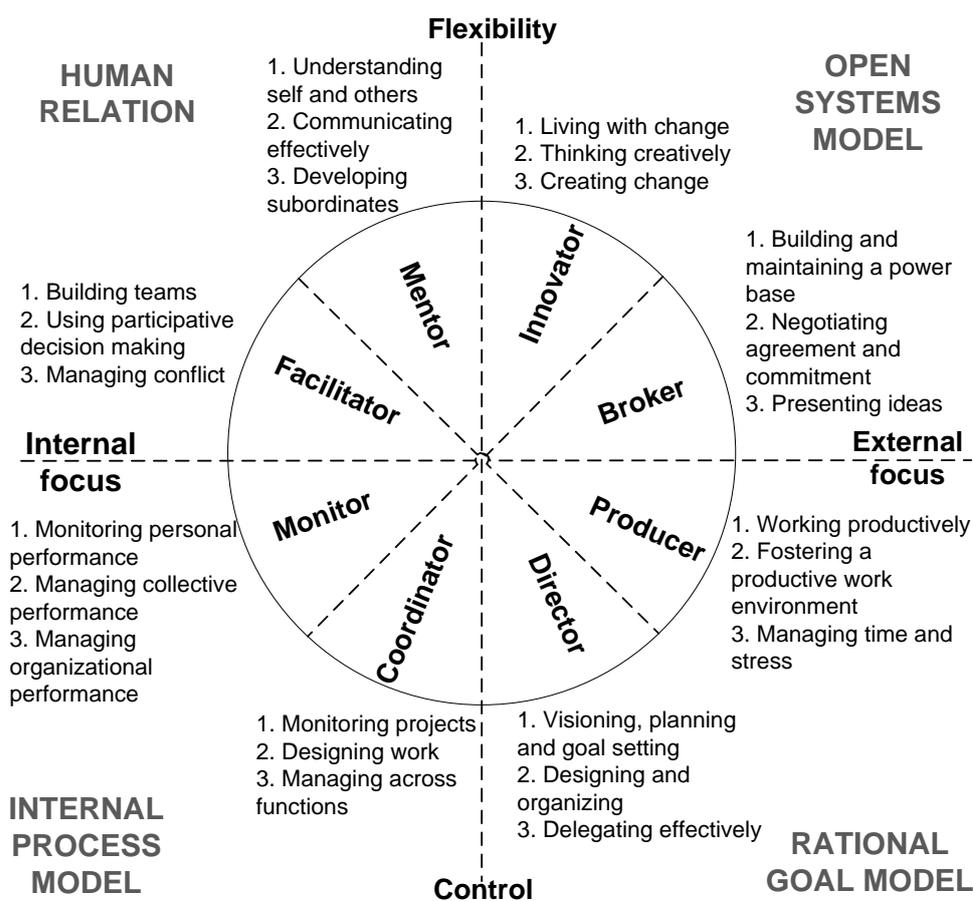
Figure 23. Competencies and the leadership roles in the CVF (adapted from Quinn, 1988, 48)

8.2 Limitations of this study and suggestions for further research

First of all, this research does not separate between the concepts of organizational *culture*, which is said to be rooted in anthropology studies, and organizational *climate*, which is rooted in the field of psychology (Denison, 1996; van Muijen et al., 1999). Though some researchers (e.g. Schwartz and Davis, 1981; Trice and Beyer, 1993) support the opinion that organizational culture can only be measured through qualitative study methods whereas climate is measured quantitatively, other researchers (e.g. Cameron and Quinn, 2006; Denison, 1996; Hofstede, 1998; Hofstede et al., 1990; van Muijen et al., 1999) see no fundamental objections to measuring culture by quantitative questionnaires. This study supports the latter view and interprets both the culture and climate concepts as a common phenomenon which addresses the creation and influence of social contexts in organizations (Denison, 1996, 645-646). Even though detecting and describing organizational cultures is traditionally associated with in-depth qualitative approaches – which provide a more comprehensive and in-depth information – in order to investigate and compare multiple organizational cultures and provide generalizable results, a quantitative approach must be used (Cameron and Quinn, 2006, 149). According to Jung et al. (2009) a trend toward quantitative approaches can be clearly identified and self-report questionnaires are the most prominent approach to exploring organizational culture. This trend is probably due to the consultancy background of many popular authors and instruments within the field of organizational culture.

Secondly, this study concentrates on examining situational motivation instead of a relatively enduring and stable general motivation, which is mostly dependent of individual's personality traits. Though general motivation may also influence situational motivation and behavior, this research focuses on observing intrinsic and extrinsic motivation as a result of the situational factors that may promote or inhibit them (Abuhamdeh

and Csikszentmihalyi, 2009). According to the self-determination theory (Deci and Ryan, 1985) extrinsic motivation can be further divided to four different types that vary from externally controlled to relatively autonomous (Gagné and Deci, 2005). This research concentrates only on one of these types of extrinsic motivation, which is the most externally regulated, because it is the most obvious one to be observed by the respondents. The most significant limitation of this thesis with regards of studying work motivation of personnel is that the questionnaire is directed only to company representatives working at the executive level. Evaluating work motivation of personnel is based on the subjective perceptions and observations of the company managers. The actual personnel and employees working in different organizational levels might have a better say on what in fact motivates them and what type of extrinsic motivation they are experiencing, but involving both the managers and personnel of the sample companies would make the research too complex and time-consuming for an independent master's thesis work. Incentive systems and organizational culture could be differently perceived depending on the position inside the company. Cameron and Quinn (2006, 79) noticed from the results of their research that top managers tend to rate the culture as more clan-focused than managers at lower levels of hierarchy.

Because the sampling is done from technology-based companies operating in Finland, the results may not be generalizable to other industries or countries. The results of this study are most probably valid in the context of technology-related companies in the Nordic countries, as well as other economies and national cultures similar to Finland. This is because the members of these cultures could share similar values to Finland concerning what constitutes an effective leadership and what type of organizational practices, including incentive systems, are most welcomed by the employees.

More in-depth results about organizational culture types and their effects could be gained by applying the original and more extensive

Organizational Culture Assessment Instrument (OCAI), which measures the strength of different cultures types. Organizational value systems and therefore also cultures are often not simple and one-sided, and cannot be classified absolutely by only one cultural quadrant. Organizations often internalize values from different cultural quadrants with an emphasis on one or two of them. Therefore, giving respondents an opportunity to distribute a certain amount of points between the four culture types could bring forward interesting differences in cultural strength and combinations.

Further research on organizational culture and its effects could also be conducted to various organizational sub-units instead of an entire organization. Different departments are often observed to have their own subcultures that may differ from the extended organizational culture. In fact, sometimes subunits that represent a strong adhocracy culture exist in larger organizations that have a dominant culture of a different type. Concentrating on different organizational sub-units could also shed more detailed light on the relationship between incentives and work motivation. This is because people working in different departments may have quite differing work tasks from each other – some may concentrate on more creative tasks and others may work on quite straightforward and repetitious tasks. As it is known, intangible incentives and intrinsic motivation are particularly linked to heuristic tasks, whereas tangible incentives and extrinsic motivation may be fully sufficient in algorithmic tasks.

Follow-up research could also be conducted by investigating relationships between organizational culture, incentives, motivation and innovativeness in other national cultures than Finnish. Since national culture has an effect on organizational culture, it could be interesting to study how hierarchical and controlled organizational structures and HRM practices related to them would be perceived by members of high power distance national cultures versus low power distance cultures.

REFERENCES

Abuhamdeh, S. and Csikszentmihalyi, M. (2009) Intrinsic and Extrinsic motivational orientations in the competitive context: An examination of person-situation interactions. *Journal of Personality*. 77 (5), 1615-1635.

Ahmed, P. K. (1998) Culture and climate for innovation. *European Journal of Innovation Management*. 1 (1), 30-43.

Amabile, T. M. (1993) Motivational Synergy: Toward new conceptualization of intrinsic and extrinsic motivation in the workplace. *Human Resource Management Review*. 3 (3), 185-201.

Amabile, T. M. (1996). Creativity and Innovation in Organizations. *Harvard Business School*. January 5.

Amabile, T. M (1997) Entrepreneurial creativity through motivational synergy. *The Journal of Creative Behavior*. 31 (1), 18-26.

Amabile, T. M. (1998). How to kill creativity. *Harvard Business Review*. 76 (5), 77-87.

Amabile, T. M., Conti, R., Coon, H., Lazenby J. and Herron, M. (1996) Assessing the work environment for creativity. *Academy of Management Journal*. 39 (5), 1154-1184.

Ankli R.E. and Palliam R. (2012) Enabling a motivated workforce: Exploring the sources of motivation. *Development and learning in organizations*. 26 (2), 7-10.

Anon. (2008) Feeling Valued is the best motivation: Perks and Pay incentives cannot beat feeling needed. *Human Resource Management International Digest*. 16 (3), 28-31.

Antoni, C. H., Berger, A., Baeten, X., Verbruggen, A., Emans, B., Hulkko, K., Vartiainen, M., Kessler, I. and Neu, E. (2005) Wages and working conditions in the European Union [e-publication]. Dublin: European Foundation for the Improvement of Living and Working Conditions. [Accessed 28.3.2014] Available at: http://www.eurofound.europa.eu/publications/htmlfiles/ef05106.htm

Bass, B. M. (2000) The future of leadership in learning organizations. *The Journal of Leadership Studies*. 7 (3), 18-40

Barney, J. B. (1986) Organizational culture: Can it be a source of sustained competitive advantage? *Academy of Management Review*. 11 (3), 656-665.

Baumeister, R. F. and Leary M. R. (1995) The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*. 117 (3), 497-529.

Becton, J. B., Giles, W. F. and Schraeder, M. (2008) Evaluating and Rewarding OCBs: Potential Consequences of Formally Incorporating Organizational Citizenship Behaviour in Performance Appraisal and Reward Systems. *Employee Relations.* 30 (5), 494-514

Beer, M., and Cannon, M. (2004). Promise and peril in implementing pay-for-performance. *Human Resource Management.* 43 (1), 3–48.

Belassi,W., Kondra, A. Z. and Tukel, O. I. (2007) New product development projects: The effect of organizational culture. *Project Management Journal.* 38 (4), 12-24.

Berson, Y., Oreg, S. and Dvir, T. (2008) CEO values, organizational culture and firm outcomes. *Journal of Organizational Behavior.* 29 (5), 615-633.

Buckler, S. A. (1997) The spiritual nature of innovation. *Research Technology Management.* 40 (2), 43-47

Burroughs, J. E., Dahl, D. W., Moreau, C. P., Chattopadhyay, A. and Gorn, G. (2011) Facilitating and Rewarding Creativity During New Product Development. *Journal of Marketing.* 75 (1), 53-67.

Bushardt, S. C., Glascoff, D. W. and Doty, D. H. (2011) Organizational culture, formal reward structure, and effective strategy implementation. *Journal of Organizational culture, communications and conflict.* 15 (2), 57-70.

Büschgens, T., Bausch, A., and Balkin D. (2013) Organizational culture and innovation: A meta-analysis review. *Journal of Product Innovation Management.* 30 (4), 763-781.

Böckerman, P., Bryson, A. and Ilmakunnas, P. (2012) Does high involvement management improve worker wellbeing? *Journal of Economic Behavior and Organization.* 84 (2), 660-680.

Cameron, K. S. and Quinn, R. E. (2006) Diagnosing and changing organizational culture: based on the competing values framework (revised edition). San Francisco, CA: Jossey-Bass.

Chandler G. N., Chalon, K. and Douglas, W. L. (2000) Unraveling the determinants and consequences of an innovative-supportive organizational culture. *Entrepreneurship Theory and Practice.* Fall, 59-76

Chhokar, J. S., Brodbeck, F. C. and House, R. J. (Eds.) 2008. Culture and leadership across the world: The GLOBE book of in-depth studies of 25 societies. Psychology Press. New York.

Cho Y. J. and Perry J. L. (2011) Intrinsic motivation and employee attitudes: Role of managerial trustworthiness, goal directedness, and extrinsic reward expectancy. *Review of Public Personnel Administration.* 32 (4), 382-406.

