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Development of Elevator Installation Process from Workers' Commitment and Motivation Perspective

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Abstract

The fourth industrial revolution is shaping many assembly type of jobs. In the case company, sales of elevator units have recently increased faster than the number of installers. Contents of the job, company image, and perceptions of the tasks and career possibilities guide career decisions and development of installers. This study was conducted in a global company in the field of elevator industry, for a unit specialized in global installation. Elevator installers graduate from the company's own industrial institute, and work in assembly and installation tasks as long as they are physically able to do so. The installer base is homogenous, and perceptions of the job are often carried on to new applicants through peer networks. Also, the share of subcontracted installers has rapidly increased, which has affected the installers' job descriptions.

The situation is examined using interviews, observation, and discussions with several experts in the case company. The objective is to identify central factors affecting elevator installers' work motivation, and to detect development potential in the elevator installation process to make the job more meaningful and rewarding for the installers, and more appealing to the applicants. Increasing installers' work motivation and well-being is estimated also to promote recruitment success. Results of the study show that development of the installation process has significant potential to increase installers' motivation and commitment levels. Development areas are sorted into four categories based on job-specific subjects detected in the interview research. Areas regarding recruitment, installation process, compensation, and career development were discussed in light of arguments and findings based on literature and previous research. Suggestions for actions were presented and justified based on the conducted study.

As a result, a model of elevator installers' work motivation and factors affecting it, is constructed. It is used as a guideline for determining and presenting action proposals. Suggestions include focusing on the job image in recruitment development, shifting the reward model from quantity towards quality and reinforcing intrinsic rewards, as well as supporting of career development. Further research is recommended for payment model development, and subcontracted installers' experiences on the same subjects.

Keywords Work motivation, elevator installation, process development

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Tiivistelmä

Työelämä on neljännen teollisen vallankumouksen murroksessa, ja asennustyyppiset tehtävät ovat muuttamassa muotoaan. Hissiasennuksessa kohdeyrityksen myynti on kasvanut nopeammin kuin asentajien määrä. Työn sisältö, yrityksen imago sekä mielikuvat työstä ja urasta ohjaavat asentajien uravalintoja sekä -kehitystä. Tämä tutkimus toteutettiin maailmanlaajuisesti toimivassa hissiteollisuuden yrityksessä globaalien asennustoiminnan kehittämisen yksikölle. Hissiasentajat valmistuvat yrityksen omasta teollisuusoppilaitoksesta ja suorittava tehtäviä, kunnes se ei enää ole fyysisesti mahdollista. Asentajakanta on yksipuolinen, ja mielikuvat työstä sekä yrityksestä työnantajana välittyvät uusille työnhakijoille pitkälti vertaismarkkinoinnin kautta. Lisäksi alihankinnan osuus asennustyöstä on kasvanut nopeasti, mikä on aiheuttanut muutoksia työnkuviin.

Tilannetta tutkitaan haastattelujen, havainnoinnin, sekä yrityksen asiantuntijoiden avulla. Tavoitteena on löytää keskeiset hissiasentajan työmotivaatioon vaikuttavat tekijät, sekä potentiaaliset kehityskohdat hissiasennusprosessissa, jotta asennustyöstä saataisiin asentajan näkökulmasta mielekkäämpää sekä työnhakijan näkökulmasta houkuttelevampaa. Asentajien työhyvinvoinnin sekä -motivaation lisäämisen katsotaan edistävän myös rekrytoinnin kehitystä. Tutkimuksen tulokset osoittavat asennusprosessin kehityksen tärkeäksi asentajien työmotivaation ja sitoutumisen kannalta. Kehitysalueet jaetaan neljään kategoriaan perustuen tutkimuksessa havaittuihin asennustyöhön liittyviin aiheisiin. Rekrytoimiseen, asennusprosessiin, kompensaatioon sekä urakehitykseen liittyvistä kehitysalueista keskustellaan kirjallisuuteen sekä aiempiin tutkimuksiin perustuvien väitteiden pohjalta. Ehdotukset prosessien kehittämiseen sekä jatkotutkimukseen esitetään ja selitetään tehdyn tutkimuksen perusteella.

Tutkimuksen tuloksena luodaan hissiasentajan työmotivaatiota sekä siihen vaikuttavia tekijöitä kuvaava malli, jota käytetään ohjenuorana toimintasuositusten esittämiseksi. Ehdotukset liittyvät mielikuvavaikuttamiseen rekrytoinnissa, palkitsemiseen vaikuttavien elementtien suuntaamiseen määrästä laatuun, sisäisten palkintojen korostamiseen sekä urakehityksen tukemiseen. Jatkotutkimusta ehdotetaan palkkiomallin kehitykselle sekä alihankittujen asentajien kokemuksille samoista aiheista.

Avainsanat Työmotivaatio, motivaatio, rekrytointi, hissiasennus, prosessikehitys

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Hyvinkää 31.12.2020

A handwritten signature in black ink, appearing to read 'Alisa Lehtinen', with a long horizontal flourish extending to the right.

Alisa Lehtinen

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Abbreviations

APA	Asia Pacific (business area)
CNE	Central and Northern Europe (business area)
GCN	Greater China (business area)
ENA	North America (business area)
KEF	KONE Elevators Finland
PS	Passenger side (elevator type)
PT	Passenger top (elevator type)
PU	Passenger under (elevator type)
PW	Passenger well (elevator type)
SEMA	Southern Europe, Middle East and Africa (business area)

1 INTRODUCTION

Companies consist of the things they own; facilities, material, money and information. A large part of enterprises' value and image is still determined by factors that cannot be owned – the people. Capital was demerged by economists in the 1980's to physical and human capital (Kucharčíková, 2014). Human capital is the factor that represents organization's specific character. People are able to learn, to innovate, to think creatively and to make changes. In today's society, satisfaction with a job and general work ethics are considered of high importance, and research has shown, that a significant correlation exists between employee and customer satisfaction (Vodák, 2010). With motivated and satisfied employees who understand the company's direction and visions, the company will be more alert of its surroundings, and will constantly develop its qualifications, which helps achieve more successful long-term operation in the market.

The success or failure of a company is affected by employees on all levels. The productivity and performance of managers, white-collar workers, and blue-collar workers, all influence the business efficiency (Lorincová *et al.*, 2019). Productivity and performance of workers have been connected to engagement. Engagement is described by Santhanam and Srinivas (2019), as individual's investing of themselves in their work activities and environment. In their research, work engagement is positively associated with task performance and personal commitment to the organization. Another study by Yalabik *et al.* (2013), shows that company strategies that aim to enhance job satisfaction and affective commitment, are likely to increase engagement. High engagement levels correlate with reduced employee turnover and intention to quit, while disengaged workforce can have serious cost implications to organizations (Yalabik *et al.*, 2013). A positive relationship between employee recruitment and employee satisfaction has also been found (Slavkovic, Pavlovic and Simic, 2018).

The case company's local unit in Finland, where this study is conducted, has specific procedures for hiring personnel to elevator installation. The process aims to find qualified workers, who, in the future, will be committed to the company. Working environment, work stressfulness, and company image all affect employees' working experience, which naturally again affects the levels of commitment and engagement to work. Globally, roughly three quarters of labor force in elevator installation in the case company is subcontracted, which sets further challenges for worker well-being in the installation sites and human resource management. Commitment and motivation experienced by installers in elevator installation tasks are the main parts of the research scope of this work. Attractiveness of elevator installation tasks, and factors behind career choices are to be inspected.

Planning and designing development programs must be aimed into the future. Technical advancements and changes in job descriptions can have significant effects on the motivators and working experience. Digital tools, such as robots, connected objects, and communication systems that are products of the fourth industrial revolution taking place (European Commission, 2019), shape the nature of many jobs. In evaluating the situation in the case company and development potential in the elevator installation process, the changing structure of the industry must also be taken into account.

1.1 Research background

During latest years, the building industry has increased significantly, which has also boosted need and production of elevators. In the case company, between 2019 and 2020, the increase in elevator deliveries was 12 percent, while the amount of elevator installers only increased 4 - 5 percent (KONE Corporation, 2020). The example is from the case company's Greater China (GCA) business area, but growth numbers have been similar globally. Need for recruiting more qualified personnel is high, and companies globally in the field struggle to find motivated and committed labor. Bodily work with high demands of precision doesn't appear attractive, which has created pressure on the industry to modify procedures and job descriptions to better suit the hopes and expectations of potential workers. Globally, more than 50 percent of companies struggle to retain their best employees. Compared to white-collar jobs, especially labor-intensive blue-collar jobs are prone to turnover (Santhanam and Srinivas, 2019).

Reasons behind the struggle of finding committed workers are to be studied in this thesis. Changes in technological advances are set to dominate as drivers affecting business growth in the near future. Employment types are going through change, and nearly 50 percent of companies participating in the World Economic Forum's Future of Jobs Survey, expect automation to lead to reduction in their workforce. However, the same businesses also expect to extend their workforce to new productivity-enhancing roles, and to create new ones (World Economic Forum, 2018). Because of digitalization and change in society towards knowledge economy, soft skills of the organization are becoming increasingly critical (Cillo *et al.*, 2019). A shift in skills required for performing most jobs is predicted, towards human skills and in-demand roles based on use of technology (World Economic Forum, 2018). Recent, and expected, development has affected the ideas of trendy jobs. Assembly type of tasks are still required, and motivated workforce is highly needed.

Different working cultures and requirements set by local laws and unions have a substantial effect on the working process. In the case company, operations are divided into five geographical areas that include North America (ENA), Central and Northern Europe (CNE), Southern Europe, Middle East and Africa (SEMA), Asia Pacific (APA), and Greater China (GCN). Dissimilarities in processes and resource management in different parts of the World can be seen in uneven distributions of costs and numbers of installed elevators. In 2019, 62 percent of new elevator units were installed in the business area of GCN, while the costs only composed 20 percent of the field costs spent on installation. Simultaneously, 32 percent of the costs were allocated to ENA, with only 4 percent of the elevators installed (KONE Corporation, 2020). The distribution of costs and installed units is illustrated in figure 1. The cost distribution indicates that different strategies in motivating personnel are and must be applied in different parts of the World.