Cinar, O., Bektas, C. and Aslan, I. (2011) A motivation study on the effectiveness of intrinsic and extrinsic factors. *Economics and management.* 16 (5), 690-695.

Claman, P.H. (1998) Work has changed but our compensation programmes have not. *Compensation and Benefits Management.* 14 (1), 1-6.

Claver, E., Llopis, J., Garcia, D. and Molina, H. (1998) Organizational culture for innovation and new technological behavior. *The Journal of High-Technology Management Research.* 9 (1), 55-68.

Crush, P. (2007) Perk power. *Human Resources.* August, 41-44.

Daft, R. L. (1978) A dual-core model of organizational innovation. *Academy of Management Journal.* 21 (2), 193-210.

Damanpour, F. (1991) Organizational innovation: A meta-analysis of effects of determinants and moderators. *Academy of Management Journal* 34 (3), 555-90.

Damanpour, F. (1996) Organizational complexity and innovation: Developing and testing multiple contingency models. *Management Science* 42 (5): 693-716.

Damanpour, F. and Wischnevsky, J. D. (2006) Research on innovation in organizations: Distinguishing innovation-generating from innovation adopting organizations. *Journal of Engineering and Technology Management.* 23 (4), 269-291.

Dastmalchian, A., S. Lee, and I. Ng. (2000) The interplay between organizational and national cultures: A comparison of organizational practices in Canada and South Korea using the competing values framework. *International Journal of Human Resource Management* 11 (2), 388-412

Deal T. E. and Kennedy, A. A. (1982) Corporate Cultures: The Rites and Rituals of Corporate Life. Reading, MA: Addison-Wesley

Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology*. 18 (1), 105-115.

Deci, E. L. (1975) Intrinsic motivation. New York: Plenum.

Deci, E. L. and Ryan, R. M. (1985). Intrinsic motivation and self-determination in human behavior. New York: Plenum.

Deci, E. L. and Ryan, R. M. (2000) The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry.* 11 (4), 227-268

Deci, E. L., Ryan, R. M. and Koestner, R. (1999a) A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin.* 125 (6), 627- 668.

Deci, E. L., Ryan, R. M. and Koestner, R. (1999b) The undermining effect is a reality after all – extrinsic rewards, task interest, and Self-Determination: Reply to Eisenberger, Pierce, and Cameron (1999) and Lepper, Henderlong, and Gingras (1999). *Psychological Bulletin.* 125 (6), 692-700.

Denison, D. (1984) Bringing corporate culture to the bottom line. *Organizational Dynamics.* 13 (2), 5-22.

Denison, D. R. (1996) What is the difference between organizational culture and organizational climate? A native's point of view on a decade of paradigm wars. *Academy of Management Review.* 21 (3), 619-654.

Desphandé, R., Farley, J. U. and Webster, F. E. Jr. (1993) Corporate culture, customer orientation, and innovativeness in Japanese firms: A quadrad analysis. *Journal of Marketing.* 57 (1), 23-27

de Witte and van Muijen (1999a) Organizational culture. *European Journal of Work and Organizational Psychology.* 8 (4), 497-502.

Diaz, M. and Gomez-Mejia, L. (1997) The effectiveness of organization-wide compensation strategies in technology intensive firms*. Journal of High Technology Management Research.* 8 (2), 301-315.

Easterby-Smith, E., Malina, D., and Yuan, L. (1995). How culture-sensitive is HRM? A comparative analysis of practice in Chinese and UK companies. *International Journal of Human Resource Management.* 6 (1), 31-59.

Eisenberger, R., Rhoades, L. and Cameron, J. (1999) Does pay for performance increase or decrease perceived self-determination and intrinsic motivation*? Journal of Personality and Social Psychology.* 77 (5), 1026-1040.

Elizur, D., Borg, I., Hunt, R. and Beck, I. M. (1991) The structure of work values: A cross cultural comparison. *Journal of Organizational Behavior.* 12 (1), 21-38.

Employer Branding Today (2011) Mitä nuoret toivovat työelämältä? [What young people wish from the working life?] [Website]. Universum's annual student research. [Accessed 28.3.2014] Available at: http://www.employerbrandingtoday.com/fi/2012/03/05/mita-nuoret-toivovat-tyoelamalta/

Eurostat 2014. Europe in figures – Eurostat yearbook: 10. Research and communication. European Commission [Online publication]. [Accessed 12.3.2014]. Available at: http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Europe_in_figures_-_Eurostat_yearbook

Festré, A. and Garrouste, P. (2008) Self-determination and incentives: a new look at the crowding out effect [Working paper]. [Accessed 18.4.2014] Available at: http://195.220.190.202/Pierre_Garrouste/SDT%20and%20crowding%20out%20effect%20AF_PG_2008.pdf

Festinger L. (1954) A theory of social comparison processes. *Human Relations.* 7 (2), 117-140.

Finnish Customs 2014. NACE/TOL standard industrial classification [Website]. [Retrieved 6.2.2014]. Available at: http://www.tulli.fi/en/finnish_customs/statistics/classifications/nace/index.jsp

Freeman, J. and Engel, J. S. (2007) Models of innovation: Startups and mature corporations. *California Management Review.* 50 (1), 94-119.

Frey, B. S. and Osterloh, M. (2005) Yes, managers should be paid like bureaucrats. Journal of Management Inquiry. 14 (1), 96-111.

Gagné, M. and Deci, E. L. (2005) Self-determination theory and work motivation. *Journal of Organizational Behavior.* 26 (4), 331-362

Gagné, M. and Forest, J. (2008) The Study of Compensation Systems Through the Lens of Self-Determination Theory: Reconciling 35 Years of Debate. *Canadian Psychology.* 49 (3), 225-232.

Gordon, G.G. (1991) Industry determinants of organizational culture. *Academy of Management Review.* 16 (2), 396-415.

Guay, F., Vallerand, R. J. and Blanchard, C. (2000) On the Assessment of Situational Intrinsic and Extrinsic Motivation: The Situational Motivation Scale (SIMS). *Motivation and Emotion.* 24 (3), 175-213.

Hair, J. F., Anderson, R. E., Tatham, R. L. and Black, W. C. (1998) Multivariate data analysis. New Jersey: Prentice Hall.

Han, T.-S. and Shen, C.-H. (2007) The effects of bonus systems on firm performance in Taiwan's high-tech sector. *Journal of Comparative Economics.* 35 (1), 235-249

Harden, E., Kruse, D. and Blasi, J. (2010) Who has a better idea? Innovation, shared capitalism, and human resources policies. In D.L. Kruse, R.B. Freeman and J.R. Blasi (eds): Shared Capitalism at Work: Employee Ownership, Profit and Gain Sharing, and Broad-Based Stock Options. Chicago, IL: The University of Chicago Press.

Harrison, R. (1987). Harnessing personal energy: How companies can inspire employees. *Organizational Dynamics.* 16 (1), 5-20.

Heikkilä, T. (2008) Tilastollinen tutkimus. Helsinki: Edita Prima Oy.

Hennessey, H., Perrewe, P. and Hochwater, W. (1992). Impact of benefit awareness on employee and organisational outcomes: A longitudinal field examination. *Benefits Quarterly.* 8 (2), 90-96.

Herzberg, F. (1966) Work and the nature of man. Cleveland, OH: World.

Herzberg, F. (1987) One more time: How do you motivate employees? *Harvard Business Review.* 65 (5), 109-120.

Hirsjärvi, S., Remes, P. and Sajavaara, P. (2000) Tutki ja kirjoita [Explore and write]. Helsinki: Tammi.

Hofstede, G. (1994) The business of international business is culture. *International Business Review.* 3 (1), 1-14.

Hofstede, G. (1995). Multilevel research of human systems: Flowers, bouquets and gardens. *Human Systems Management.* 14, 207-217

Hofstede, G. (1998) Attitudes, values and organizational culture: Disentangling the concepts. *Organization Studies.* 19 (3), 477-492.

Hofstede, G., Neuijen, B., Ohayv, D. D. and Sanders, G. (1990) Measuring Organizational Cultures: A Qualitative and Quantitative Study across Twenty Cases. *Administrative Science Quarterly.* 35 (2), 286-316.

Holmström, B. and Milgrom, P. (1990) Regulating trade among agents. *Journal of Institutional and Theoretical Economics*. 146 (1), 85-105.

House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W. and Gupta, V. [editors] (2004) Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies. Thousand Oaks: Sage Publications.

Howard, L. W. (1998) Validating the competing values model as a representation of organizational culture. *International Journal of Organizational Analysis*. 6 (3), 231-250.

Huff, C. (2007) Motivating the world. *Workforce Management*. 86 (16), 25-31

Hämäläinen, U. (2014) Insinööri Pekka Lonka kertoo, kuinka Nokian ihme luotiin ja tuhottiin [Engineer Pekka Lonkka tells how the wonder of Nokia was created and destroyed]. *Helsingin Sanomat: Kuukausiliite.* 3/2014, 52-59. Also available as an e-publication: http://www.hs.fi/kuukausiliite/a1393557253575

Ilmakunnas, P. and Maliranta, M. (2005) Technology, labour characteristics and wage-productivity gaps. *Oxford Bulletin of Economics and Statistics*. 67 (5), 623-645.

Im, S., Montoya, M. M. and Workman, J. P. Jr. (2012) Antecedents and consequences of creativity in product innovation teams. *Journal of Product Innovation Management*. 30 (1), 170-185.

Ireland, R. D., Kuratko, D. F. and Morris, M. H. (2006). A health audit for corporate entrepreneurship: Innovation at all levels, Part 1. *Journal of Business Strategy*. 27 (2), 10-17.

Johnson, S. (2010) Where good ideas come from: The natural history of innovation. New York: Riverhead Books.

Jung, D. I., Chow, C. and Wu, A. (2003) The role of transformational leadership in enhancing organizational innovation: Hypotheses and some preliminary findings. *Leadership Quarterly*. 14 (4-5), 525-544.

Jung, T., Scott, T., Davies, H., Bower, P., Whalley, D., McNally, R. and Mannion, R. (2009) Instruments for exploring organizational culture: A review of the literature. *Public Administration Review.* 69 (6), 1087–1096.

Kalmi, P. and Kauhanen, A. (2008) Workplace innovations and employee outcomes: Evidence from Finland. *Industrial Relations.* 47, 430-459.

Kandel, E. and Lazear, E. (1992) Peer pressure and partnerships. *Journal of Political Economy*. 100 (4), 801-817.

Kanter, R. M. (1987) The attack on pay. *Harvard Business Review*. 65 (2), 60-67.

Kanter, R. M. (1988) When a thousand flowers bloom: Structural, collective, and social conditions for innovation in organizations. *Research in Organizational Behavior.* 10, 169-211.

Kanter, R. (1989) The New Managerial Work. *Harvard Business Review.* 89 (6), 85-92.

Kauhanen, J. (2012) Henkilöstövoimavarojen johtaminen [Human resource management]. Helsinki: Sanoma Pro

Kerr, J. and Slocum, J. W. Jr. (1987) Managing corporate culture through reward systems. *Academy of Management Executive*. 1 (2), 99-108.

Keskin, H. 2006. Market orientation, learning orientation, and innovation capabilities in SMEs: An extended model. *European Journal of Innovation Management.* 9 (4), 396-417

Kessler, I. and Purcell, J. (1991). Performance related pay: objectives and application. *Human Resource Management Journal.* 2 (3), 16-33.

Lachance, J.R. (2000) International symposium of the International Personnel Management Association. *Public Personnel Management*. 29 (3), 305-313.

Lehto, A.-M. and Sutela, H. (2009) Three Decades of Working Conditions: Findings of Finnish Quality of Work Life Surveys 1977–2008. Helsinki: Statistics Finland [e-publication]. [Retrieved: 13.3.2014]. Available at: http://www.stat.fi/tup/julkaisut/tiedostot/working_conditions.pdf

Li, L. and Roloff, M. E. (2007) Organizational culture and compensation systems: An examination of job applicants' attraction to organizations. *International Journal of Organizational Analysis*. 15 (3), 210-230.

Liu A. M. M., Chiu W. M. and Fellows R. (2007) Enhancing commitment through work wmpowerment. *Engineering, Construction and Architectural Management.* 14 (6), 568-580.

Locke, L. F., Silverman, S. J. and Spirduso, W. W. (2010) Reading and Understanding Research (3rd ed.). Thousand Oaks: Sage Publications.

London, C. and Higgot, K. (1997) An employee reward and recognition process. *The TQM Magazine.* 9 (5), 328- 335.

Locke, E. A., and Latham, G. P. (1990). A theory of goal setting and task performance. Englewood Cliffs, NJ: Prentice-Hall.

Lowe, K. B., Kroeck, K. G., and Sivasubramaniam, N. (1996) Effectiveness correlates of transformational and transactional leadership: A meta-analytic review. *Leadership Quarterly.* 7 (3), 385-425.

Lloréns Montes, F. J., Ruiz Moreno, A., and García Morales, V. (2005) Influence of support leadership and teamwork cohesion on organizational learning, innovation and performance: An empirical examination. *Technovation.* 25 (10), 1159-1172.

March, J. G. (1991) Exploration and exploitation in organizational learning. *Organization Science.* 2 (1), 71-87.

Marsden, D. (2004). The role of performance-related pay in renegotiating the 'effort bargain'—the case of the British public service. *Industrial and Labor Relations Review.* 57 (3), 350-370.

Marsden, D . and Richardson, R. (1994) Performing for pay? The effects of "merit pay" on motivation in a public service. *British Journal of Industrial Relations.* 32 (2), 219-242.

Martin, J. (1992) Cultures in organizations: Three perspectives. New York: Oxford University Press.

Martins, E. C. and Terblanche, F. (2003) Building organizational culture that stimulates creativity and innovation. *European Journal of Innovation Management.* 6 (1), 64-74.

Maslow, A. H. (1954) Motivation and personality. New York: Harper and Row.

Maslow, A. H. (1970) Motivation and personality (second edition). New York: Harper and Row

Metsämuuronen, J. (2003) Tutkimuksen tekemisen perusteet ihmistieteissä [The basics of conducting research in social sciences]. Jyväskylä: Gummerus Kirjapaino.

Miles, R., Snow, C., Meyer, A. and Coleman, H. (1978) Organizational strategy, structure, and process. *Academy of Management Review.* 3 (3), 546-562.

Milne P. (2007) Motivation, Incentives and Organisational Culture. *Journal of Knowledge Management.* 11 (6), 28-38.

Ministry of Education and Culture (2013) PISA 2012: Proficiency of Finnish youth declining. Press releases [e-publication]. [Retrieved 13.3.2014]. Available at: http://www.minedu.fi/OPM/Tiedotteet/2013/12/pisa.html?lang=en

Miron, E., Erez, M. and Naveh, E. (2004) Do personal characteristics and organizational values that promote innovation, quality, and efficiency compete or complement each other? *Journal of Organizational Behavior.* 25 (2), 175-199.

Molero, F., Cuadrado, I., Navas, M. and Morales, J. F. (2007) Relations and effects of transformational leadership: a comparative analysis with traditional leadership styles. *The Spanish Journal of Psychology.* 10 (2), 358-368.

Neal, A., West, M. and Patterson, M. (2005) Do organizational climate and competitive strategy moderate the relationship between human resource management and productivity? *Journal of Management.* 31 (4), 492–512.

OECD (2011) OECD Guide to Measuring the Information Society 2011. OECD Publishing [e-publication]. [Accessed 6.2.2014]. Available at: http://browse.oecdbookshop.org/oecd/pdfs/free/9311021e.pdf

OECD (2014) Trade Union Density. OECD StatExtracts [Website]. [Accessed 28.3.2014] Available at: http://stats.oecd.org/Index.aspx?DataSetCode=UN_DEN

Ogbonna, E. and Harris, L. C. (2003) Innovative organizational structures and performance: A case study of structural transformation to groovy community centers. *Journal of Organizational Change.* 16 (3), 512-533.

Ouchi, W. G. 1979. A conceptual framework for the design of organizational control mechanisms. *Management Science.* 25 (9), 833-848.

Ouchi, W. G. (1980) Markets, bureaucracies, and clans. *Administrative Science Quarterly.* 25 (1), 129–141.

Park, R. and Kruse, D. (2014) Group incentives and financial performance: the moderating role of innovation. *Human Resource Management Journal.* 24 (1), 77-94.

Paoli, P. and Merllié, D. (2001) EWCS: Third European Survey on Working Conditions 2000 [e-publication]. Dublin: European Foundation for The Improvement of Living and Working Conditions. [Accessed 28.3.2014] Available at: http://www.eurofound.europa.eu/publications/htmlfiles/ef0121.htm

Peters, T. and Waterman. R. (1982) In Search of Excellence. New York: Harper and Row

Pettigrew, A. (1979) On studying organizational cultures. *Administrative Science Quarterly*. 24 (4), 570-581.

Pfeffer, J., and Viega, J. F. (1999) Putting people first for organizational success. *Academy of Management Executive.* 13 (2), 37-48.

Pink, D. H. (2011) Drive: The surprising truth about what motivates us. New York: Canongate

Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H. and Fetter, R. (1990) Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviours. *Leadership Quarterly.* 1 (2), 107-142.

Poskela, J. and Martinsuo, M. (2009) Management control and strategic renewal in the front end of innovation. *Journal of Product Innovation Management.* 26 (6), 671-684.

Pouliakas, K. and Theodossiou, I. (2012) Rewarding carrots and crippling sticks: Eliciting employee preferences for the optimal incentive design. *Journal of Economic Psychology*. 33 (6), 1247-1265.

Prendergast, C. (1999) Provision of incentives in firms. *Journal of Economic Literature*. 37 (1), 7–63.

Quinn, R. E. (1988) Beyond rational management. San Fransisco: Jossey-Bass.

Quinn, R. E. and Cameron, K. S. (1983) Organizational life cycles and shifting criteria of effectiveness: Some preliminary evidence. *Management Science.* 29 (1), 33-51.

Quinn, R. E. and Rohrbaugh. J. (1983) A spatial model of effectiveness criteria: Towards a competing values approach to organizational analysis. *Management Science.* 29 (3), 363-377.

Richard, O., McMillan, A., Chadwick, K. and Dwyer, S. (2003) Employing an innovation strategy in racially diverse workforces. *Group and Organization Management. 28* (1), 107-126.

Rivaldy, S., Raymond, L. and Verreault, D. (2006) "Resource-based view and competitive strategy: An integrated model of the contribution of information technology to firm performance". *Journal of Strategic Information Systems.* 15 (1), 29-50.

Rubera, G. and Kirca, A. H. (2012) Firm innovativeness and its performance outcomes: a meta-analytic review and theoretical integration. *Journal of Marketing.* 76 (3), 130-147.

Ryan, R. M. (1995) Psychological needs and the facilitation of integrative processes. *Journal of Personality.* 63 (3), 397-427

Ryan, R. M. and Deci, E. L. (2000a) Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemporary Educational Psychology.* 25, 54-67.

Ryan, R. M., and Deci, E. L. (2000b) Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist.* 55 (1), 68-78

Rynes, S.L. (1987) Compensation strategies for recruiting. *Topics in Total Compensation.* 2 (2), 185-196.

Saffold, G. S. III. (1988) Culture traits, strength and organizational performance: Moving beyond "strong" culture. *Academy of Management Review.* 13 (4), 546-558.

Sainio, L.-M., Ritala, P. and Hurmelinna-Laukkanen, P. (2012) Constituents of radical innovation - exploring the role of strategic orientations and market uncertainty. *Technovation.* 32 (11), 591-599.

SAK (2011) Statistics about Finland 2011 [Website]. [Accessed 28.3.2014] Available at: http://www.sak.fi/materials/statistics/statistics-about-finland-2011

Sathe, V. (1983) Implications of corporate culture: A manager's guide to action. *Organizational Dynamics.* 12 (2), 4-23.

Salvato, C. (2009) Capabilities unveiled: The role of ordinary activities in the evolution of product development processes. *Organization Science.* 20 (2), 384-409.

Sammer, J. (2007), Weighing pay incentives: Incentive plans should motivate employees to perform at a higher level, not encourage them to engage in questionable behavior. *HR Magazine.* 52 (6), pp. 64-69.

Sarros, J. C., Cooper, B. K. and Santora, J. C. (2008) Building a climate for innovation through transformational leadership and organizational culture. *Journal of Leadership and Organization Studies.* 15 (2), 145-58.

Saunders, M., Lewis, P. and Thornhill, A. (2009) Research methods for business students (5th ed). Harlow: Prentice Hall.

Schein, E. H. (1984) Coming to a new awareness of organizational culture. *Sloan Management Review.* 25 (2), 3-16

Schein, E. H. (1996) Culture: The missing concept in organization studies. *Administrative Science Quarterly.* 41 (2), 229-240

Schumpeter, J.A. (1975) Capitalism, socialism and democracy. New York : Harper and Row

Schwatz, H., and Davis, S. (1981). Matching corporate culture and business strategy. *Organizational Dynamics.* 10 (1), 30-38.

Secretariat of the Economic Council (2007) Recruitment problems, labour supply and worker's mobility [e-publication]. Prime Minister's Office Publications 17/2007. [Accessed 28.3.2014] Available at: http://vnk.fi/julkaisukansio/2007/j05-17-rekrytointiongelmat-tyovoiman-tarjonta/pdf/en.pdf

Shameer, B. (1990) Calculations, values and identities: the source of work motivation. *Human Relations.* 43 (1), 313-332.

Sheldon, K. M., Ryan, R. M., Deci, E. L. and Kasser, T. (2004). The independent effects of goal contents and motives on well-being: it's both what you pursue and why you pursue it. *Personality and Social Psychology Bulletin.* 30 (4), 475–486.

Sokro E. (2012). Analysis of the Relationship that Exists between Organizational Culture, Motivation and Performance. *Problems of management in the 21st century.* 3 (1), 106-119.

Stajkovic, A. D. and Luthans, F. (2001) Differential effects of incentive motivators on work performance. *Academy of Management Journal.* 4 (3), 580-590.

Stajkovic, A. D. and Luthans, F. (2003) Behavioral management and task performance in organizations: Conceptual background, meta-analysis, and test of alternative models. Personnel Psychology. 56 (1), 155-194.

Statistics Finland (2009) Population projection 2009-2060 [e-publication]. Helsinki: Statistics Finland. [Accessed 28.3.2014] Available at: http://tilastokeskus.fi/til/vaenn/2009/vaenn_2009_2009-09-30_en.pdf

Statistics Finland (2012) Human resources of science and technology in 2010. Helsinki: Statistics Finland [e-publication]. [Retrieved: 13.3.2014]. Available at: http://www.stat.fi/til/tthv/2010/tthv_2010_2012-03-22_en.pdf

Statistics Finland (2013) Patenting 2012 [Internet document]. [Retrieved 6.2.2014]. Available at: https://www.stat.fi/til/pat/2012/pat_2012_2013-10-31_en.pdf

Suvorov, A. (2003) Addiction to rewards [e-publication]. [Accessed 10.4.2014] Available at: http://www.nes.ru/public-presentations/suvorov_js-08-12-03.pdf

Sørensen, J. B. 2002. The strength of corporate culture and the reliability of firm performance. *Administrative Science Quarterly.* 47 (1), 70–91.

T-Media (2008) Professionals-tutkimus: Työ on tärkeämpää yli viisikymppisille kuin nuoremmille [Professionals survey: Work is more important to people over the age of 50 than to younger] [Website]. [Accessed 28.3.2014] Available at: http://www.t-media.fi/professionals-tutkimus-tyo-on-tarkeampaa-yli-viisikymppisille-kuin-nuoremmille/

Tremblay, M. and Chenevert, D. (2008). Influence of compensation strategies in Canadian technology-intensive firms on organizational and human resources performance. *Group and Organization Management.* 33 (3), 269–302.

Tremblay, M. A., Blanchard, C. M., Taylor, S., Pelletier, L. G. and Villeneuve, M. (2009) Work extrinsic and intrinsic motivation scale: Its value for organizational psychology research. *Canadian Journal of Behavioral Science.* 41 (4), 213-226.

Triandis, H.C. (1995) Individualism and Collectivism. Boulder, CO: Westview

Trice, H.M., and Beyer, J.M. (1993) The culture of work organizations. NJ: Prentice Hall.