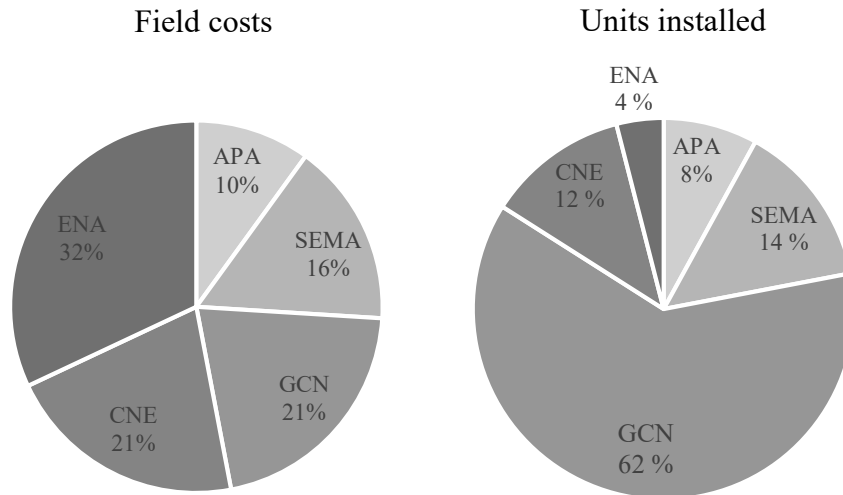


Figure 1. Global distribution of costs and units installed in 2019 (KONE Corporation, 2020)

Manuals exist for successful human resource management, employee wellbeing and reward models, containing guidelines for setting up the working environment and designing leadership models. Berlin (2019) and Viitala (2014) suggest that worker motivation factors should be recognized workplace-specifically, and describe backgrounds and emotional reasons for employees' experiences. Berlin (2019) lists four aspects that build meaningfulness and motivation:

- Job contents – Focus is on daily tasks and work amount, including the worker's possibility to influence on the overall picture and contents of the job.
- Reason – It is important to ensure that there is meaning to the work, and employees understand why it is being done. Reasons can be multilevel, and originate from intrinsic motivations, but also external measurable rewards.
- Relationships – The climate in workplace is affected by social aspects of work, that strive to find inspiration in teamwork and atmosphere.
- Direction – Sufficient guidance and clarity to the tasks, as well as constructive feedback need to be ensured.

On the other hand, Viitala (2014) lists typical reasons that discourage motivation and engagement to the employer:

- Lack of attention and support from supervisor
- Poor introduction and instruction
- Monotony of work and lack of responsibility
- Lack of opportunities to develop
- Lack of appreciation

The concept of employee motivation and satisfaction described by Viitala (2014) and Berlin (2019) are used as baselines for building understanding about the topic of this research. Exploring existing theories and scientific research about employee satisfaction and engagement is constructed on top of basic understanding about employee wellbeing and human resource management.

1.2 Objectives

In this study, the elevator installation process is examined from the installer's perspective. Potential development points are identified to increase the installers' motivation, and the attractiveness of the job in the eyes of potential recruits. The objectives are to determine which factors in the elevator installation process affect the level of workers' motivation and the image that potential workers have of the job, and to search for development potential to increase the motivation of installers and attractiveness of elevator installation. Based on the research questions, it is discussed, how the installation process should be developed. Motivational factors found significant in construction and electrical assembly type of jobs are researched, as they represent similar working conditions to elevator installation, and findings are applied in the case company's elevator installation process. The objectives can be reached by answering the following research questions:

- a) Which factors affect the workers' motivation and commitment level?
- b) How should the process be developed to keep employees motivated and committed?
- c) How is the job seen from the outside?
- d) How should the process be developed to attract a wider variety of workers?

The research questions are approached through a literature study and a research to be done among elevator installers. The aim of the literature study is to introduce existing theories on employee motivation and engagement, and to build foundation for the research study to be carried out. The research study aims to investigate elevator installers' experiences of the topics introduced in the research questions. Research findings are analyzed based on the theories, and possible actions are discussed to find answers to the research questions.

1.3 Scope

Guidelines for the research are defined by the literature research, introduced in section 2. *Employee Engagement*. Factors affecting employee satisfaction and employee engagement are introduced, and results for different worker groups are discussed. Findings are used as a guideline to design the interviews of elevator installers. Findings in literature research, and interviews of the installers together with observations from the worksite, and discussions with experienced professionals are then analyzed.

Employment models and installer bases differ between business areas. Focus in this work lies on the installation process and universal development potential. As the main location for conducting this study is located in Finland, as well as the headquarters of the case company, most of the data and employee experiences also originate from Northern Europe and local methods. The installer base in Finland area currently consists of roughly 50 percent of internal installers, and 50 percent of subcontracted installers, and offers an insight to the local employment model. Other models exist, which complicates the analysis of the installer job. Internal and subcontracted installers fundamentally work with the same tasks, but their experiences of the work might be very different due to different employers. The scope of this

work only includes the relationships of installers directly linked to the case company, and not the subcontracted installers' relationships to their own employer.

The aim in this research is to answer the research questions presented above. To find answers, elevator installers of different backgrounds are interviewed about their careers, ideas, and experiences. The scope is to examine reasons for becoming an elevator installer, and to stay in the job. Under inspection is the physical elevator installation process, but also company practices, career paths and learning possibilities of installers, immaterial rewards, and leadership. Development potential is sought in the process to make the job more enjoyable, attractive and motivating for the installer.

2 EMPLOYEE ENGAGEMENT

The literature research investigates the theoretical background of employee motivation and engagement. It introduces the term “employee engagement” and describes its significance in organizations. Several factors have been found to contribute to increasing motivation and engagement. These factors and differences between worker groups are discussed, focusing on the workers’ perspective. The influences of working environment, organizational arrangements, team composition, and cultural differences, are inspected. Key elements are searched and introduced in order to provide theoretical background to the following research study in the case company. In the field of construction work, research specifically on elevator installation is scarce, but data on construction industry and workers universally is widely available. Elevator installation tasks often take place in uncompleted building locations that can be described as construction sites. Thus, research and data from construction careers is applied in this study when possible.

Employee engagement is a widely studied subject under different contexts. It is difficult to define and measure engagement universally and unanimously, and it has often been associated with other constructs, such as “organizational commitment” and “job involvement”, that have a similar meaning (Bedarkar and Pandita, 2014). They are often addressed similarly, and there is no consistent use of terms in the field. Employee engagement is a not-easily-measurable concept, that requires indicators to be chosen in order to evaluate the matter. Investment into human capital development and resulting return has been studied by Vodak (2010), who has measured investment value by evaluating three output indicators: “productivity of employees”, “employee satisfaction” and “keeping the employees”. Productivity is easily measurable in work result variables, such as time used for completing tasks. The variable of keeping the employees can also be evaluated by looking at statistics in turnover of workers. Employee satisfaction is a different, subjective matter, that can only be measured by polls and questionnaires. Many companies measure their employees’ satisfaction and stress-levels at work frequently, which produces data about the well-being of workers and overall atmosphere in teams. These indicators help getting approximate estimations on development, but comparison between dissimilar processes and workplaces is difficult.

In this study, work motivation is considered as a part of employee satisfaction. High employee satisfaction and engagement can lead to high employee performance, which is a positive driver of organizational performance. Figure 2 describes the relationship between employee satisfaction and organizational performance. Measurement of organizational performance can be done by evaluating, for example, productivity and turnover. Now, however, the target lies in examining and identifying possibilities to enhance the employees’ experience of the tasks and organizational support, and the image that potential recruits have of the job. In figure 2, this research focuses on the two first levels, employee satisfaction and engagement.

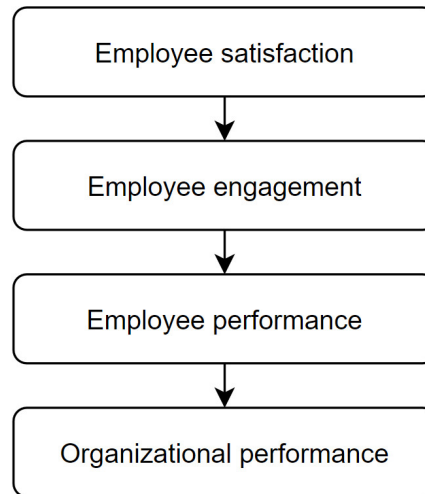


Figure 2. Relationship between employee satisfaction and organizational performance

Work motivation, employee satisfaction and engagement affect the overall image of the company, directly or indirectly. Bedarkar and Pandita (2014) found good organizational image and values to be among the most important drivers towards employee engagement. Career choices are also often made according to existing ideas about industries. Work motivation factors in different working groups were studied by Lorincová et al. (2019), and Hitka et al. (2018), among others, and several different subjects were found. Preferences and important factors differ between worker groups. For example, gender and education significantly impact the factors that affect motivation: basic salary level is more important to male workers, while a good working team is more valued by women. Recognizing of employee motivation factors is a key objective in keeping employees and increasing employee satisfaction. A successful evaluation and development of working environment can also help in improving the enterprise image and making jobs in the company more attractive to potential employees. Factors that were found to be essential in building employee engagement and job attractiveness are presented in Table 1. *Factors affecting employee engagement, findings, and supporting literature.* The supporting literature includes research studies that have reported the factors in question to be important in constructing work motivation and engagement. Factors are discussed in later sections.

Table 1. Factors affecting employee engagement, findings, and supporting literature

Factor	Findings	Supporting literature
Career opportunities	<p>Career opportunities is the top global driver of engagement.</p> <p>Career satisfaction is a combination of Proactive personality and organizational support.</p> <p>Promoting "a career" instead of "a job" is more attractive.</p>	<p>Bedarkar and Pandita, 2014 Schlechter, Thompson and Bussin, 2015 Hitka et. al., 2018</p>
Remuneration	<p>Low starting salaries in construction drive employees to other industries.</p>	<p>Schlechter, Thompson and Bussin, 2015 Ling, Leow and Lee, 2016 Hitka et. al., 2018 Lorincova et. al., 2019</p>
Workload	<p>"Too heavy workload" is the main reason for women leaving the field.</p> <p>Musculoskeletal disorder and stress due to ambiguity at work damage worker well-being.</p> <p>Irregular working times for prolonged periods can cause stress.</p>	<p>Bedarkar and Pandita, 2014 Ling, Leow and Lee, 2016 Lorincova et. al., 2019</p>
Atmosphere in workplace	<p>Atmosphere in workplace is the most important motivational factor among female blue-collar workers.</p> <p>Transformational leadership model supports employee satisfaction.</p>	<p>Bedarkar and Pandita, 2014 Hitka et. al., 2018 Lorincova et. al., 2019</p>
Recognition	<p>Lack of communication and constructive feedback reduce work satisfaction.</p> <p>Supervisor role has high importance in employee's experiences of recognition.</p>	<p>Bedarkar and Pandita, 2014 Schlechter, Thompson and Bussin, 2015 Hitka et. al., 2018</p>

Good work team	<p>Team dynamics affect the working climate and thus, worker satisfaction.</p>	<p>Hitka et. al., 2018 Lorincova et. al., 2019</p>
	<p>Task conflicts support the productivity of team, but if not managed properly, can turn into harmful personal conflicts.</p>	
Brand alignment	<p>Especially young people entering work life seek "trendy" jobs.</p>	<p>Bedarkar and Pandita, 2014</p>
	<p>High employee satisfaction increases the company image as an employer.</p>	
Work-life balance	<p>Success within and outside the workplace promotes career satisfaction.</p>	<p>Bedarkar and Pandita, 2014 Schlechter, Thompson and Bussin, 2015 Ling, Leow and Lee, 2016</p>
	<p>A higher number of work-life-strategies correlates to higher employee loyalty and engagement.</p>	
Job security	<p>Job instability is highly discouraging.</p>	<p>Lorincova et. al., 2019 Hitka et. al., 2018</p>
	<p>Job security is seen more important in the beginning of career.</p>	

2.1 Career opportunities

Bedarkar and Pandita (2014) researched the drivers of employee engagement in the turn of 2010s, and career opportunities with brand alignment were found to be the top global drivers. Career advancement can be described and experienced in different contexts and ways. Not only promotions and increments in salary can be considered as career advancements, but also the ability to exercise one's own skills, power, prestige, self-realization, personal growth, education, and work recognition can be forms of personal career development (Hitka, Kozubíková and Potkány, 2018). Non-financial reward elements, such as learning and career advancement, have been proven to have a significant effect on the perceived attractiveness of a job. Career opportunities help in binding people to the organization, as they help employees to pursue their individual goals (Schlechter, Thompson and Bussin, 2015). In all fields, individuals have started to take more responsibility for their own career development (Sheldon and Wallace, 2014). The change towards individualism in working life has also changed career management.