Truskie, S. (1999). Leadership in High-performance Organizational Cultures. Quorom Books

Van de Ven, A. H. (1986). Central problems in the management of innovation. *Management Science.* 32 (5), 590–607.

Van Muijen, J. J., Koopman, P., de Witte, K., De Cock, G., Susanj, Z, Lemoine, C., Bourantas, D., Papalexandris, N., Branyicski, I., Spaltro, E., Jesuino, J., Das Neves, J., Pitariu, H., Konrad, E., Peiró, J., González-Romá, V. and Turnipseed, D. (1999) Organizational culture: The focus questionnaire. *European Journal of Work and Organizational Psychology.* 8 (4), 551-568.

Vartiainen, J. (1998) The labour market in Finland: Institutions and outcomes [e-publication]. Prime Minister's Office Publications 2/1998. [Accessed 28.3.2014] Available at: http://vnk.fi/julkaisukansio/1998/j02-the-labour-market-in-Finland/pdf/en.pdf

Vartiainen, M. and Kauhanen, J. (2005) Palkitseminen globaalissa Suomessa [Rewarding in global Finland]. Helsinki: WSOY

Verhaeghe, A. and Kfir, R. (2002) Managing innovation in a knowledge intensive technology organization (KITO). *R&D Management.* 32 (5), 409–417.

Vroom, V. H. (1964). Work and motivation. New York: Wiley.

Walton R. E. (1985) From control to commitment in the workplace. *Harvard Business Review.* 63 (2), 77-84.

Wang, S., Guidice, R. M., Tansky, J. W. and Wang, Z. (2010) When R&D spending is not enough: The critical role of culture when you really want to innovate. *Human Resource Management.* 49 (4), 767–792.

Wattanasupachoke, T. (2012) Design thinking, innovativeness and performance: An empirical examination. *International Journal of Management and Innovation.* 4 (1), 1-14.

Weber, M. (1947) The Theory of Social and Economic Reform. New York: Free Press

Whiteling, I. (2007) A message from the frontline. *Marketing Week.* 30 (29), 35.

Wilkins, A. and Ouchi, W. (1983) Efficient cultures: Exploring the relationship between culture and organizational performance. *Administrative Science Quarterly.* 28, (6), 468-498

Williams, L. J. and Anderson, S. E. (1991) Job Satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors. *Journal of Management.* 17 (3), 601-617.

Wood, S. (1996) High commitment management and payment systems. *Journal of Management Studie*s. 33 (1), 53-77.

Woodman, R. W., Sawyer, J. E. and Griffin, R.W. (1993) Toward a theory of organizational creativity. *Academy of Management Review.* 18 (2), 293-321.

World at Work (2014) Total rewards model: What is total rewards? [Website]. [Accessed 28.3.2014] Available at: http://www.worldatwork.org/aboutus/html/aboutus-whatis.jsp

Wright, A. (2010) Culture and Compensation – Unpicking the intricate relationship between reward and organizational culture. *Thunderbird International Business Review*. 52 (3),189-202.

Yle News (2014) Fingersoftin mäkiautopeliä on ladattu jo yli 170 miljoona kertaa [Fingersoft's driving game has hit over 170 uploads]. Yle News, 2.4.2014. [Accessed 3.4.2014] Available at: http://yle.fi/uutiset/fingersoftin_makiautopelia_on_ladattu_jo_yli_170_miljoonaa_kertaa/7168989

Özsomer, A., Calantone, R. J. and di Benedetto, A. (1997) What makes firms more innovative? A look at organizational and environmental factors. Journal of Business and Industrial Marketing. 12 (6), 400-416.

APPENDICES

Appendix 1: Finnish industries included in the survey

Appendix 2: GLOBE project findings

Appendix 3: Work-force strategies

Appendix 4: Practices of successful organizations

Appendix 5: Findings of The Finnish Quality of Work Life Surveys

Appendix 6: Questionnaire

Appendix 7: Descriptive statistics

Appendix 8: Factor analyses

Appendix 9: Correlation matrix

Appendix 10: Moderation effect analyses

APPENDIX 1: Finnish industries included in the survey

ICT sector classification according to OECD (2011, 159)

```
ICT manufacturing industries
– 2610   Manufacture of electronic components and boards
– 2620   Manufacture of computers and peripheral equipment
– 2630   Manufacture of communication equipment
– 2640   Manufacture of consumer electronics
– 2680   Manufacture of magnetic and optical media
ICT trade industries
– 4651   Wholesale of computers, computer peripheral equipment and software
– 4652   Wholesale of electronic and telecommunications equipment and parts
ICT services industries
– 5820   Software publishing
– 6110   Wired telecommunications activities
– 6120   Wireless telecommunications activities
– 6130   Satellite telecommunications activities
– 6190   Other telecommunications activities
– 6201   Computer programming activities
– 6202   Computer consultancy and computer facilities management activities
– 6209   Other information technology and computer service activities
– 6311   Data processing, hosting and related activities
– 6312   Web portals
– 9511   Repair of computers and peripheral equipment
– 9512   Repair of communication equipment
```

Summary of the included industries and NACE Rev.2 rating

CODE	DESCRIPTION	MAIN INDUSTRY GROUP
24	Manufacture of basic metals	Metal industry*
25	Manufacture of fabricated metal products, except machinery and equipment	Metal industry*
26	Manufacture of computer, electronic and optical products	Electrical and electronics industry*
27	Manufacture of electrical equipment	Electrical and electronics industry*
28	Manufacture of machinery and equipment n.e.c.	Mechanical engineering industry*
29	Manufacture of motor vehicles, trailers and semi-trailers	Mechanical engineering industry*
30	Manufacture of other transport equipment	Mechanical engineering industry*
46.5	Wholesale of information and communication equipment	ICT**
58.2	Software publishing	ICT**
61	Telecommunications	ICT**
62	Computer programming, consultancy and related activities	ICT**
63.1	Data processing, hosting and related activities; web portals	ICT**
71.12	Engineering activities and related technical consultancy	Architectural and engineering activities; technical testing and analysis*
71.2	Technical testing and analysis	Architectural and engineering activities; technical testing and analysis*
95.1	Repair of computers and communication equipment	ICT**

* Based on Statistics Finland (2013),** Based on OECD (2011)

APPENDIX 2: The GLOBE project findings

Table A. Summarized findings on *cultural* dimensions.

		Finland		Nordic Europe (mean)	GLOBE (mean)	Cluster with max. value (mean)	Cluster with min. value (mean)
		score[7]	Ranking (out of 62)				
1. GENDER EGALITARIANISM	Society *practices*	3.35	31	3.71	3.37	Eastern Europe (3.84)	Middle East (2.95)
	Society *values*	4.24	45	4.82	4.51	Germanic Europe (4.91)	Middle East (3.65)
2. ASSERTIVENESS	Society *practices*	3.81	47	3.66	4.14	Germanic Europe (4.55)	**Nordic Europe (3.66)**
	Society *values*	3.68	35	3.56	3.82	Southern Asia (4.65)	Germanic Europe (3.07)
	Organizational *practices*	-	-	3.74	4.11	Southern Asia (4.39)	Nordic Europe (3.74)
	Organizational *values*	-	-	3.77	3.96	Anglo (4.36)	Middle East (3.24)
3. INSTITUTIONAL COLLECTIVISM	Society *practices*	**4.63**	**10**	4.88	4.25	**Nordic Europe (4.88)**	Latin America (3.86)
	Society *values*	**4.11**	**55**	4.08	4.72	Latin America (5.32)	**Nordic Europe (4.08)**
4. IN.GROUP COLLECTIVISM	Society *practices*	**4.07**	**54**	3.75	5.13	Southern Asia (5.87)	**Nordic Europe (3.75)**
	Society *values*	5.42	47	5.65	5.66	Latin America (6.06)	Germanic Europe (5.16)

*Continues on the following page

---

[7] Countries and clusters are scored on a 7-point scale, 1 being a minimum and 7 a maximum value

5. POWER DISTANCE	Society *practices*	4.89	47	4.54	5.17	Southern Asia (5,38)	**Nordic Europe (4,54)**
	Society *values*	2.19	60	2.55	2.75	Middle East (3.03)	Germanic Europe (2.51)
	Organizational *practices*	-	-	3.63	4.01	Southern Asia (4.41)	**Nordic Europe (3.63)**
	Organizational *values*	-	-	3.50	3.56	Middle East (4.04)	Germanic Europe (3.06)
6.UNCERTAINTY AVOIDANCE	Society *practices*	**5.02**	**8**	5.19	4.16	**Nordic Europe (5.19)**	Eastern Europe (3.56)
	Society *values*	3.85	53	3.76	4.62	Southern Asia (5.16)	Germanic Europe (3.46)
7.PERFORMANCE ORIENTATION	Society *practices*	3.81	46	3.92	4.10	Confucian Asia (4.58)	Eastern Europe (3.92)
	Society *values*	6.11	20	5.84	5.94	Latin America (6.24)	Confucian Asia (5.53)
8. FUTURE ORIENTATION	Society *practices*	**4.24**	**14**	3.85	3.85	Germanic Europe (4.40)	Eastern Europe (3.38)
	Society *values*	5.07	51	5.48	5.48	Sub-Saharan Africa (5.87)	**Nordic Europe (4.76)**
9. HUJMANE ORIENTATION	Society *practices*	3.96	35	4.17	4.09	Southern Asia (4.71)	Germanic Europe (3.55)
	Society *values*	**5.81**	**2**		5.42	-	-

Visualized *cultural* scores for the Nordic Europe cluster:

Nordic Europe
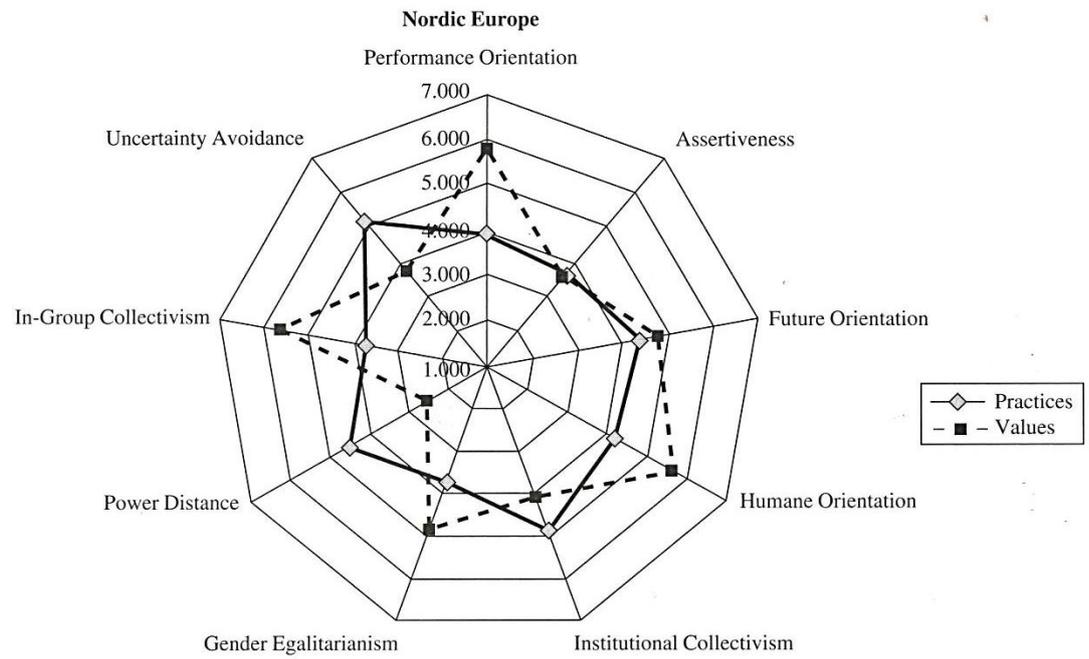
Summarized findings on the CLT *leadership* scores reported to be contributors to effective leadership:

Societal cluster	CLT Leadership Dimension					
	Charismatic/ Value-Based	Team Oriented	Participative	Humane Oriented	Autonomous	Self-Protective
Nordic Europe	**5.93**	5.77	5.75	4.42	3.94	**2.72**
Finland	*5.94*	*5.85*	*5.91*	*4.30*	*4.08*	*2.55*
Eastern Europe	5.74	5.88	5.08	4.76	4.20	3.67
Germanic Europe	5.93	5.62	5.86	4.71	4.16	3.03
Latin Europe	5.78	5.73	5.37	4.45	3.66	3.19
Anglo	6.05	5.74	5.73	5.08	3.82	3.08
Middle East	5.35	5.47	4.97	4.80	3.68	3.79
Southern Asia	5.97	5.86	5.06	5.38	3.99	3.83
Confucian Asia	5.63	5.61	4.99	5.04	4.04	3.72
Latin America	5.99	5.96	5.42	4.85	3.51	3.62
Sub-Saharan Africa	5.79	5.70	5.31	5.16	3.63	3.55

Visualized *leadership* CLT scores for the Nordic Europe cluster:

Countries: Denmark, Finland, and Sweden
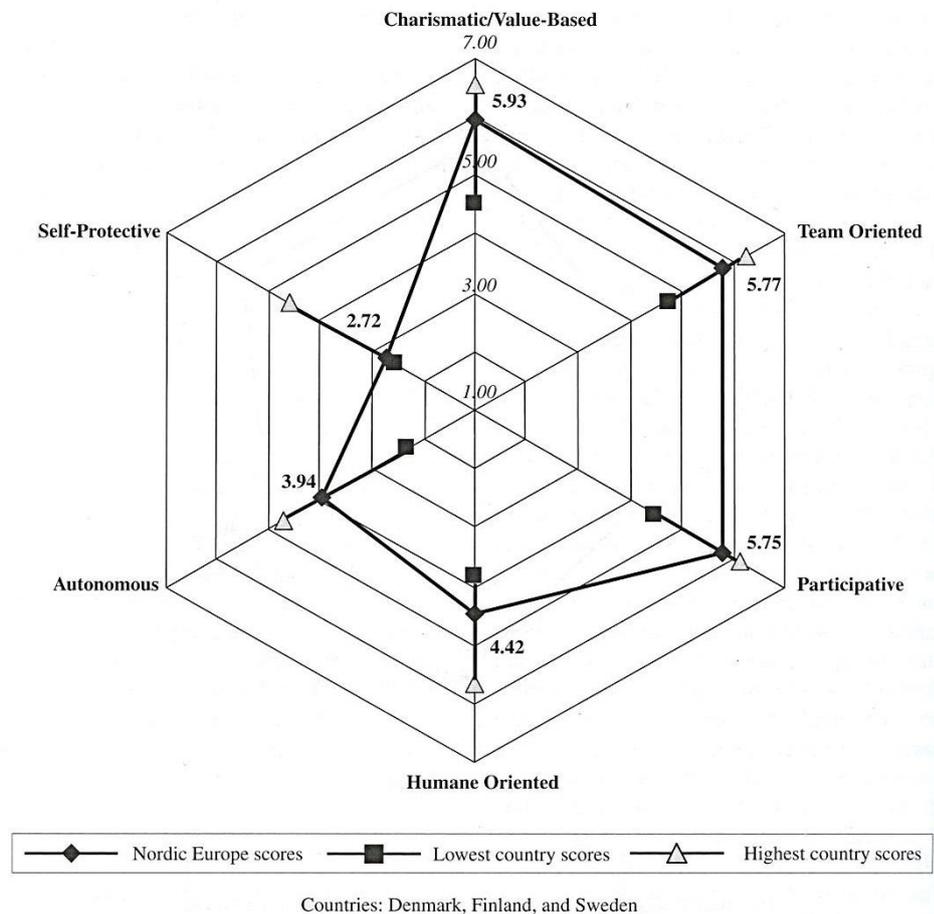
APPENDIX 3: Work-force strategies

	Control	Transitional	Commitment
Job design principles	Individual attention limited to performing individual job.	Scope of individual responsibility extended to upgrading system performance via participative problem-solving groups in QWL, EI, and quality circle programs.	Individual responsibility extended to upgrading systems performance.
	Job design deskills and fragments work and separates doing and thinking.	No change in traditional job design or accountability.	Job design enhances content of work, emphasizes whole task, and combines doing and thinking.
	Accountability focused on individual.		Frequent use of duties confident on changing conditions.
	Fixed job definition.		Flexible definition of duties, contingent on changing conditions.
Performance expectations	Measured standards define minimum performance. Stability seen as desirable.		Emphasis placed on higher, "stretch objectives", which tend to be dynamic and oriented to the marketplace.
Management organization: structure, systems, and style	Structure tents to be layered, with top-down controls.	No basic changes in approaches to structure, control, or authority.	Flat organization structure with mutual influence systems.
	Coordination and control rely on rules and procedures.		Coordination and control based more on shared goals, values, and traditions.
	More emphasis on prerogatives and positional authority.		Management emphasis on problem solving and relevant information and expertise.
	Status symbols distributed to reinforce hierarchy.	A few visible symbols change.	Minimum status differentials to de-emphasize inherent hierarchy.
Compensation policies	Variable pay where feasible to provide individual incentive.	Typically no basic changes in compensation concepts.	Variable rewards to create equity and to reinforce group achievements: gain sharing, profit sharing.
	Individual pay geared to job evaluation.		Individual pay linked to skills and mastery.
	In downturn, cuts concentrated on hourly payroll.	Equality of sacrifice among employee groups.	Equality of sacrifice.
Employment assurances	Employees regarded as variable costs.	Assurances that participation will not result in loss of job.	Assurances that participation will not result in loss of job.
		Extra effort to avoid layoffs.	High commitment to avoid or assist in reemployment.
			Priority for training and retraining existing work force.
Employee voice policies	Employee input allowed on relatively narrow agenda. Attendant risk emphasized. Methods include open-door policy, attitude surveys, grievance procedures, and collective bargaining in some organizations.	Addition of limited, ad hoc consultation mechanisms. No change in corporate governance.	Employee participation encouraged on wide range of issues. Attendant benefits emphasized. New concept of corporate governance.
	Business information distributed on strictly defined "need to know" basis.	Additional sharing of information.	Business data shared widely.
Labor-management relations	Adversarial labor relations; emphasis on interest conflict.	Thawing of adversarial attitudes; joint sponsorship of QWL or EI.	Mutuality in labor relations; joint planning and problem solving on expanded agenda.
			Unions, management, and workers redefine their respective roles.

(Adapted from Walton, 1985, 81)

APPENDIX 4: Practices of successful organizations

1. Employment security	Productivity improvements, innovations in work practices and new forms of cooperation between workers and management are not likely to be sustained over time if workers fear that by increasing productivity they will work themselves out of their jobs, thus employment assurances play a critical role in workers' free contribution of knowledge and their efforts to enhance productivity.
2. Selective hiring	Companies serious about obtaining profits through people, will take extra effort needed to ensure that they recruit the right people in the first place.
3. Self-managed teams and decentralization	One of the greatest payoffs from team-based organizations is that teams substitute peer-based control for hierarchical control of work.
4. Comparatively high compensation contingent on organizational performance	Such compensation can take a number of different forms, including gain sharing, profit sharing, stock ownership, pay for skill, or various forms of individual or team incentives.
5. Extensive training	Continuous learning, knowledge and intellectual capital are critical for success.
6. Reduction of status differences	Organizations perform at a higher level when they are able to tap the ideas, skill, and effort of all of their people. In order to help make all organizational members feel important and committed, most high commitment management systems attempt to reduce the status distinctions that separate individuals and groups and cause some to feel less valued.
7. Sharing information	The sharing of information on such things as financial performance, strategy, and operational measures conveys to the organization's people that they are trusted.

(Pfeffer and Viega, 1999)

APPENDIX 5: Findings of The Finnish Quality of Work Life Surveys

The importance of pay vs. contents in work:

	1984	1990	1997	2003	2008
Women, pay more important	45	39	36	36	33
Men, pay more important	57	53	51	48	46
Women, contents more important	54	59	65	63	67
Men, contents more important	42	45	48	51	54
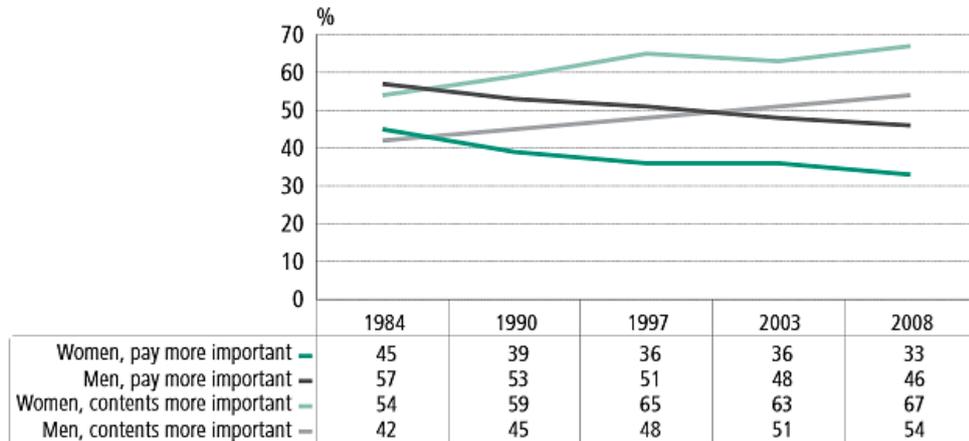
Importance of career advancement and self-development:

	Career advancement	Self-development
All	9	45
Women	10	49
Men	9	40
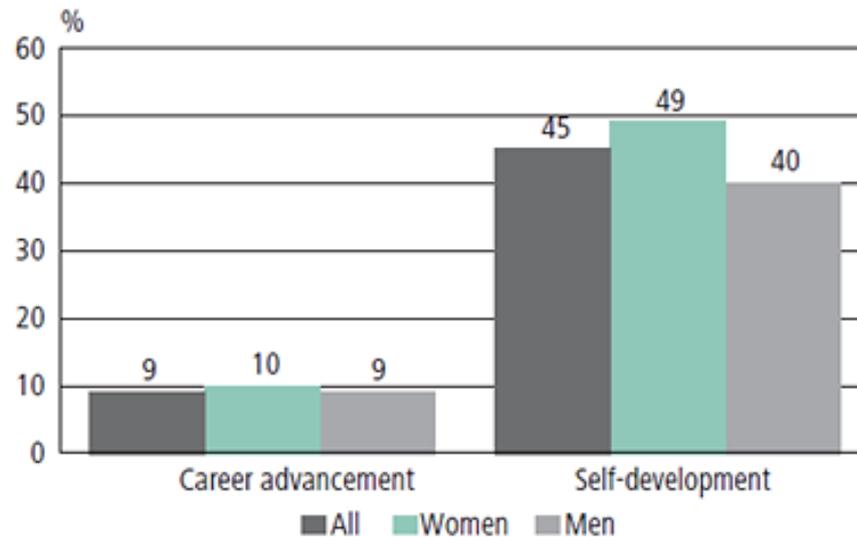
Opportunities for influencing own work:

	1984	1990	1997	2003	2008
Order of tasks	68	67	69	67	70
Working methods	58	63	65	64	65
Contents of tasks	25	37	40	41	40
Pace of work	59	64	57	55	57
Division of tasks between employees	25	29	31	31	33
Choice of working partners	12	18	19	18	19
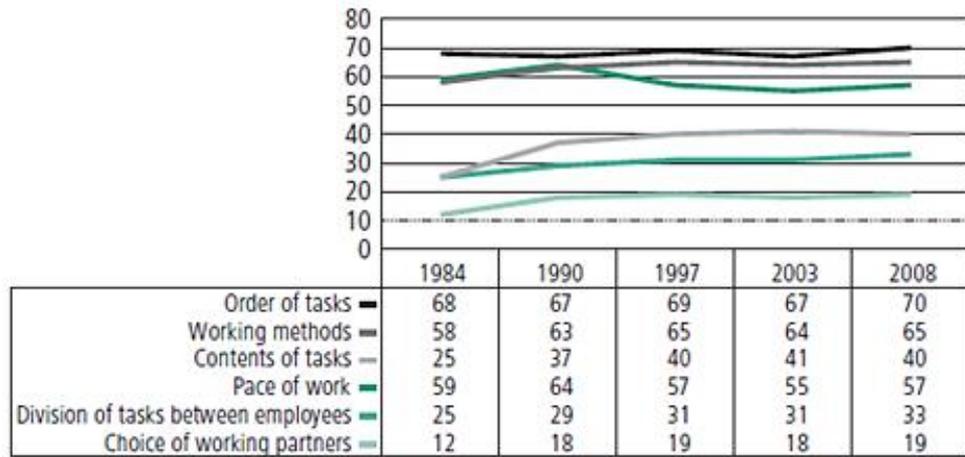
Monotony of work:
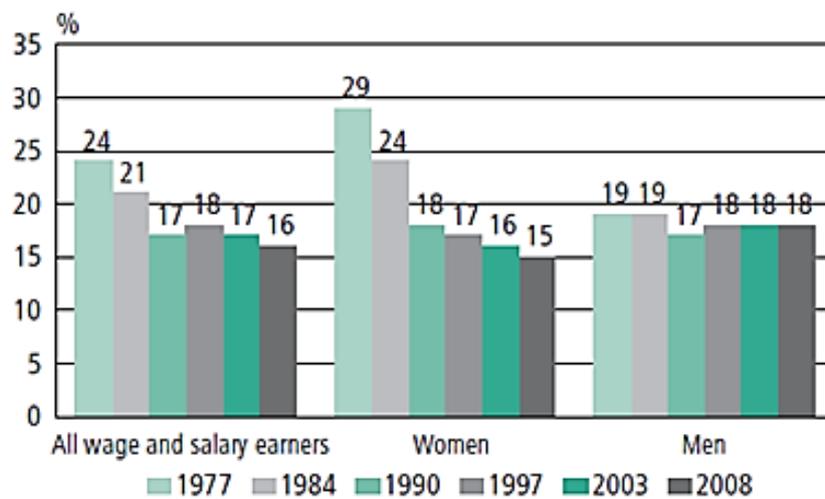
(Lehto and Sutela, 2009)

APPENDIX 6: Questionnaire

English version

This survey takes about 5 minutes to answer. It consists of six compact parts investigating your company's background information, work motivation of the personnel, reward policies, innovativeness, organizational culture, and lastly a couple short questions regarding respondent's background.

Part 1: BACKGROUND INFORMATION

Approximate figures and estimations of company's key figures are sufficient

1. When was your company founded? (Year)
2. Select the primary industry of your company:

24	Manufacture of basic metals
25	Manufacture of fabricated metal products, except machinery and equipment
26	Manufacture of computer, electronic and optical products
27	Manufacture of electrical equipment
28	Manufacture of machinery and equipment n.e.c.
29	Manufacture of motor vehicles, trailers and semi-trailers
30	Manufacture of other transport equipment
46.5	Wholesale of information and communication equipment
58.2	Software publishing
61	Telecommunications
62	Computer programming, consultancy and related activities
63.1	Data processing, hosting and related activities; web portals
71	Architectural and Engineering activities; technical testing and analysis
95.1	Repair of computers and communication equipment
Other, what:	

3. Turnover from the latest fiscal year. (Thousands of Euros)
4. R&D expenditure from the latest fiscal year. (Thousands of Euros)
5. Number of full-time personnel at the moment
6. Number of new employees hired during the last year
7. Number of employees who left the company during the last year

Part 2: WORK MOTIVATION OF PERSONNEL

Using the scale below, indicate to what extent each of the following items corresponds to your perceptions as a manager to primary reasons why your personnel are currently engaged with their work duties.

Answer each item according to the following scale: *1: does not correspond at all, 2: corresponds a little, 3: corresponds moderately, 4: corresponds a lot*

The personnel of our firm engage in their work duties primarily because…

1. …it provides them income.

2. …they value the security and stability of the employment relationship.

3. …they can earn a lot of money doing this work.

4. …they get good employee benefits.

5. …they experience a strong social bond with work community and colleagues.

6. …they derive much pleasure from learning new things.

7. …they enjoy confronting new challenges and solving them.

8. …they enjoy being successful at difficult work tasks.

9. …they perceive their work to be meaningful and fun.

Part 3: INCENTIVE POLICIES

Using the scale below, indicate how often each of the following reward policies is implemented in your company. Answer each item according to the following scale: *1: never, 2: seldom, 3: sometimes, 4: often*

In our company…

1. ...employee's base salary is increased if (s)he carries out her/his job duties well.

2. …personnel are offered pay-for-performance commission for achieving the predefined goals (e.g. sales commission, production commission).

3. …personnel are given various voluntary benefits (e.g. meal benefit, medical expenses insurance).

4. …team bonus is given to a group of employees based on reaching a group-based goal.

5. …company profit is shared with personnel when the profitability target is reached.

6. …personnel are offered company stock ownership or the stock option.

7. …personnel are rewarded for ingenuity and new ideas (e.g. improvement ideas, innovations).

8. …personnel are given personal praises and acknowledgements from their superiors.

9. …superiors and personnel meet for individual performance appraisal discussions.

10. …personnel are participated in designing and developing the reward and incentive systems

11. …different educational training programs and courses are provided for the personnel to further develop their skills and knowledge

12. …the management is flexible regarding work arrangements (e.g. working hours, leave of absence, telecommuting)

13. …existing personnel are given opportunities to advance in their careers and get a promotion inside the company

Part 4: INNOVATIVENESS OF THE FIRM

Organizational innovativeness is measured by both generation and adoption of innovations. Answer the questions according to the following scale: *1: not at all, 2: a little, 3: moderately, 4: a lot*

During the last 3 years, to what extent your firm has…

Technical innovations:
1. …introduced new product and service innovations to the market?

2. …brought to use products or services that are new to the firm?

3. …brought to use technologies or technical processes that are new to the firm? (e.g. input materials, equipment, work flow mechanisms)

Administrative innovations:
4. …brought to use administrative procedures that are new to the firm?

5. …brought to use organizational forms/structures that are new to the firm?

Cooperative innovation:
6. …collaborated with its customers or other organizations when developing innovations?

Personnel creativity:
7. …given its employees time and resources to pursue their creative ideas?

Part 5: ORGANIZATIONAL CULTURE

This is the last part of the actual research.

Please, rate each of the following alternatives (A-D) in descending order on a scale from 1 – 4 depending on the extent to which each description is similar to your own organization. (*1 being the most suitable description and 4 the least suitable description of your company*. Use each of the values between 1 and 4 once.)

A	**Firm as an extended family** The focus is on commitment, loyalty, participation, openness and mutual trust. Human development is emphasized and personnel are managed through mentoring and nurturing. Work is often done in teams and people tend to share a lot of themselves.
B	**Innovative and entrepreneurial** The emphasis is on being innovative and entrepreneurial, staying on the cutting edge and creating new challenges. Since the firm strives to be a product leader and innovator, trying new things and prospecting for opportunities are valued. Personnel represent freedom, uniqueness and risk taking.
C	**Competitive and results-oriented** The emphasis is set on outpacing the competition, hitting stretch targets, and winning in the marketplace. Personnel management is characterized by hard-driving competitiveness, high demands, results-orientation and focus on achievement.
D	**Controlled and efficient** The firm is characterized by strong control, and formal policies. The organization strives towards stability, predictability and smooth-running efficiency by being systematic and coordinated. Dependable delivery, smooth scheduling, and low-cost production are valued. Personnel management emphasizes conformity, efficiency and security of employment.

Part 6: RESPONDENT INFORMATION

1. Number of years within the company?

2. Your current position in the company?
   - Chief Executive Officer / Vice President
   - HR Director/Manager
   - Chief Operating Officer / Development Manager
   - Other, what?

3. Number of years in your current position?

Thank you for taking interest and participating in this study!

Please write your e-mail address below in case you want to get the research results when the study is completed. Your e-mail will not be associated with your responses, and your anonymity is guaranteed.

Kyselyyn vastaaminen vie noin 5 minuuttia. Kysely koostuu kuudesta lyhyestä osiosta, jotka käsittelevät yrityksen taustatietoja, henkilöstön työmotivaatiota, palkitsemiskäytäntöjä, innovatiivisuutta, organisaatiokulttuuria ja vastaajan asemaa yrityksessä.

Osa 1: YRITYKSEN TAUSTATIEDOT

Likimääräiset arviot yrityksen tunnusluvuista ovat riittäviä!

1. Perustamisvuosi
2. Pääasiallinen toimiala:

24	Metallien jalostus
25	Metallituotteiden valmistus (pois lukien koneet ja laitteet)
26	Tietokoneiden sekä elektronisten ja optisten tuotteiden valmistus
27	Sähkölaitteiden valmistus
28	Muiden koneiden ja laitteiden valmistus
29	Moottoriajoneuvojen, perävaunujen ja puoliperävaunujen valmistus
30	Muiden kulkuneuvojen valmistus
46.5	Tieto- ja viestintäteknisten laitteiden tukkukauppa
58.2	Ohjelmistojen kustantaminen
61	Televiestintä
62	Ohjelmistot, konsultointi ja siihen liittyvä toiminta
63.1	Tietojenkäsittely, palvelintilan vuokraus ja niihin liittyvät palvelut; Verkkoportaalit
71	Arkkitehti- ja insinööripalvelut; tekninen testaus ja analysointi
95.1	Tietokoneiden ja viestintälaitteiden korjaus
Muu, mikä:	

3. Liikevaihto viimeiseltä tilikaudelta. (Tuhansia euroja)
4. Tutkimus- ja kehitysmenot viimeiseltä tilikaudelta. (Tuhansia euroja)
5. Kokoaikaisen henkilöstön määrä:
6. Viimeisen vuoden aikana:

    yritykseen palkatun henkilöstön määrä:

    yrityksestä lähteneen henkilöstön määrä:

Osa 2: HENKILÖSTÖN TYÖMOTIVAATIO

Ilmoittakaa missä määrin alla listatut syyt vastaavat käsitystänne siitä miksi henkilöstönne osallistuu ja sitoutuu yrityksenne tarjoamiin työtehtäviin. Vastatkaa väittämiin käyttäen seuraavaa asteikkoa:
1: ei vastaa ollenkaan, 2: vastaa vähän, 3: vastaa kohtalaisesti, 4: vastaa paljon

Yrityksemme henkilöstö osallistuu ja sitoutuu tarjoamiimme työtehtäviin etupäässä siitä syystä, että…

1. …he saavat työstään toimeentuloa.

2. …he arvostavat työsuhteen tuomaa turvaa ja vakautta.

3. …he voivat ansaita paljon rahaa tekemällä tätä työtä.

4. …he saavat hyviä työsuhde-etuja.

5. …he kokevat vahvan sosiaalisen siteen työyhteisöön ja kollegoihinsa.

6. …he nauttivat uusien asioiden oppimisesta.

7. …he pitävät uusista haasteita ja niiden ratkomisesta.

8. …he kokevat mielihyvää onnistuessaan vaikeissa työtehtävissä.

9 … he kokevat työnsä mielekkääksi ja mukavaksi.

Osa 3: KANNUSTINJÄRJESTELMÄT

Arvioikaa missä määrin alla lueteltuja henkilöstön kannustamiseen ja palkitsemiseen liittyviä menettelytapoja toteutetaan teidän yrityksessänne. Vastatkaa käyttäen seuraavaa asteikkoa: *1: ei koskaan, 2: harvoin, 3: toisinaan, 4: usein.*

Meidän yrityksessämme…

1. ...työntekijän peruspalkkaa nostetaan hyvästä työsuorituksesta.

2. …henkilöstölle tarjotaan perinteisiä, ennalta määriteltyjä tulospalkkiomuotoja (esim. myyntiprovisio, tuotantopalkkio).

3. … henkilöstölle myönnetään erilaisia yritykselle vapaaehtoisia etuuksia (esim. ravintoetu ja sairaskuluvakuutus).

4. …työtiimeille annetaan ryhmäpalkkioita tavoitteiden saavuttamisesta.

5. …henkilöstölle jaetaan liikevoittoa kun yrityksen kannattavuustavoitteet saavutetaan.

6. …henkilöstölle tarjotaan yrityksen osakkeita tai osakeoptioita.

7. …henkilöstöä palkitaan kekseliäisyydestä ja uusista ideoista (esim. kehitysideat ja innovaatiot).

8. …esimiehet antavat työntekijöilleen henkilökohtaista kiitosta ja tunnustusta hyvin suoritetuista työtehtävistä.

9. …esimiehet ja henkilöstö tapaavat yksilöityjen kehityskeskustelujen tiimoilta.

10. …henkilöstöä osallistetaan palkkio- ja kannustinjärjestelmien suunnitteluun ja kehittämiseen.

11. …henkilöstölle tarjotaan erilaisia harjoittelu- ja koulutusmahdollisuuksia osaamisen kehittämiseksi.

12. …esimiehet ovat ymmärtäväisiä ja joustavia työjärjestelyissä (esim. työajat, lomat ja etätyöt).

13. …nykyiselle yrityksen henkilöstölle annetaan mahdollisuuksia edetä urallaan ja yletä firman sisällä.

Osa 4: YRITYKSEN INNOVATIIVISUUS

Innovatiivisuutta mitataan yrityksen kyvyllä omaksua innovaatioita ja toisaalta sen kyvyllä tuottaa innovaatioita.

Vastatkaa alla oleviin kysymyksiin käyttäen seuraavaa asteikkoa:

1: ei ollenkaan, 2: vähän, 3: kohtalaisen paljon, 4: erittäin paljon

Missä määrin yrityksenne on viimeisen kolmen vuoden aikana:

Tekniset innovaatiot:
1. Tuonut markkinoille uusia tuote- ja palveluinnovaatioita?

2. Ottanut käyttöön itselleen uusia tuotteita tai palveluita?

3. Ottanut käyttöön itselleen uusia tuotanto- tai palveluprosesseja (esim. uudet raaka-aineet, laitteet, työn- ja tiedonkulkujärjestelmät)?

Hallinnolliset innovaatiot:
4. Ottanut käyttöön uusia hallinnollisia menettelytapoja?

5. Ottanut käyttöön uusia organisaation muotoja ja rakenteita?

Innovaatioyhteistyö:
6. Tehnyt innovaatioyhteistyötä asiakkaidensa tai muiden organisaatioiden kanssa?

Henkilöstön luovuus:
7. Antanut työntekijöilleen aikaa ja resursseja tavoitella ja kehittää luovia ideoitaan?

Osa 5: ORGANISAATIOKULTTUURI

Arvioikaa alla esitettyjen kuvausten (A-D) yhtäläisyyttä yritykseenne ja merkitkää eri vaihtoehtojen sopivuus alenevassa järjestyksessä yhdestä neljään, niin että **1 = kaikkein sopivin kuvaus yrityksestänne ja 4 = vähiten sopiva kuvaus yrityksestänne.**

A	**Yritys suurperheenä**
	Tässä yrityksessä painotetaan sitoutumista, uskollisuutta, osallistamista, avoimuutta ja keskinäistä luottamusta. Ihmisten kehitystä korostetaan ja henkilöstöä johdetaan ohjaamalla ja tukemalla. Työtä tehdään usein ryhmissä ja ihmiset antavat paljon itsestään yritykselle.
B	**Innovatiivinen ja yrittäjähenkinen**
	Tässä yrityksessä painotetaan innovatiivisuutta, kehityksen kärjessä olemista, uusien haasteiden luomista ja yrittäjähenkisyyttä. Yritys pyrkii olemaan tuotejohtaja ja uuden kehittäjä, joten uusien mahdollisuuksien etsimistä ja kokeilemista arvostetaan. Henkilöstössä korostuvat vapaus, yksilöllisyys ja riskinottokyky.
C	**Kilpailullinen ja tuloshakuinen**
	Tässä yrityksessä painotetaan kilpailijoiden ohittamista, vaikeiden tavoitteiden saavuttamista ja johtoasemaa markkinoilla. Henkilöstön johtamisessa korostuvat kiivas kilpailuhenki, korkeat vaatimukset, tuloskeskeisyys ja saavutukset.
D	**Hallinnoitu ja tehokas**
	Yritykselle on ominaista vahva hallinnointi sekä muodolliset säännöt ja toimintatavat. Järjestelmällisyydellä pyritään vakauteen, ennustettavuuteen ja kitkattomaan tehokkuuteen. Luotettavia toimituksia, tasaista aikataulua ja halpatuotantoa arvostetaan. Henkilöstön johtamisessa korostetaan yhdenmukaisuutta, tehokkuutta ja työsuhteen pysyvyyttä.

Osa 6: VASTAAJAN ASEMA YRITYKSESSÄ

1. Kauanko olette työskennelleet yrityksessä? (vuosia)

2. Nykyinen asemanne yrityksessä:
   - Toimitusjohtaja tai varatoimitusjohtaja
   - Henkilöstöjohtaja tai -päällikkö
   - Liiketoimintajohtaja, operatiivinen johtaja tai kehitysjohtaja
   - Muu, mikä?

3. Kauanko olette toimineet nykyisessä asemassanne yrityksessä? (vuosia)

Suuri kiitos osoittamastanne kiinnostuksesta ja osallistumisestanne pro gradu -tutkimukseeni!

Merkitkää alla olevaan tekstikenttään sähköpostiosoitteenne mikäli haluatte vastaanottaa englanninkieliset tutkimustulokset, kun tutkimus on saatu päätökseen (arvioitu ajankohta kesällä 2014). Ilmoittamanne sähköpostiosoite käsitellään erillään kyselystä eikä sitä tulla missään tapauksessa liittämään vastauksiinne.

APPENDIX 7: Descriptive statistics

	N	Mis sing	Mean	Std. dev.	Variance	Range	Skew.	Kurt.
Firm age	424	0	24,12	20,329	413,282	178	2,890	13,966
Revenue (thousands)	424	0	58746,01	668052,532	4,463E+11	12708935	17,008	311,017
R&D expenditure (thousands)	388	36	916,03	5323,366	28338220,85	70000	9,401	99,760
Fulltime employees	422	2	258,92	3037,845	9228504,171	59000	17,838	337,219
Hired employees	413	11	7,18	25,407	645,516	344	8,896	97,182
Left employees	408	16	6,60	42,878	1838,506	822	17,197	323,648
Motivating income	422	2	3,45	,633	,401	3	-,790	-,120
Motivating security	421	3	3,27	,707	,500	3	-,755	,483
Motivating money	421	3	2,36	,812	,660	3	,161	-,447
Motivating benefits	419	5	2,33	,774	,599	3	,077	-,406
Motivating social bond	423	1	3,09	,730	,532	3	-,398	-,269
Motivating learning	423	1	3,07	,779	,607	3	-,539	-,101
Motivating challenges	423	1	3,11	,785	,616	3	-,523	-,326
Motivating difficult tasks	422	2	3,32	,681	,464	3	-,722	,299
Motivating meaningful work	422	2	3,25	,602	,362	3	-,230	-,196
Incentives base pay	423	1	2,68	,755	,569	3	-,356	-,086
Incentives pay for performance	424	0	2,50	1,117	1,248	3	-,007	-1,357
Incentives voluntary benefits	424	0	2,87	1,128	1,272	3	-,449	-1,239
Incentives team bonus	423	1	1,91	,931	,867	3	,724	-,430
Incentives company profit	423	1	2,31	1,206	1,455	3	,197	-1,533
Incentives stock option	422	2	1,59	,912	,832	3	1,399	,801
Incentives new ideas	424	0	2,35	,862	,743	3	,040	-,699
Incentives praises	421	3	3,35	,616	,379	2	-,382	-,661
Incentives appraisal	423	1	3,09	,898	,807	3	-,651	-,488
Incentives participation	422	2	1,95	,889	,791	3	,622	-,418
Incentives education	423	1	2,90	,814	,662	3	-,337	-,423
Incentives flexibility	423	1	3,68	,530	,281	2	-1,364	,905
Incentives promotion	424	0	2,88	,789	,623	3	-,286	-,395

Innovation new product to market	424	0	2,58	,858	,737	3	-,168	-,594
Innovation use of new products	424	0	2,74	,731	,534	3	,013	-,448
Innovation use of new processes	422	2	2,71	,785	,616	3	-,089	-,459
Innovation use of new administr.	423	1	2,51	,808	,653	3	,075	-,482
Innovation use of new structures	424	0	2,37	,826	,682	3	,187	-,474
Innovation collaboration	424	0	2,91	,797	,635	3	-,148	-,763
Innovation creativity	421	3	2,50	,780	,608	3	,223	-,399
Employment duration in firm	421	3	3,601	1,532	2,350	5	,233	-1,101
Employment duration in position	422	2	3,019	1,458	2,128	5	,687	-,436

APPENDIX 8: Factor analyses

A. Overview on factors of motivation, innovation, and incentives

Kaiser-Meyer-Olkin measure of sampling adequacy 0,876

Bartlett's test of sphericity Sig. 0,000

Rotated Factor Matrix[a]

	Factor		
	1	2	3
1 Motivating challenges	,877		
2 Motivating learning	,819		
3 Motivating difficult tasks	,806		
4 Motivating meaningful and fun	,626		
5 Motivating social bond	,486		
6 Innovation use of new process		,733	
7 Innovation use of new products		,702	
8 Innovation new product to market		,606	
9 Innovation use of new adm		,571	
10 Innovation collaboration		,565	
11 Innovation creativity		,501	
12 Innovation use of new org struct		,498	
13 Incentives pay for perform			,650
14 Incentives participation			,605
15 Incentives team bonus			,577
16 Incentives company profit			,517
17 Incentives perf appraisal			,514
18 Incentives education			,485
19 Incentives new ideas			,474
20 Incentives career advance			,438
21 Incentives base pay			,402
Cronbach's alpha	,867	,825	,793
Cumulative % of variance explained	25,250	35,513	42,266

(Deleted variables based on the previous factor analysis are: "motivating income", "motivating benefits", "motivating security", "incentives flexibility", "incentives stock option", and "incentives praises")

B. Incentives, two-factor solution

Kaiser-Meyer-Olkin measure of sampling adequacy 0,851

Bartlett's test of sphericity Sig. 0,000

	Factor	
	1	2
Incentives pay for perform	,726	
Incentives team bonus	,666	
Incentives new ideas	,450	
Incentives company profit	,430	
Incentives perf appraisal		
Incentives volunt benefits		
Incentives career advance		,634
Incentives education		,573
Incentives praises		,421
Incentives flexibility		
Incentives base pay		
Incentives stock option		
Cronbach's alpha	,658	,612
Cumulative % of variance explained	24,328	29,618

C. Motivation, two-factor solution

Kaiser-Meyer-Olkin measure of sampling adequacy 0,817

Bartlett's test of sphericity Sig. 0,000

	Factor	
	1	2
Motivating challenges	,901	
Motivating learning	,853	
Motivating difficult tasks	,807	
Motivating meaningful and fun	,655	
Motivating social bond	,506	
(Motivating security		,575)
(Motivating benefits		,417)
(Motivating income)		
(Motivating money)		
Cronbach's Alpha	,867	,466
Cumulative % of variance explained	34,807	42,312