Different approaches and strategies for career management in enterprises have been studied by Sheldon and Wallace (2014), who analyzed the impact of career opportunities on employee loyalty and meeting of organizational objectives. The financial objectives are again tied to employee satisfaction. An explicit approach for organizational career development support, is offering standardized career pathways (Sheldon and Wallace, 2014), where the organization implicitly defines success or failure in the organization. The opposite approach for this is based on social cognitive career theory (Barnett and Bradley, 2007). It implies, that the career path depends on the employee's own activity and social behavior in the organization. Career success definition has become more subjective in the latest years, being materialized as job or career satisfaction. Figure 3 illustrates supporting factors leading to career satisfaction described. Best career advancement and personal vocational growth have been found to result from combinations of internal and external motivators in career management, merging the opposite approaches. Proactive personality traits combined with organizational support promotes contextual-specific behavior that helps support an individual's personal goals and satisfaction to their career (Barnett and Bradley, 2007).

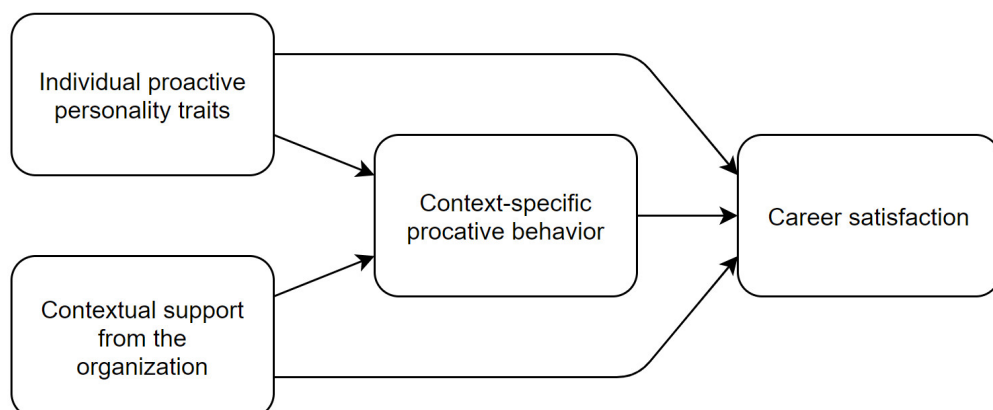


Figure 3. Career satisfaction (adapted from Barnett and Bradley, 2007, p. 621)

It is possible to support employees' experiences on career advancement and need of development by exploiting existing organizational resources. Naturally occurring workplace events, such as challenging assignments, developmental relationships, for example mentoring programs, skills building, and authentic feedback, are beneficial to workers' experiences of career-related development. Implementing complex, long-term systems for career development is not the only option for increasing employees' career satisfaction, but every-day-type activities could be promoted to support personal planning and reflection (Sheldon and Wallace, 2014).

2.1.1 Subcontracting

Outsourcing and subcontracting work is a common practice that first started as means of cutting down labor costs, but has also spread to highly skilled professional jobs (Wills, 2009). Subcontracted employees form a large part of the case company's work force in elevator installation. Qualification for the elevator installer job is achieved through internal training or apprentice programs. Anyhow, expertise and efficiency needed in the case company for the tasks is best developed through experience in the worksites. A subcontracted worker's experienced role is different from someone's working directly under the main contractor. Differences in experiencing commitment and solidarity towards the main contractor and subcontractor companies under different circumstances have been studied by Connelly, Gallagher and Gilley (2007), Wills (2009), and Rahman et al. (2020), among others and differences in workers' experiences were detected.

Employment relationships are often complicated, and subcontracting of work complicates them even more. Career expectations and hopes of flexible work are often a driver to seek work through subcontractor companies. The workers' relationships between the subcontractor and the main contractor companies depend on support from both or either of the companies, workers' personal experiences in the job market, as well as personal traits (Connelly, Gallagher and Gilley, 2007). Rahman et al. (2020) and Connelly, Gallagher and Gilley (2007) concluded that commitment to the general contractor among subcontracted workers is a consequence of trust and satisfaction. They are again linked to motivation, reputation and communication. Positive experiences of the client company's activities increased positive attitudes towards both companies. Support from the client organization predicted commitment towards it, as well as the subcontracting agency. As a challenge in subcontracting labor, Wills (2009) includes the ambiguity in identifying the "real employer" in contractor chains. Also, where subcontracting workforce gives flexibility to the company, it might lose skill and engagement. Other problems also occur with subcontracted labor. When training and fulfilling site safety requirements is outsourced, the quality and continuity of work procedures might suffer.

2.1.2 Recruitment and competition between fields

The construction field faces competition from other industries for craft workers (Bigelow *et al.*, 2019). Data from construction careers is used in this section to best investigate the selection criteria and mechanisms behind the choice of careers in the case company and elevator installation. A general shift in the global economy from production to services has influenced workers and working preferences of employees. Construction work is mostly

manual labor, blue-collar work in production industry, that offers tougher working conditions (physical strain, dirt, noise) than many other fields. In many parts of the world, the image of the construction industry is still poor (Ling, Leow and Lee, 2016).

Along with internal conditions at the workplace, the relationship between people and their work is influenced by external impacts on the workers' orientation before they enter the working market (Altreiter and Flecker, 2020). The idea of leading a career in construction is often chosen early in life. In the study of Bigelow et al. (2019) it was found that an earlier connection to construction work, through family or close relationships, increased the chance of people choosing a career in construction. Also, an image of a job, where workers are engaged with their families, is likely to provide positive effects in recruiting. Altreiter and Flecker (2020), found similar results in their study of career choices. They argue that workers' relationships with blue-collar work are influenced by dispositions constructed before entering the labor market. This means that the atmosphere around construction industry, and image formed in earlier life and education plays a considerable role in the success of recruiting workers to the field.

Bigelow *et al.* (2019) found in their study about work attractiveness, conducted in the United States, that among electrical workers, available training and career opportunities had more positively influential responses than salary. This implies, that in an individualistic, western cultural environment, promoting installation work as a career rather than "just a job", functions as a technique to attract workers into the field. In the case company, differences in local installer bases, mostly the shares of subcontracted work, cause a variety in career forms. Recruitment of own installer base and workers for a subcontracting company require different approaches. Also, cultural differences should be taken into account in planning recruitment programs and their targets.

2.2 Remuneration

Money is the main inducement for work. Its influential value in motivating employees is incomparable to any other motivational technique. Employers want their workers to feel that they are earning reasonable salary and payment for their efforts, which is also what the employees want. Pay, promotion, bonuses, or other types of monetary rewards, are used in all businesses to encourage employee performance. The effectiveness of remuneration schemes is dependent on the salary structures, that need to be considered in the organization. Organizational importance of the job, personal allowances, performance-dependent payments, pensions, and so on, need to be consistent and satisfy both parties, the company and the employee. (Manzoor, 2011)

Salary plays a significant role in making career choices. In the study by Ling, Leow and Lee (2016), it was found that low starting salaries in construction positions attracted construction students away from the field. Especially for those who were unlikely to enter the industry despite their suitable education, low salaries were determinant for career choices. When attracting more labor force into the field, adequate remuneration is a key factor.

Different remuneration schemes exist, and many companies pay their employees using a combination of different programs. Typical remuneration models include for example hourly and monthly wages, piece rates, and other, performance-related models (Nitsch, 2019). As

implied earlier, different worker groups are motivated by different rewards. Kuvaas (2006) studied the compensation structure in Norway, and found out that in most industrialized countries, the total compensation consists of a larger base part and a smaller part contingent on behavior or performance. The base part is what is considered as the basic salary. Lorincová et al. (2019) state that among male blue-collar workers, basic salary is the most important motivational factor. Since most of the elevator installers in the case company represent this group, basic salary as a motivational factor should be held of high importance. Kuvaas (2006) also states that, as a general rule, in order to generate further motivation, the variable pay must represent 5 – 10 percent of the total compensation.

2.3 Workload

The physical working environment is one of the most easily observable working conditions. The daily working environment plays a significant role in employee satisfaction. Raziq and Maulabakhsh (2014) among others have studied this relationship between working conditions and employee satisfaction, and found a positive correlation. Working environment is a complex that consist of many different areas, and not only the physical surroundings. Raziq and Maulabakhsh (2014) described the working environment to consist of working hours, job safety and security, relationships with co-workers, esteem needs, and top management. In this section, the workload and requirements it sets, regarding working hours and physical strength, are under inspection. The social aspects and leadership effects are further discussed in section 2.4 about the atmosphere in workplace.

2.3.1 Physical challenges

Elevator installation process most often takes place in construction-site-resembling locations, that can be physically and mentally challenging, as well as dirty working environments. People prefer jobs, that are not dangerous and physically challenging. The construction site is risky, not only because of all the dirt and debris, but mostly because of the constantly changing arrangements (Ling, Leow and Lee, 2016). These are aspects, that depend on the construction company, and as a contractor in the worksite, elevator installation professionals may not have power of decision about the safety and cleanliness regulations on site. Even though the process of elevator installation takes place separately from other construction work and workers' tasks, it is highly dependent on the surrounding progress of the building process and environment. Worksites cannot be significantly modified to only support cleaner and safer elevator installation, but internal processes and work procedures in the case company can be enhanced to suit the expectations and health of elevator installers.

Ling and Leow (2008) studied leakage from the field of construction among graduates working in construction industry in Singapore. The sample represents ideas of employees with experience in the field. They found that the most common and significant reasons for considering changing careers were “better prospects in other industries” and “personal reasons”. “Poor job conditions” came third in the study, which indicates dissatisfaction to the industry. Among female workers, the most important problem faced in the construction industry was too heavy workload, implying that some of the work tasks in the field require higher physical strength than some employees can offer. Gender discrimination issues were also found a problem.

Musculoskeletal disorder has been reported to be the most prevalent occupational medical condition in Europe, and in a comparison between fields, it is most probable to occur in construction (Park, Kim and Han, 2018). An image of physically challenging tasks drives the gender distribution towards male domination in the construction field. For the construction and manufacturing industry, also a social construct still exists, that drives different genders into specific occupations (Shrestha *et al.*, 2020).

2.3.2 Working stress

Mental health problems are prevailing in the working society. It is estimated, that 20 percent of the working-age population can be suffering from mental ill-health, and according to current trends, lifetime case rate might reach 50 percent of the population (Organization for Economic Co-operation and Development, 2012). Risk for mental health issues is thus relevant for everyone, and many types of work-related stressors can influence the development.

In working life, people are expected to operate under a certain amount of pressure. The challenge is to optimize demand to meet the worker's optimal performance. The relationship is presented in figure 4. When demands for executing work tasks are too low, employees feel bored and performance decreases. When demands are too high, pressure can turn into stress when pushed beyond the employee's threshold, again impairing the performance. The optimal performance is achieved, when demands meet the assets. Stress is cumulative, and being stressed for prolonged times can cause poor judgement, make employees to start making mistakes, and having poor interactions and reduced quality of life (Sartain and Katsarou, 2011). Prolonged stress can lead to exhaustion and burnout, and act as an igniter to mental health problems. Optimal performance of employees is reached under the pressure that corresponds to the employee's own assets and reserves of strength. It has also been presented, that disengaged employees are at higher risk of burnout (Santhanam and Srinivas, 2019).

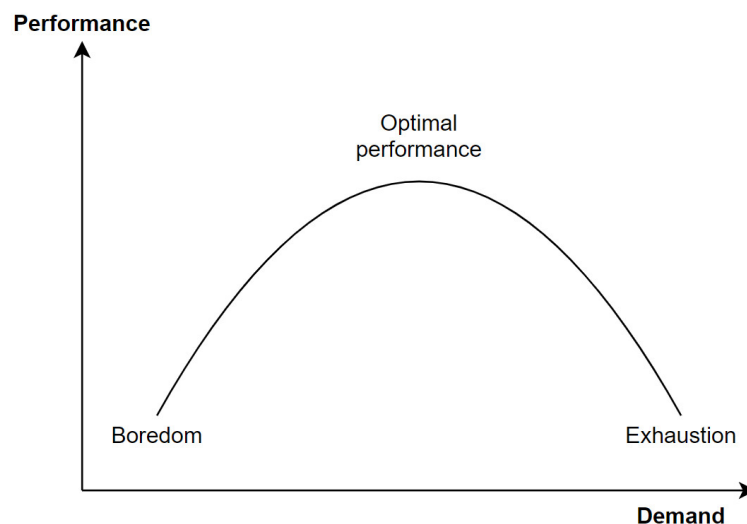


Figure 4. Performance as a function of demand (adapted from Sartain and Katsarou, 2011, p. 28)

Burnout and prolonged stress are proven to have a positive correlation to absenteeism and job withdrawal behavior (Santhanam and Srinivas, 2019), which can have severe financial effects to the organization. Stress experienced by employees should be prevented as early on as possible, to avoid cumulation. Hampton, Chinyio and Riva (2019) studied stress factors among office-based and site-based workers, and found out that they are mostly universal regardless of the workplace. The most important factors that caused stress found in their investigation are listed and explained below.

- Ambiguity – Organizational uncertainty and challenging environment characterized by poor communication, limited time or limited facilities and resources
- Working in teams – Close proximity in exhausting environments (the importance of team dynamics is discussed in section 2.5)
- Handling responsibilities among colleagues – Responsibility related to close deadlines or unexpected events
- Power and leadership – Communication and relationships can cause negative effects on leadership positions and power roles (Leadership is further discussed in section 2.4.1)

The study of Hampton, Chinyio and Riva (2019) also found that workers are often able to recognize the stress factors they are facing and to talk about them. For organizations, it is fundamental to allow dealing with stress issues, and to provide protective measures to prevent predictable stress.

2.3.3 Working time

Elevator installation must take place within the construction site's working hours. In replacement projects of old elevators, for instance in residence buildings, other challenges such as noise level requirements might impact the scheduling of installation work. If the working environment sets requirements for the elevator to be finished quickly, long working hours and working on weekends are not rare.

Working hours is one of the main conditions affecting workers' mental health. In addition to high number of hours worked, short resting periods and frequency of night and weekend work can be serious work-stressors. Sato, Kuroda and Owan (2020) researched the impacts of working times on employees' mental health. They used data collected in a large Japanese manufacturing company with over 10 000 regular employees. It was found that for blue-collar workers, recurring night work was the worst factor affecting their mental health. Also, mental detachment from work on weekends, was found to be more efficient in recovering from work stress than shortening daily working hours. This implies, that encouraging employees to take full holiday entitlements could have positive effects on workers' mental health. Working on weekends or overtime (weekdays or weekends) also had less negative effects on blue-collar, than white-collar workers' mental health. It is suggested, that differences result from different expectations of individuals' careers, and their finding that blue-collar workers are more flexible regarding their working hours.

The relationship between long working hours and depression symptoms have been studied by Virtanen et al. (2018) and globally, differences were found. Long working hours have a greater negative effect on employees' mental health in Asian countries, than in Europe,

North America, and Australia. Virtanen et al. (2018) suggest that this results from cultural differences in occupational health policies and reward systems. If long hours and overtime are voluntary and rewarded economically, with esteem and job security, they often have positive effects on the employee and their work satisfaction. In the opposite situation involuntary long working hours are combined with low rewards, which naturally has the opposite effect.

2.4 Atmosphere in workplace

Atmosphere in workplace has been found to be the most important motivational factor among female blue-collar workers (Lorincová *et al.*, 2019). Work atmosphere is a part of the working environment and conditions and is defined by any factors that affect the social climate at work. It can involve safety to employees, relations between co-workers and feelings of security and involvement. According to Ashraf (2019), employees who understand that they are considered important in the organization, will have a higher level of commitment and a sense of ownership towards their firm. In this section, social atmosphere is discussed starting from upper level communication and focusing on team dynamics.

2.4.1 Leadership and Communication

Leadership research has shown, that psychologically safe environment at work, and positive leadership behaviors lead to employee engagement (Bedarkar and Pandita, 2014). Support from and trust in the leader, with a blame-free environment, are important factors in the worker-leader relationship. Leaders at work have a specific role as guides and decision makers in everyday situations. Supervisors have the responsibility to keep employees informed about their tasks and workplace policies. Also, poor leadership can lead to loss of worker potential.

Dealing with ambiguity and uncertainty causes stress to workers (Berger *et al.*, 2019). In assembly type of jobs, where the supervisor role is emphasized, uncertainty can be caused by lack of communication, for example due to insufficient training, unclear operating instructions or distribution of work, or constant organizational changes. Berger *et al.* (2019) compared opposite leadership roles in different working environments, and their effect on worker well-being. The leadership types were change-oriented transformational, and passive-avoidant leadership behaviors. The change-oriented transformational leadership model supports individual consideration, whereas the passive-avoidant leadership model relies on pre-defined patterns. It was found, that transformational leadership supported a climate for learning and reduced role ambiguity. Passive-avoidant leadership, on the other hand, reduced job resources and increased job demands. Thus, leadership can be categorized by communication and presence. As mentioned earlier in section 2.3.2, Hampton *et. al* (2019) named power and leadership factors, including poor feedback and lack of communication as one of the most important stress factors at work. Below is listed suggestions by Viitala (2014) for everyday communication in a workplace, that supports employee wellbeing and job satisfaction:

- Clear operating instructions
- Uncomplicated and trusting relationship with the supervisor
- Clearly defined roles and responsibilities
- Constructive feedback on the executed work tasks
- Accurate and timely information about the organization

Issues in communication from supervisor and coworkers can cause the atmosphere at work to be stressful. In order to provide a good atmosphere and support employees' psychological wellbeing, the working environment and leadership behavior should offer basic security in the form of uncomplicated communication.

2.4.2 Recognition

Schlechter, Thompson and Bussin (2015) researched non-financial rewards among workers in various industries. Recognition and praise were identified as important reward elements. Participants found recognition, among other non-financial reward elements, work-life balance, learning, career advancement and benefits, to make a job offering appear more attractive. Recognition gives attention to employees' actions, effort, behavior, and performance, and is linked to supportive leadership. Supervisors have an effective role in generating the atmosphere at workplace, and a supportive environment allows workers to develop. Supervisors have the opportunity to give recognition and appreciation to the employees, which internally satisfies them with their job and organizational environment (Manzoor, 2011). Cooperation and constructive feedback from the supervisor have also been shown to have a positive effect on job satisfaction (Ashraf, 2019).

2.5 Work team

In the study of Lorincová et al. (2019), good work team was found to be – after basic salary and atmosphere in the workplace – the third most important work motivation factor among blue-collar workers, both men and women. As mentioned in section 2.3.2, it is stated by Hampton, Chinyio and Riva (2019), that working in teams in a close proximity to coworkers, can be a work stressor. Especially in construction-type of work, where presence at the worksite is needed for prolonged times, alignment of team and individual efforts becomes important. Leadership methods have a direct and indirect influence on the organizational climate. It affects the working atmosphere directly from the supervisor level, but also through the teams' social atmosphere and teamwork quality. A team's internal dynamics again strongly affect the atmosphere at a workplace, as presented in figure 5. When employees feel that they are treated equally and fair, feelings of security and unity in team increase. This again enhances the working atmosphere.

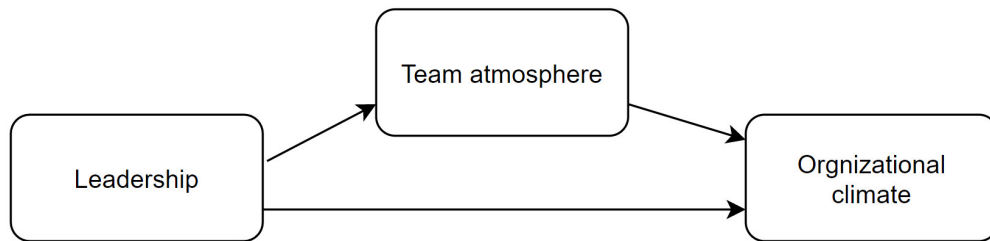


Figure 5. Impact of leadership and team dynamics to the atmosphere at workplace (adapted from Pérez-Vallejo and Fernández-Muños, 2019, p. 5 of 10)

Diversity in team composition causes conflicts, that can have both, beneficial and detrimental effects (Wu *et al.*, 2019). Significant conflicts for the project performance include task conflicts and relationship conflicts, that result from diversity in workers' values and knowledge. Task conflicts mean disagreement on the work, for example task prioritizing, and if not managed properly, they can lead to relationship conflicts. Task conflicts can increase the effectiveness and productivity of the team, when discussed and managed properly. Without respectful and fair management, task conflicts can become harmful relationship conflicts within the team, which negatively affects the team atmosphere.

Demographical diversity is often associated with social categorization. Wu *et al.* (2019) (2019) studied diversity in teams, and its effects on the team's performance. They found two influential paths, direct and indirect. The direct path from diversity to performance was not found to be statistically significant, but the indirect path, from diversity to conflict and further to performance, was notable. This offers employers and supervisors the opportunity to take advantage of the positive effects of task conflicts, and to avoid the negative effects of relationship conflict. In order to take advantage of diversity in teams, a wider variety of diversity categories should be included, such as gender, nationality and age. The typical gender bias in construction and manufacturing industries might prevent a large group of potential diversity to be harnessed.