APPENDIX 9: Correlation matrix

	1 Clan culture	2 Adhocracy culture	3 Market culture	4 Hierarchy culture	5 Intangible incentives	6 Tangible incentives	7 Intrinsic motivation	8 Extrinsic motivation	9 Innovativeness	10 Age of the firm	11 Revenue	12 Employees hired to the firm	13 Employees left the firm	14 Metal industry	15 Electrical and electronics	16 Mechanical engineering	17 ICT	18 Architectural and engineering activities
1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-,545**	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-,305**	-,234*	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-,387**	-,297**	-,166**	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	,083	,072	,003	-,196**	1	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-,004	,100	-,006	-,111*	,432**	1	-	-	-	-	-	-	-	-	-	-	-	-
7	,110*	,123*	-,163**	-,153**	,380**	,272**	1	-	-	-	-	-	-	-	-	-	-	-
8	,134**	-,051	-,077	-,048	,213**	,257**	,322**	1	-	-	-	-	-	-	-	-	-	-
9	-,164**	,325**	-,034	-,150**	,447**	,299**	,399**	,149**	1	-	-	-	-	-	-	-	-	-
10	0,36	-,153**	,124*	,033	-,008	-,105*	-,146**	-,043	-,074	1	-	-	-	-	-	-	-	-
11	-,026	-,121*	,165**	,039	,223**	,365**	-,024	,093	,115*	,489**	1	-	-	-	-	-	-	-
12	-,023	-,033	,075	,007	,209**	,240**	,144**	,052	,143**	,093	,450**	1	-	-	-	-	-	-
13	-,066	-,046	,144**	,020	,090	,165**	,051	,024	,079	,144**	,352**	,724**	1	-	-	-	-	-
14	,003	-,113*	,122*	,029	-,279**	-.157**	-,260**	-,101*	-,200**	,198**	,042	-,001	,077	1	-	-	-	-
15	-,024	-,020	,027	,033	-,020	,065	-,105*	-109*	,020	,057	,126**	,017	,014	-,148**	1	-	-	-
16	-,019	,015	-,024	,027	,015	-,003	-,089	,006	,079	,280**	,172**	,043	-,020	-,254**	-,117*	1	-	-
17	-,061	,110*	-,055	-,007	,223**	,171**	,346**	,146**	,270**	-,338**	-,136**	-,007	-,024	-,423**	-,195**	-,335**	1	-
18	,109*	-,013	-,063	-,073	,030	-,079	,011	-,007	-,208**	-,111*	-,128**	-,043	-,046	-,254**	-,117*	-,201**	-,335*	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

APPENDIX 10: The moderating impact of organizational culture

Table A. Model summary of the effect of control variables (revenue, firm age, industry groups) on motivation types and organizational innovativeness in different cultures

	R	R^2	Adj. R^2
Dependent variable: Intrinsic motivation			
Clan culture	,394	,155	,125
Adhocracy culture	,442	,195	,154
Market culture	,505	,255	,148
Hierarchy culture	,573	,328	,267
Dependent variable: Extrinsic motivation			
Clan culture	,243	,059	,025
Adhocracy culture	,203	,041	-,008
Market culture	,445	,198	,084
Hierarchy culture	,417	,174	,098
Dependent variable: Organizational innovativeness			
Clan culture	,377	,142	,111
Adhocracy culture	,403	,163	,120
Market culture	,486	,237	,122
Hierarchy culture	,448	,201	,130

Table B. The relationship between intangible incentives and intrinsic motivation in the context of different organizational cultures

Clan culture				
Dependent variable	**R**	**R^2**	**Adj. R^2**	
Intrinsic motivation	,490	,240	,207	
Independent variables	**B**	**beta**	**t**	**Sig.**
(Constant)	2,657		9,738	,000
Intangible incentives	,305	**,330**	4,394	**,000**
Revenue	-,019	-,045	-,581	,562
Firm age	-,003	-,135	-1,675	,096
Metal industry	-,270	-,228	-2,551	,012
Electrical and electronics industry	-,384	-,169	-2,275	,024
Mechanical engineering	-,156	-,114	-1,298	,196
ICT industry	-,039	-,036	-,402	,688
Adhocracy culture				
Dependent variable	**R**	**R^2**	**Adj. R^2**	
Intrinsic motivation	,525	,275	,231	
Independent variables	**B**	**beta**	**t**	**Sig.**
(Constant)	2,614		7,289	,000
Intangible incentives	,354	**,324**	3,753	**,000**
Revenue	-,095	-,234	-2,305	,023
Firm age	,006	,174	1,723	,088
Metal industry	-,131	-,089	-,815	,417
Electrical and electronics industry	,451	,192	2,108	,037
Mechanical engineering	,103	,073	,655	,514
ICT industry	,360	,329	2,772	,006
Market culture				
Dependent variable	**R**	**R^2**	**Adj. R^2**	
Intrinsic motivation	,540	,292	,171	
Independent variables	**B**	**beta**	**t**	**Sig.**
(Constant)	1,402		2,415	,020
Intangible incentives	,230	,235	1,470	,149
Revenue	,048	,199	,849	,401
Firm age	,000	,018	,083	,935
Metal industry	,305	,252	1,010	,318
Electrical and electronics industry	,344	,160	,841	,405
Mechanical engineering	,178	,106	,493	,624
ICT industry	,724	,555	2,529	,015
Hierarchy culture				
Dependent variable	**R**	**R^2**	**Adj. R^2**	
Intrinsic motivation	,617	,381	,314	
Independent variables	**B**	**beta**	**t**	**Sig.**
(Constant)	2,094		4,211	,000
Intangible incentives	,304	**,261**	2,347	**,022**
Revenue	-,007	-,016	-,150	,881
Firm age	-,006	-,125	-1,154	,253
Metal industry	,179	,114	,707	,482
Electrical and electronics industry	-,458	-,183	-1,407	,164
Mechanical engineering	,091	,052	,335	,739
ICT industry	,593	,412	2,415	,019

Table C. The relationship between tangible incentives and extrinsic motivation in the context of different organizational cultures

Clan culture				
Dependent variable	**R**	**R^2**	**Adj. R^2**	
Extrinsic motivation	,270	,073	,033	
Independent variables	**B**	**beta**	**t**	**Sig.**
(Constant)	2,415		5,575	,000
Tangible incentives	,142	,122	1,565	,119
Revenue	-,032	-,048	-,575	,566
Firm age	-,002	-,047	-,529	,597
Metal industry	-,159	-,086	-,870	,385
Electrical and electronics industry	-,424	-,125	-1,510	,133
Mechanical engineering	,134	,062	,637	,525
ICT industry	,168	,099	,999	,319
Adhocracy culture				
Dependent variable	**R**	**R^2**	**Adj. R^2**	
Extrinsic motivation	,373	,139	,087	
Independent variables	**B**	**beta**	**t**	**Sig.**
(Constant)	1,793		4,484	,000
Tangible incentives	,349	**,370**	3,641	**,000**
Revenue	-,014	-,028	-,246	,806
Firm age	-,003	-,071	-,632	,529
Metal industry	-,310	-,176	-1,491	,139
Electrical and electronics industry	-,525	-,171	-1,674	,097
Mechanical engineering	-,197	-,114	-,954	,342
ICT industry	-,199	-,150	-1,067	,288
Market culture				
Dependent variable	**R**	**R^2**	**Adj. R^2**	
Extrinsic motivation	,467	,218	,084	
Independent variables	**B**	**beta**	**t**	**Sig.**
(Constant)	,330		,544	,590
Tangible incentives	,177	,187	1,015	,316
Revenue	,157	,488	1,809	,078
Firm age	-,007	-,299	-1,300	,201
Metal industry	,258	,159	,651	,519
Electrical and electronics industry	,185	,064	,328	,745
Mechanical engineering	,482	,213	,984	,331
ICT industry	,370	,211	,927	,359
Hierarchy culture				
Dependent variable	**R**	**R^2**	**Adj. R^2**	
Extrinsic motivation	,506	,256	,175	
Independent variables	**B**	**beta**	**t**	**Sig.**
(Constant)	1,419		2,914	,005
Intangible incentives	,440	**,392**	2,873	**,006**
Revenue	-,007	-,015	-,112	,911
Firm age	-,011	-,178	-1,469	,147
Metal industry	,447	,237	1,270	,209
Electrical and electronics industry	-,431	-,143	-,980	,331
Mechanical engineering	,295	,140	,797	,428
ICT industry	,345	,199	1,030	,307

Table D. The relationship between intangible incentives and innovativeness in the context of different organizational cultures

Clan culture				
Dependent variable	**R**	**R^2**	**Adj. R^2**	
Organizational innovativeness	,547	,299	,269	
Independent variables	**B**	**beta**	**t**	**Sig.**
(Constant)	,700		2,611	,010
Intangible incentives	,419	**,442**	6,063	**,000**
Revenue	,054	,128	1,725	,086
Firm age	-,003	-,122	-1,587	,114
Metal industry	,201	,169	1,961	,052
Electrical and electronics industry	,123	,053	,746	,457
Mechanical engineering	,270	,195	2,311	,022
ICT industry	,212	,193	2,231	,027
Adhocracy culture				
Dependent variable	**R**	**R^2**	**Adj. R^2**	
Organizational innovativeness	,504	,254	,208	
Independent variables	**B**	**beta**	**t**	**Sig.**
(Constant)	1,468		4,219	,000
Intangible incentives	,365	**,346**	3,972	**,000**
Revenue	,015	,039	,386	,700
Firm age	-,004	-,140	-1,369	,174
Metal industry	,158	,113	1,023	,309
Electrical and electronics industry	,427	,190	2,065	,041
Mechanical engineering	,387	,286	2,551	,012
ICT industry	,356	,341	2,816	,006
Market culture				
Dependent variable	**R**	**R^2**	**Adj. R^2**	
Organizational innovativeness	,579	,335	,216	
Independent variables	**B**	**beta**	**t**	**Sig.**
(Constant)	1,123		1,961	,057
Intangible incentives	,364	**,385**	2,405	**,021**
Revenue	-,037	-,142	-,645	,523
Firm age	,006	,330	1,533	,133
Metal industry	,386	,327	1,323	,194
Electrical and electronics industry	,976	,339	2,013	,051
Mechanical engineering	,487	,299	1,367	,179
ICT industry	,662	,521	2,410	,021
Hierarchy culture				
Dependent variable	**R**	**R^2**	**Adj. R^2**	
Organizational innovativeness	,583	,340	,270	
Independent variables	**B**	**beta**	**t**	**Sig.**
(Constant)	1,009		2,598	,012
Intangible incentives	,383	**,428**	3,728	**,000**
Revenue	-,006	-,019	-,179	,859
Firm age	-,002	-,058	-,515	,608
Metal industry	,445	,371	2,202	,031
Electrical and electronics industry	,539	,276	2,095	,040
Mechanical engineering	,487	,358	2,267	,027
ICT industry	,584	,524	2,997	,004

Table E. The relationship between tangible incentives and innovativeness in the context of different organizational cultures

Clan culture				
Dependent variable	**R**	**R^2**	**Adj. R^2**	
Organizational innovativeness	,442	,195	,161	
Independent variables	**B**	**beta**	**t**	**Sig.**
(Constant)	1,337		5,294	,000
Tangible incentives	,179	**,242**	3,304	**,001**
Revenue	,087	,208	2,689	,008
Firm age	-,003	-,132	-1,608	,110
Metal industry	,122	,104	1,133	,259
Electrical and electronics industry	,090	,041	,537	,592
Mechanical engineering	,269	,194	2,160	,032
ICT industry	,267	,243	2,648	,009
Adhocracy culture				
Dependent variable	**R**	**R^2**	**Adj. R^2**	
Organizational innovativeness	,407	,166	,115	
Independent variables	**B**	**beta**	**t**	**Sig.**
(Constant)	2,237		7,156	,000
Tangible incentives	,039	,052	,521	,603
Revenue	,052	,132	1,187	,238
Firm age	-,005	-,166	-1,525	,130
Metal industry	,048	,035	,293	,770
Electrical and electronics industry	,402	,176	1,708	,090
Mechanical engineering	,380	,276	2,300	,023
ICT industry	,399	,376	2,706	,008
Market culture				
Dependent variable	**R**	**R^2**	**Adj. R^2**	
Organizational innovativeness	,513	,264	,131	
Independent variables	**B**	**beta**	**t**	**Sig.**
(Constant)	1,960		4,307	,000
Tangible incentives	,156	,226	1,196	,239
Revenue	-,026	-,099	-,402	,690
Firm age	,006	,302	1,331	,191
Metal industry	,165	,139	,576	,568
Electrical and electronics industry	,771	,268	1,527	,135
Mechanical engineering	,289	,177	,797	,430
ICT industry	,557	,439	1,952	,058
Hierarchy culture				
Dependent variable	**R**	**R^2**	**Adj. R^2**	
Organizational innovativeness	,512	,262	,183	
Independent variables	**B**	**beta**	**t**	**Sig.**
(Constant)	1,971		6,380	,000
Tangible incentives	,236	**,330**	2,456	**,017**
Revenue	-,048	-,154	-1,153	,253
Firm age	-,005	-,128	-1,080	,284
Metal industry	,388	,325	1,748	,085
Electrical and electronics industry	,607	,313	2,164	,034
Mechanical engineering	,556	,410	2,363	,021
ICT industry	,662	,594	3,108	,003