2.6 Work-life balance

About 60 percent of the world's population over 10 years of age belong to the global workforce. This workforce globally spends one third of their adult life at work. In addition to income and material output, at best work can contribute to social, psychological and physical health. At the same time, good occupational health promotes achievement of economical and material objectives in life. As health is one of the most valuable assets of individuals, healthy working environments and occupational health are strategies, that contribute positively to productivity, work satisfaction and overall quality of life. In order to successfully fit the working and personal lives of employees together, organizations need to invest in their human capital. Supporting employee well-being, and balance between work and personal life also promotes companies' productivity and image. (World Health Organization, 1995)

Work-life balance has been listed by several researchers as a significant work engagement or job attractiveness factor (Bedarkar and Pandita, 2014; Schlechter, Thompson and Bussin, 2015; Ling, Leow and Lee, 2016). Lorincová *et al.* (2019) found out, that women value work-life balance more than men, who again put more effort into achieving wealth. Work-

life balance can be described as a state, where employees are not overworked, don't have to stay beyond normal working hours, and enjoy flexible working practices. In order to promote work-life balance, organizational policies and programs should actively support employees' efforts to be successful in both, within and outside the workplace (Schlechter, Thompson and Bussin, 2015). Achieving balance between workplace and personal life depends on sufficient resources to meet work and personal obligations and thus satisfying one's needs. Personal ability to balance work schedules with conflicts and burnout, also helps in achieving work-life balance and career satisfaction (Ling, Leow and Lee, 2016).

As mentioned in section 2.3 *Workload*, construction sites are often physically challenging places of work. Expectation of long working hours and tiring work is seen as a loss on the free time. A strong inverse relationship has been found between long working hours and experienced good work-life balance (Ling, Leow and Lee, 2016). A stressful and dangerous working environment is perceived as a disadvantage to healthy life outside the workplace. Construction industry and jobs are often seen as family-unfriendly, which again decreases the attractiveness of a job and the balance between personal and working life. Work-life strategies in organizations can include for example child-related support, maternity or paternity leave, physical and psychological well-being programs or eldercare assistance. In the study of Lingard, Fracis and Turner (2012), it is stated that a higher number of work-life strategies correlates to higher employee loyalty, lower absenteeism and less reported stress symptoms. They also suggest, that in addition to higher employee satisfaction levels, organizations that offer a supportive work-life balance environment are in a better position in attracting new employees.

2.7 Brand alignment

At the point of choosing careers, industry image and brand alignment with own interests and values play a significant role. Bedarkar and Pandita (2014) examined several different researches and surveys executed globally during 2009 and 2010, and found career opportunities and brand alignment to have remained consistently in the top 5 global work engagement drivers. Employer branding is increasingly important in today's labor field, where especially young people entering the job market seek "trendy" jobs. The employer brand concept is based on creating, maintaining, and positioning a unique image of the employer in the job market (Kucherov and Zavyalova, 2012). Successful employer branding and attractive brand image to both, potential and current employees, gives an advantage for the company in the competition for competent and talented labor. Employer brand value has been proven in several studies to have a positive correlation to the perceived attractiveness of a company by potential workers (Wallace *et al.*, 2014).

A human resource development approach can be taken to employer branding. Many work structures and motivational factors affect the image that the organization gives out. Human resource management, and their approaches to employee wellbeing are the factors in organizations, that the employee meets during their employment. Branding applications in organizations should include employer branding, where employment experience is considered as the product, and labor force as the customer. Employee branding, on the other hand, is a process, that has its foundations in the organization's values and missions. Wallace *et al.* (2014) defined it as a process, that aims to help employees understand and experience the defined and desired brand image as the company wishes to deliver it. They found, that if

done well, employee branding strengthens the employees' relationship and engagement to the company. Increased employee satisfaction, in turn, enhances the organization's image as an employer to both, current employees and the job market.

2.8 Job security

A permanent job provides stable income necessary to life. It is reported by Ling, Leow, and Lee (2016) that students are significantly discouraged by job instability, when entering the labor market. In jobs, where employment is dependent on whether there are projects available, employees feel less security and are more prone to turnover. Flexibility in workforce is often promoted for financial reasons, which on the other hand, can decrease sense of job security in employees (Sheldon and Wallace, 2014). The financial advantage achieved in workforce flexibility can be overturned by the lost employee loyalty.

Schlechter, Thompson and Bussin (2015) found out in their study on non-monetary rewards and motivation, that job security was more important to young people entering the labor market, than older employees. Young employees were less attracted by monetary or job security factors than organization value congruence. It can be concluded, that job security plays a different role for employees in different life situations. For family providers, for example, job security has higher importance than to other groups (Hitka, Kozubíková and Potkány, 2018). The relationship between job permanency and workforce flexibility needs to be considered in organizations in order to achieve competition advantage in the market.

2.9 Cultural impacts

Motivational factors among different worker groups might vary. Personal preferences, working culture in the current country, age, gender, and overall situation in life, all affect the personal experience workers have of their job. In previous sections, the most important motivational factors identified in studies and research have been discussed. Employee satisfaction and engagement are concepts, that are dependent on individuals' experiences. Different approaches to attract and maintain competent and motivated workforce might need to be taken in different contexts. In the case of elevator installation jobs, physicality, current employee diversity level and situation in the industry, affect the factors that employer branding and human resource development need to focus on. Depending on the pursued goal in employer marketing, cultural and social aspects need to be considered.

2.9.1 Gender

The construction industry is very unbalanced regarding the gender of workers. In the USA, only 10,3 percent (U.S. Bureau of Labor Statistics, 2019), in the European Union (EU), only 7,7 percent (Eurostat, 2008), and in urban areas of China, only 11,1 percent (National Bureau of Statistics of China, 2004) of the construction industry employees are women. The shares are presented in figure 6. These numbers include administrative, executive and office positions, which balances the figures of the whole field. Of site workers, exact data is not available, but it is estimated that in the EU, 97 percent of site workers are male (Eurostat, 2016), and a similar distribution is to be seen in the case company among elevator installers. As explained in sections 2.3.1 *Physical Challenges*, and 2.6 *Work-Life Balance*, construction

work is physically challenging, and the field is not seen as family-friendly. These factors seem to be driving away women from the industry, but the situation is not black and white. Social constructs build images about “manly” fields, which are harmful for the industry, as well as workers as individuals.

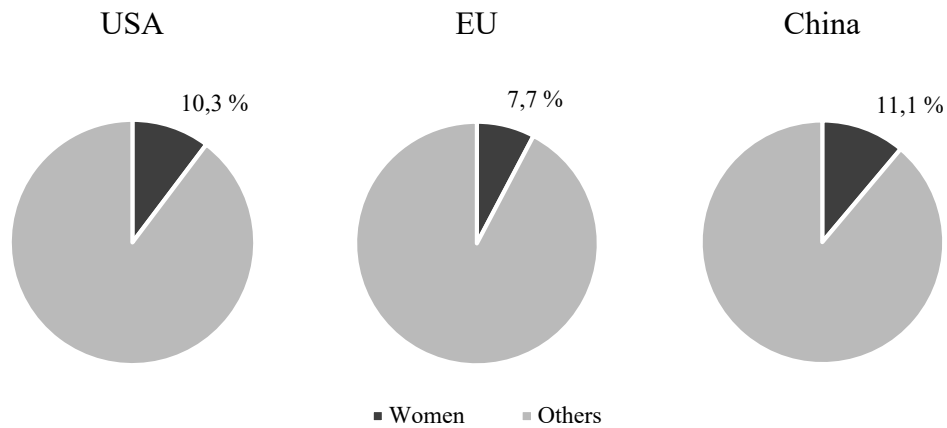


Figure 6. Shares of women in the construction field (National Bureau of Statistics of China, 2004; Eurostat, 2008; U.S. Bureau of Labor Statistics, 2019)

Research and studies have been conducted for comparing motivational factors between men and women. Among blue-collar workers, it can be concluded, that men are more attracted to monetary rewards and the possibility to be involved in new technologies than women, who appreciate a good working team, learning possibilities, and opportunities to contribute in society (Wallace *et al.*, 2014; Hitka, Kozubíková and Potkány, 2018; Lorincová *et al.*, 2019). These findings indicate, that in brand marketing and employer image management, sensitivity is needed to meet the needs of potential recruits. Especially in gender-biased fields, where social constructs stunt the growth of employee diversity, labor market segmenting and communicating tailored brand messages could advance human capital development in the organization.

2.9.2 Age groups

Underlying components of motivation and attraction to certain jobs are constantly changing with the individual (Schlechter, Thompson and Bussin, 2015). As life situations often change with age, also the energy reserves for competition and learning new things might change. In an optimal situation, career development supports the individual’s growth. In Europe, the working population is aging (Eurostat, 2019), and in developed countries globally, the situation is similar. Inceoglu, Segers and Bartram (2012) studied age-related differences in work motivation, and found four psychological processes that are likely to affect work motivation during life. They are:

- Changes in personal resources – Decline in working memory and processing of new information tasks, described as fluid intelligence, and increase in educational and experiential knowledge, described as crystallized intelligence
- Changes in the perceived utility of work-related outcomes – The view and experienced importance of developing personal resources, career progression and external rewards
- Moving through stages of life – Experiencing changes in life goals and shifts in motives through life events, e.g. raising a family
- Social comparisons and pressures – Viewing the perceived utility in relation to other people's views, e.g. retiring at a certain age despite own wishes to stay in working life

Shifts in work motivators during aging have been researched by Inceoglu, Segers and Bartram (2012). Their data was collected in the UK during years 2003 and 2007 among several worker and age groups. Work motivators that include personal resources, such as competition and power, with extrinsic motivators, like monetary rewards and career progression, were found to lose importance in older work groups. Also, compared to younger individuals, intrinsic motivators, for example personal principles and autonomy, were found to be valued higher. Based on their research, they claim that the overall level of motivation does not significantly change during life, but young and old employees on average are motivated by different job features.

2.9.3 Area

The cultural area affects sources of work motivation. Personal relationship with work is experienced very differently in different cultures. Differences must be taken into account especially in global organizations, where the individualistic Western, and collectivistic Eastern working cultures (Erez, 2008) intersect. Differences in working cultures and local customs require different approaches to attracting and maintaining labor force. Trained installers are most often not transported globally but selected in nearby areas. Costs of labor, anyhow, vary globally in very different scales. Naturally, low costs are an important objective in human resource management and have been pursued also in locating the workforce. In addition to developing strategies for attracting and sustaining own trained personnel, subcontracting of labor also brings in new challenges. Generally for the employer, in Western individualistic cultures labor costs are higher due to social insurance contributions that need to be paid in addition to wages and salaries (International Labour Organization, 2017).

Culture can be defined as a shared meaning system (Erez, 2008), and is often dependent on the global area. Marshall and Sader (2005) studied two different motivation models, positive and negative, among workers with East Asian and Western European culture backgrounds. In the positive model, a desired goal is presented in order to motivate employees to pursue it. In the negative model, an unwanted result is presented to motivate employees to avoid undesired outcomes. They found out, that European culture background indicated motivation through positive models, and negative or no model had no effect. Asian culture background again, indicated opposite motivation effects. People with European culture background were only motivated by positive models, and people with Asian culture background were only motivated by negative models. Another study by Earley (1993) among workers from different cultural backgrounds, individualistic, or collectivistic, showed differences in successful

strategies among the groups. Their research demonstrates, that for individualists, group conditions, relative to the individual condition, result in reduced performance, whereas for collectivists, performance was lower in individual condition. This is a fundamental difference in motivation sources, that affects the efficiency of motivating strategies.

In different cultures and geographical areas, different types of strategies must be implemented to attract and motivate employees. Motivation strategies should be designed to suit the local working cultures.

3 METHODS

The structure of this study includes the literature study introduced in section 2, the following research part containing introduction and analysis of interview answers, further discussion of the interview answers, and finally conclusion of the results. This methods section covers the research methods theory behind the study, describes the planning and execution processes of the interview research, and explains the steps of research data processing.

The objective of the research study is to determine the motivators of an installer within the installation process, organization and self-realization. In order to study installers' experiences and thoughts, a method for collecting data was needed. Typical qualitative research methods include inquiries and interviews (Tuomi and Sarajärvi, 2009). The chosen method for investigating the subject was interviewing. Compared to a closed inquiry, interviewing gives the advantage of flexibility in question order, and enables clarifying the purpose of the questions and study to the interviewee.

The steps taken in conducting the research study were as follows:

a) *Getting familiar with the literature study findings*

The study on work motivation conducted in the literature research gave grounds to designing the interview research. Studying the situation among elevator installers required understanding of existing work motivation theories.

b) *Designing the interview questions*

In the planning process, research questions were clearly defined in order to find specific answers. The interview method offered space for discussion and development of multilevel solutions. It was predicted that creativity and experiences of installers would most efficiently be exploited in a discussion-like interview method. The interview questions were designed to guide the conversations about the installers' views and thoughts.

c) *Interviewing*

In total, 18 elevator installers or installer students were interviewed according to the questions introduced in section 3.2.2 *Interview questions*. All of the interviews were recorded and transcribed in order to be able to discuss the questions and answers with the interviewees more fluently.

d) *Data examination and analysis*

Interview answers were processed according to a four-step model introduced by Tuomi and Sarajärvi (2009), and analyzed in order to find recurring themes and experienced problems in the installation process and installer job description. The model is described in section 3.3 *Data examination*. The interview results were analyzed, among other information obtained from installation professionals and at worksites by observing, to find answers to the previously defined questions. The analysis is presented in section 4 *Analysis of elevator installation*.

e) *Discussion and reporting*

Discussion around the analyzed answers and interviewee findings is presented in section 5 *Discussion*. Key issues and improvement potential are identified and evaluated. A workshop for experts in different organization units is used as a method for discussion in order to comprehensively analyze the identified issues and possible solutions. Discussed actions and suggestions are presented in Section 6 *Conclusions*.

3.1 Literature findings in designing the research

In order to be able to design the interview questions relevantly to the research subjects, the key findings done in the literature study were classified. The findings guided the question set design. Question sets for different groups of interviewees are planned in order to best understand the specific factors and motivators within the groups. Focus in designing the questions is divided to categories, that involve work motivation on its own, process-related questions, employer image and personal experiences. Below, the key findings presented in Table 1. *Factors affecting employee engagement, findings, and supporting literature* have been categorized under the four question groups.

Motivation:

- Career opportunities is the top global driver of work engagement
- Promoting a “career” instead of a “job” is more appealing to labor forces
- Job security is more important for people in the beginning of their career
- Atmosphere in workplace is the most important motivational factor among female blue-collar workers
- Career satisfaction is a combination of proactive personality and organizational support

The career-related questions were designed to investigate motivations of installers. The motivational factors behind the decision to become an elevator installer, as well as reasons for staying in the job or leaving, were looked into.

Process:

- "Too heavy workload" is the main reason for women leaving the field
- Musculoskeletal disorder is a universal health issue in the industry
- Stress due to ambiguity at work damages worker well-being
- Irregular working times for prolonged periods can cause stress
- Lack of communication and constructive feedback reduce work satisfaction
- Supervisor role has high importance in employee’s experiences of recognition

Process-related questions aimed to find out about installers’ thoughts on the installation process and related functions. The questions aimed to investigate specific weak points in the process that cause discomfort to employees, and also, which parts of the process function well from the installer’s perspective.

Work image:

- High employee satisfaction increases the company image as an employer
- Low starting salaries in construction drives employees to other industries
- Especially young people entering work life seek “trendy” jobs

Work image -related questions were designed to figure out how the installers view their employer and job, how they experience their relationship with the organization, and how they affect their level of work motivation.

Personal experiences:

- Success within and outside the workplace promotes career satisfaction
- A higher number of work-life strategies correlates to higher employee loyalty and engagement
- Job instability is highly discouraging

This questions section of focuses on the interviewees’ personal experiences of learning and personal development, as well as expectations regarding their careers and future possibilities in or outside the case company.

3.2 Interviews

The research is conducted by interviewing internal and subcontracted elevator installers, and installer students. Supervisors and operational managers of KONE Elevators Finland (KEF) were included in the discussions to help analyzing the answers and experiences. Installers in different career points were chosen in order to get a comprehensive image of the installer base and different motivational factors experienced. As described in section 2.9.2 *Age groups*, age and career length affect the factors that are found important in a job. Installer students were chosen to examine the most recent reasons and motivations behind the decision to become an elevator installer. In order to get a global insight, two employees in the Asia Pacific (APA) business area with several years of elevator installation experience, were interviewed. Two subcontracted installers were included in the interviewee group as well, since subcontractors are a major part of KONE installation labor, and according to the literature research findings, their experiences often differ from the internal workers’.

The qualitative research nature of this study offers two different methods for interviewing, unstructured and semi-structured (Bell, Bryman and Harley, 2019). The unstructured method resembles an open conversation with the interviewee, where they can lead the direction of the conversation. The semi-structured method contains pre-arranged base of questions that functions as an interview guide, but still gives the interviewee the freedom to interpret the questions. The semi-structured interview model was chosen, due to the defined scope of inspection, and the interview topics being subjective to the interviewees. Bell, Bryman and Harley (2019) suggest the following in designing a semi-structured interview:

1. Generate order on the topic areas
2. Formulate questions so that they help answer the research questions
3. Use comprehensible and relevant language
4. Avoid asking leading questions
5. Collect contextual information about interviewees

3.2.1 Interview preparation

Suggestions by Bell, Bryman and Harley (2019) were followed in building the semi-structured interview question set introduced in section 3.2.2 *Interview questions*. Background research was done among elevator installation professionals to gather information about installation job descriptions and tasks in order to be able to cover important subjects in the motivation theory. The organizational manager, installation sourcing managers and the sourcing development manager were interviewed about the overall situation in the case company in installation tasks and sourcing.

In order to get a comprehensive overview of installers' motivators and thoughts, installers from different career backgrounds were interviewed. The internal installers are best aware of the company's practices' effects on the installers, which is why they are the primary group in the interviews. Those of internal installers who have the longest experience in elevator installation, have experienced the job during different situations in the global economy as well as personal life. Internal installers with shorter experience can offer insights on the first years of elevator installation careers. Students of the industrial institute were included in order to find out the most recent motivators behind the career choices of elevator installation, and to get a grip on how the company is seen as an employer among young job seekers. Australian installers were included to get a wider perspective of a global process. Even though there are country and area specific differences in the installation process, the products are globally mostly similar. Subcontracted installers have a different employer, but work with the same products. Their insights of the job and employer are thus only focused on the process as defined in the scope of this study.

The interviewed installers backgrounds are presented in figure 7. In total 18 installers or installer students were interviewed. Four of the interviewees were students of the industrial institute. Ten, most of the interviewees, were Finnish installers currently in installation tasks, 7 of whom had earlier graduated from the industrial institute. Also, two Australian internal installers, and two Polish subcontracted installers were among the interviewees.

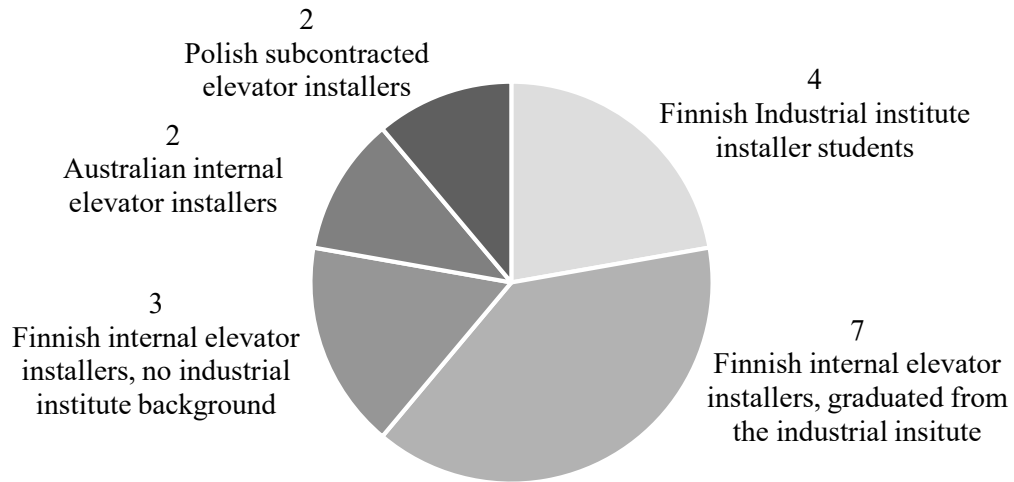


Figure 7. Interviewee backgrounds

The internal elevator installers' career lengths ranged from 1 to 39 years of experience. All industrial institute students who were interviewed started the education in January of 2020, having experience of two in-class periods, and roughly six months of elevator installation in the field with an experienced installer. The Australian installers had roughly 15 years of experience in installing elevators. The subcontracting company's main client is the case company, so the subcontracted installers also had several years of experience in elevator installation. The interviewees' backgrounds, including length of elevator installation career, as well as earlier education and jobs were recorded for the purpose of analyzing motivators and their changes.

Interviews were organized with the supervisors and team leaders of installers. The interviewees were chosen by KEF installation supervisors, the organizational manager of KEF, delivery operations development manager at APA business area, and the senior trainee of the industrial institute at KEF. The subcontracted installers were chosen for the interview by the field supervisor of the subcontracting company. Interviewees were met in person or through videocalls, depending on their schedules and locations. All of the interviews were recorded.

3.2.2 Interview questions

As suggested by Bell, Bryman and Harley (2019), order of topic areas in discussion was chosen to support logical thinking processes of interviewees, starting from motivators and reasons behind the career choice, proceeding through work tasks to work image and personal experiences. In order to find answers to the research questions, interview questions aimed to get a full image of each interviewee's motivation development during their careers. During the interviews, the order of questions experienced some variation to more logically follow the conversation flow. Some questions were also presented differently in cases where backgrounds of the interviewees conflicted with the questions. The series of questions is presented in Table 2.

Table 2. Series of questions by themes**Motivation**

1. How did you end up in elevator installation?
2. If you are studying in or have graduated from KONE industrial institute, how did you hear about it?
3. What was important to you when choosing a career in elevator installation? (Salary level, job description, career possibilities, company image, own interest in elevators, etc.)
4. What is the top motivator right now for your work?
5. Do you think your view of motivators has changed?
6. Would you choose the same career again?

Process

7. What is the worst part in the elevator installation process?
8. What is the best part in the elevator installation process?
9. Last time installing the elevator, what worked?
10. Last time installing an elevator, what didn't work?
11. Is there a specific point in installation that always causes trouble?
12. How would you develop the installation process? (procedures, tools, parts, schedules, expectations, communication, etc.)
13. Is there autonomy in the process and is it important to you?
14. Do you get feedback for your work?
15. How do you feel about the working environment at construction sites?

Work Image

16. What kind of image do you think KONE has as an employer?
17. How do you think the installation tasks are viewed?
18. Do you feel proud of what you do?

Personal experiences

19. How does the installer job affect your personal life?
20. Do you have opportunities for personal development?
21. How do you see your future in working life?
22. How would you market the installer job for a friend?

3.3 Data examination

After completing the interviews, the recordings were transcribed. The complete answers given in the interviews were reduced to only containing the main ideas and themes. Answers were also anonymized for the analysis. Tuomi and Sarajärvi (2009) give a four-step framework for analyzing data in a qualitative study. The steps were followed:

1. *Decide, what is interesting in the data*

This study aims to identify elevator installers' motivators to start a career in elevator installation, and also, motivators to stay in the job. For the analysis, main interest in the answers lied in these two objects, named here as motivation duality. Motivators could also be split by viewpoint, so that focus and themes lied in either, the image of the employer and job, or the concrete process and practices. These dualities in the thematization of the interview data and answers are used in structuring the analysis. Figure 8 presents the divisions of motivators and viewpoints.

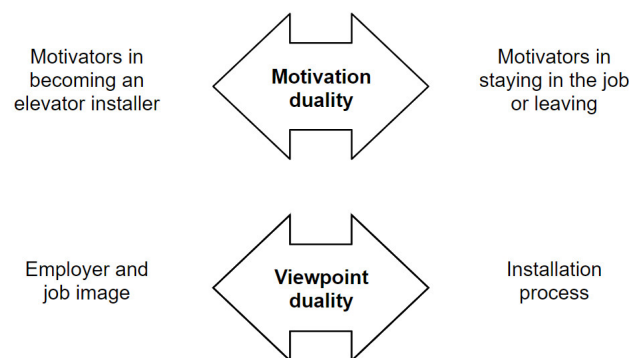


Figure 8. Motivation and viewpoint dualities

2. *Go through all data and mark up things of interest. Separate from other data.*

The interview recordings were listened through one to three times and transcribed, depending on the answers, in order to find the main points and ideas, which were typed down into reduced answers. The reduced answers were listed under each question and reviewed. To understand and find recurring themes, answers were abstracted and arranged under general topics while preserving the reduced answers for possible more precise inspection and analyzing of individual ideas. The main objective was to identify different motivators. Recurring themes in answers, as well as single significant remarks were highlighted from the complete dataset.

3. *Classify, thematize, or typify data*

The first data processing step was abstracting and classifying remarks occurring in the interviews. Several different themes or remarks might be included in one answer,

which was enabled by the interview method. In the classification process, themes were named and marked up for constructing data for the analysis. Exact numbers of mentions for each motivator, reason, problem or suggestion, depending on the question, were counted and put into tables. Extracts from the processed interview results are presented in later sections.

Thematization, where the classified answers are interpreted by the interviewee's reasoning, was done in the data analysis to validate results found in classification. Thematization is especially interesting for this study, as tasks could be experienced very differently by individual installers.

Typifying, where answers are arranged according to the whole answer, and not only theme occurrence, was not considered to be profitable for the analysis regarding the nature of the semi-constructed interviews. It is an assumption in the interview answers, that the interviewee only gives their first and most important thoughts to the subjects, while they might still agree with other existing answers as well.

4. *Write a conclusion*

Section 4 *Analysis of elevator installation* includes interpretations and analysis of the data collected. In section 5 *Discussion and results*, the interview answers are discussed in light of the literature study findings. Conclusions are presented in section 6 *Conclusions* with action proposals.

4 ANALYSIS OF ELEVATOR INSTALLATION

In this section, the installation process is first described according to the installation instruction document, observation in the worksite and discussions with installation professionals. The focus is on the tasks and role of the installer, and their experiences. Later, the interview answers and data collected are analyzed. Motivators are first discussed through the product and process, following with the company and job image. Typical careers and installers' experiences regarding motivation and commitment are also introduced. Finally, a global insight is taken in assessing installers' motivators in the elevator installation process and whole career.

4.1 Installation steps

Elevator installation processes take place in building worksites, inhabited houses, public buildings, and other locations where elevators are needed. A typical elevator installation process in Finland features an elevator model without a separate engine room, in a travel height of approximately five floors. The procedure can be conducted by one or two installers. Internal installers usually work alone and follow through the whole process step by step independently. With subcontracted installers, work is carried out in pairs, when it is only required for one of the installers to have the qualification for elevator installation. In the APA area installation, tasks are divided to the mechanical fitter and the electrical installer. Installation steps are described according to the elevator installation instruction for the above specified model. It is used as a reference to understand the tasks installers must carry out.

Elevator models are sorted according to the different locations of machine rooms. The different possible locations are presented in figure 9. The rightmost model, PW (Passenger well), represents the model discussed in this section, where there is no separate engine room, and the machinery is located in the elevator shaft. The other models are Passenger top (PT), Passenger under (PU), and Passenger side (PS), where "passenger" describes the usage, and the second part describes the location of the engine room in relation to the elevator shaft.

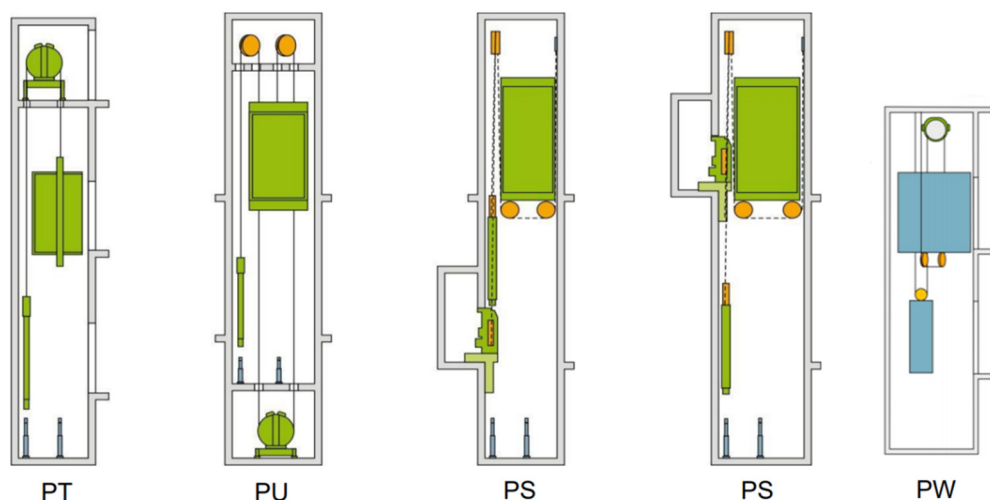


Figure 9. Passenger elevator types by machine room location (KONE Corporation, 2014)

The installation process is described for an elevator model named KONE MonoSpace®. The model was chosen to be described in this work, as it is the most common elevator type in the KEF business area, where most of the interviewees are currently located. Types of main parts might vary in other elevator models, but the size and weight mostly only depend on the elevator size and height. The installation procedures are similar, and most findings made in the elevator installation process within the scope of this research should be generally applicable in elevator installation. The process is described according to the general assembly manual of a KONE MonoSpace® elevator, with a typical travelling height of 12 meters, and number of floors being 5. Installation time is typically calculated to be around 120 working hours. The calculated time depends on elevator-specific features, such as number of floors, height, and design.

Prerequisites and assumptions done to describe the process according to the installation manual in question are presented in Table 3. The height and number of floors represent one of the most common types of installation projects taking place in Finland. The interiors represent a basic model of a KONE MonoSpace® elevator. The installer is assumed to have experience in installing an elevator of the type in question, and to work within allocated working hours.

Table 3. Assumptions for the described installation process (Adapted from KONE Corporation, 2007)

Elevator shaft	Prerequisites
5 floors	Error free deliveries
12 m travel	Working within allocated working hours
Single side entrances	

The installation process starts with arrival at the site, where tools and parts are received and stored, preferably in a location in close proximity of the elevator shaft. Landing doors must be covered in all floors to avoid falling in the shaft. A temporary hoist is installed for moving up and down in the shaft until the final elevator engine is commissioned. The shaft is plumbed using different tools to ensure straightness. Guide rails are installed from bottom to top, with the car and counterweight. After installing the machine and preparing for other parts, landing and car doors are installed. The electrical installation tasks containing electric and operation panels, shaft, pit, and car wirings, and signalization systems, are done last before roping and removing of the temporary hoist. Finally, safety checks, commissioning, and safety inspections are run. The steps are listed in Table 4. below. (KONE Corporation, 2015)

Table 4. Main installation steps in a KONE MonoSpace® elevator installation process

Step	Description
1.	Arrival at site, transporting tools and receiving delivery
2.	Covering landing doors
3.	Installing temporary hoist and overspeed governor
4.	Setting the lasers, plumbing, and establishing plumbing table
5.	Installing first guide rails and pit ladder
6.	Installing car sling
7.	Installing car and loading initial counterweight
8.	Attaching car to temporary hoist
9.	Installing aligning guide rails
10.	Installing car interior
11.	Installing topmost guide rails
12.	Installing pulley beam, and car sill
13.	Installing machine, and rope fixings
14.	Installing trunkings
15.	Installing landing doors
16.	Installing car front wall and door
17.	Installing electric panels
18.	Installing elevator shaft wiring, travelling cables, and signalization
19.	Installing car wiring and positioning system
20.	Installing pit wiring
21.	Installing car electrification and car operating panel (COP)
22.	Roping
23.	Removing the temporary hoist
24.	Safety checks and commissioning
25.	Safety inspection

Table 4. describes the main steps of the installation process. In the scope of this study, it is not relevant to present every installation step described in detail in the assembly manual. Thus, only main points necessary for understanding the course of the installation process are listed. The assembly manual also presents a “flexible man schedule”, in case there are two installers available instead of one. Steps highlighted in the table are suggested to carry out by the two installers together, when applicable. Table 4. is referenced in later sections of the research analysis to more clearly explain interview results.

The case company implements quality processes in installation, that define requirements for the site, the installer, safety measures, installation tasks, and result. Quality requirements start with the site requirements: storage space on the ground floor, clean and dry elevator shaft, sealed shaft door openings, provided three-phase power supply, and correctly positioned lifting hooks and ventilation ducts. The installer must be familiar with working practices and safety procedures of the site, and personal protection equipment must be available and in use. Quality checks and measurements during and after installation are done to meet the quality requirements expected by the customer, and to promote the quality of the elevator installation. Routine measurements include plumbing the shaft, measuring guide rails, car

sling, car, and counterweight, checking landing and car doors and their functions, commissioning the electrics, and measuring ride comfort. The checks are done by the installer or a supervisor and must reach the defined tolerances for the elevator to be approved for handover to maintenance. (KONE Corporation, 2016)

4.2 Product and installation process

Installation process is precisely defined in assembly manuals for each elevator model, and installation methods and special tools are developed for the tasks. Differences in building industry, and different trends in building types cause global differences in elevator model bases, but the process and methods developed specifically for the case company products are universally applied. It is meaningful to examine the installation process and its steps, as the methods and physical work is similar in all locations, even though the installer bases are different. Cultural backgrounds of the installers can also affect the factors that are held important and motivating. In locations, where subcontracting is the main source of installation workforce and where the installers' direct rewards are not defined by the case company, job contents become the matter of substance.

Installation process described in section 4.1 *Installation steps* above, features a KONE MonoSpace® elevator, which is the most common type in Finland, where most of the interviewees' jobs are located. Installation units can be roughly divided into two categories, new buildings, and elevator replacements in existing buildings. The process around installation is similar, but the surrounding site differs. In new unfinished buildings, the shaft and installation are located in construction sites, where there might be several other building projects taking place, and other contractors with each their own needs for space and tools in the site, while all maintaining safety measures. Construction sites also hold strict rules for site orientation and working permits. Replacement projects of old elevators on the other hand include their own challenges, with limited space, tight transportation routes, and interrupted use of the elevator. In the KEF area, where this type of division exists, installation environments also divide installers roughly in half. Where half of the installers prefer construction sites of new buildings, the other half prefers elevator replacement sites. Both types have their own challenges with the working environment but share the requirements of safe and high-quality installation according to the assembly manual.

4.2.1 Parts and tools

Elevator parts and tools are transported to worksites in wooden container boxes. The set of elevator parts arriving in installation site is presented in figure 10 to describe the size and amount of equipment. The interviews, as well as observations in the worksites revealed problems experienced with site logistics. In Table 4. *Main installation steps in a KONE MonoSpace® elevator installation process*, step 1. *arrival at site, transporting tools and receiving deliveries*, includes placing the elevator parts and tools to a proximity of the elevator shaft. In some locations, this is found difficult according to interviewed installers, due to lack of space for storing the parts and tools, and poor transportation routes. The storage location can be far from the actual worksite, or in indoor locations, be too tight to hold all equipment. Sometimes, the boxes containing parts and tools are placed outside, where they are exposed to rain and other weather conditions causing them to become wet or otherwise damaged.

Parts and tools need to be transported from the storage location to the elevator shaft in the order that they are utilized. Challenging routes, and unclear or conflicting communication from site management regarding routes and space were found to cause extra work and thus lengthen the total installation time.

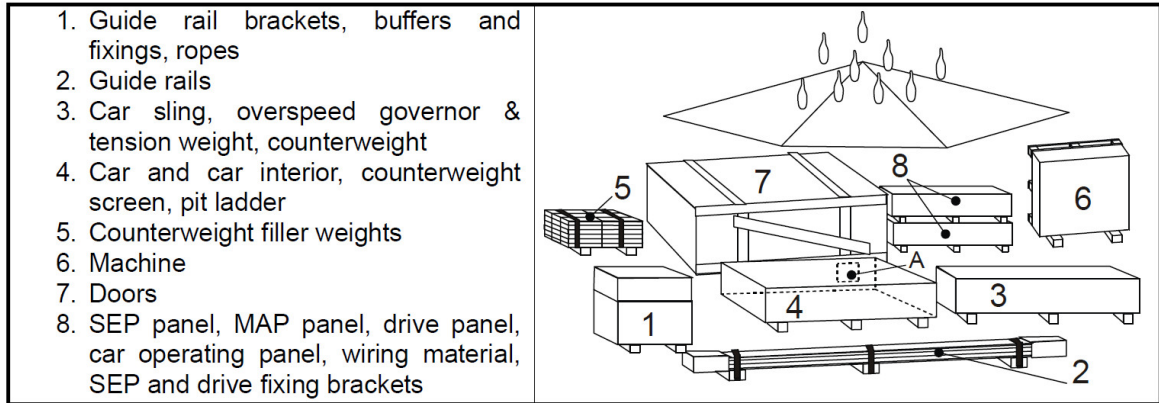


Figure 10. KONE MonoSpace® elevator parts standard delivery contents (KONE Corporation, 2015)

Figure 11 presents the four most significant themes extracted from the interview answers to the question “Is there a specific point in installation that always causes trouble?”, processed as described in section 3.3 *Data examination*. Bar diagrams are used in this work to present data obtained from the interview answers. Numbers presented by the bars represent the numbers of mentions of each factor, reason, or theme, depending on the question, in the 18 interviews. The counted amounts represent the total mentions in open questions, where given answers are not exclusive, and several factors can be mentioned by a single interviewee.

"Is there a specific point in installation that always causes trouble?"

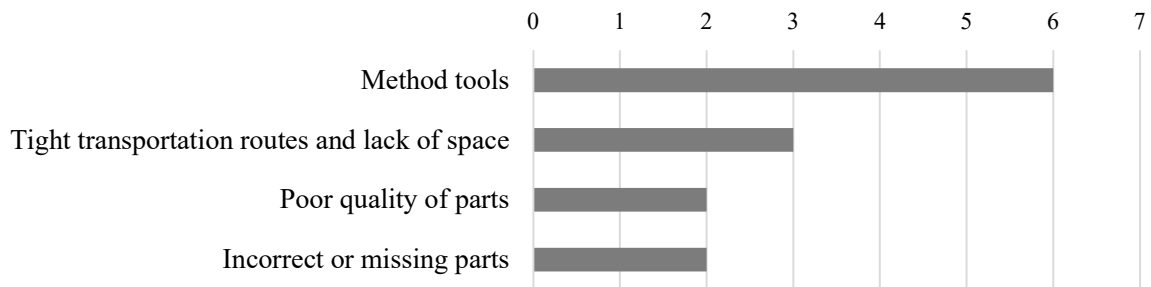


Figure 11. Extract from the interview results: Problematic points in elevator installation [only four most significant points included]

Answers showed that the most common reason for interruption is linked to method tools, which came up in six of the interviews. Method tools are special equipment designed for specific tasks in the installation process and are needed to go through the installation process according to the installation method described in the assembly manual. Examples of method tools include the temporary hoist and related parts, a special carriage to transport the elevator

motor, and appliances to help straighten the ropes. Each elevator model has its own specific set of method tools. Method tools are transported in similar wooden boxes as the elevator parts and according to the interview answers, are often in poor condition. The tools often require repairing, which negatively affects the installer's project schedule.

The three other points are linked to logistics and issues with parts and tools. This implicates, that apart from the physically demanding nature of the installation process, parts, tools, and site logistics cause most unexpected trouble in the installation process. Poor quality or absence of correct elevator parts also cause extra work.

4.2.2 Installation methods

As explained, installation processes take place following the assembly instruction. Installation methods are designed in detail to most efficiently carry out the installation process. In the learning phase of elevator installation career, the assembly manual is more closely employed during installation. Once the installer has learned the intended methods for each installation phase, the manual is less frequently utilized. It was discovered in the interviews, that installers have autonomy in the process, where they might for example change the order of tasks mentioned, as long as safety measures are followed.

The interviews showed evidence of a need to review some of the installation methods. It is experienced, that in some locations it is not always possible, or is very difficult, to follow the given installation methods step by step. There is no statistics or collected information on which steps usually cause trouble. Students, who of the interviewees had least experience in installation, and were currently learning the process, felt that learning from experienced installers was beneficial to figure out how to carry out the process and proceed through each phase. Although, experiences varied where it came to following the given methods. It was wished to have more detailed instructions for some of the phases. It was also proposed by a student, that a collective training to demonstrate installation methods were organized for everyone to clarify the official instruction.

4.2.3 Piecework payment

The local payment system in Finland is based on piecework payment, where there is a calculated theoretical timeframe for finishing each installation process. Installers get paid according to this calculation, regardless of the actual working time. This causes variation on the actual salary per hour, depending on how fluently the installation project goes. Working site differences and interruptions can cause significant variation in the actual installation times compared to the calculated theoretical values, affecting the realized payment for working hours. The piecework payment model is not globally applied in the case company, but different approaches exist in different areas. For example, in the APA business area, where two of the interviewees are located, installers' salaries are not dependent on the installing speed, but the installers are being paid constant salary. Subcontracted labor's experiences in monetary rewards is out of reach in the scope of this study.

As noted by Manzoor (2011), money has an incomparable value in motivating employees, compared to any other rewarding method. In the interviews, when asked about current motivations, salary regardless of its level came in as the first most important motivational factor. Answers to the question “What is the top motivator for your work right now?”, are presented in figure 12. Wording in this question doesn’t consider the amount of pay, but only aims to find the main reason for staying in the job. Salary, according to the interviews being the most important motivator, makes it meaningful to examine the payment methods and installers’ experiences of the subject. When it comes to current motivators, with financial rewards, challenging yourself came up second. It can be classified as an intrinsic motivator, in comparison to the extrinsic salary. The possibility to learn and overcome challenges in work again speak for the installers’ personalities and character to be motivated by intrinsic factors, such as self-development and pride.

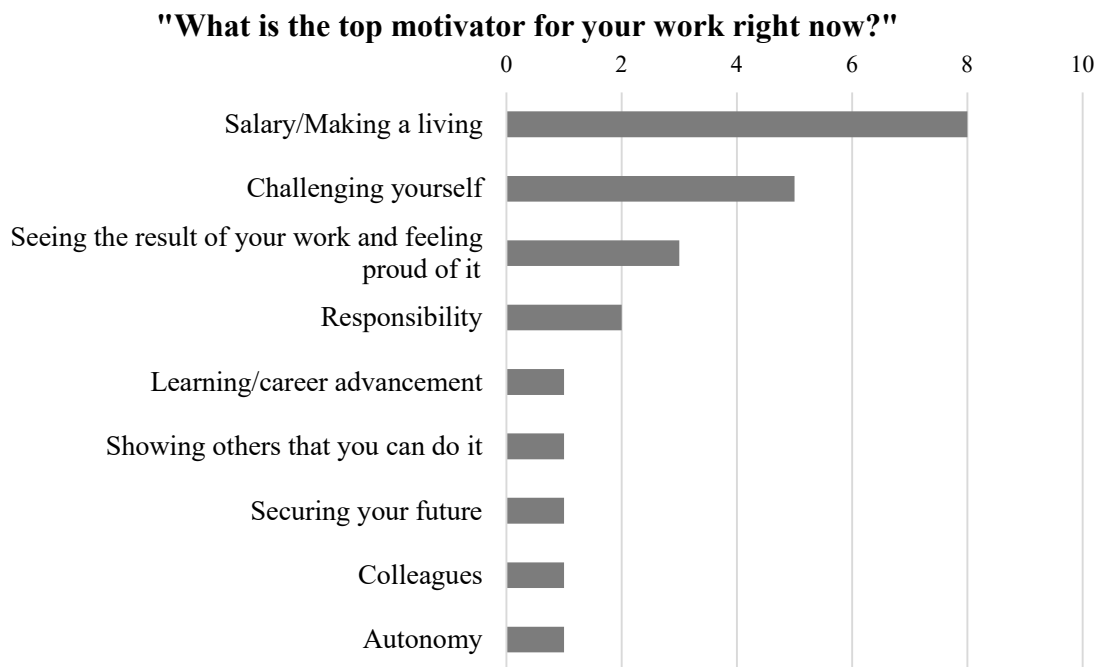


Figure 12. Extract from the interview results: Most important motivators in current job

In the answers to the question “How would you develop the installation process?”, the most common theme in answers included installation schedules and time objectives in the installation projects. Six most common found themes in the answers are presented in figure 13. Answers with only one person’s mention are excluded from the extract presented. A trend was found among installers with the longest careers, that change has occurred in demands of installation time. Schedules have become tighter, and to reach earlier income levels, in general more effort is required. The first and fourth themes in figure 13 containing dissatisfaction towards installation work scheduling and piecework payment, are directly linked to the payment method. Piecework payment and rewarding methods had the strongest visibility in ideas, when installers were asked what they would like to change in their job, indicating dissatisfaction with the reward model.

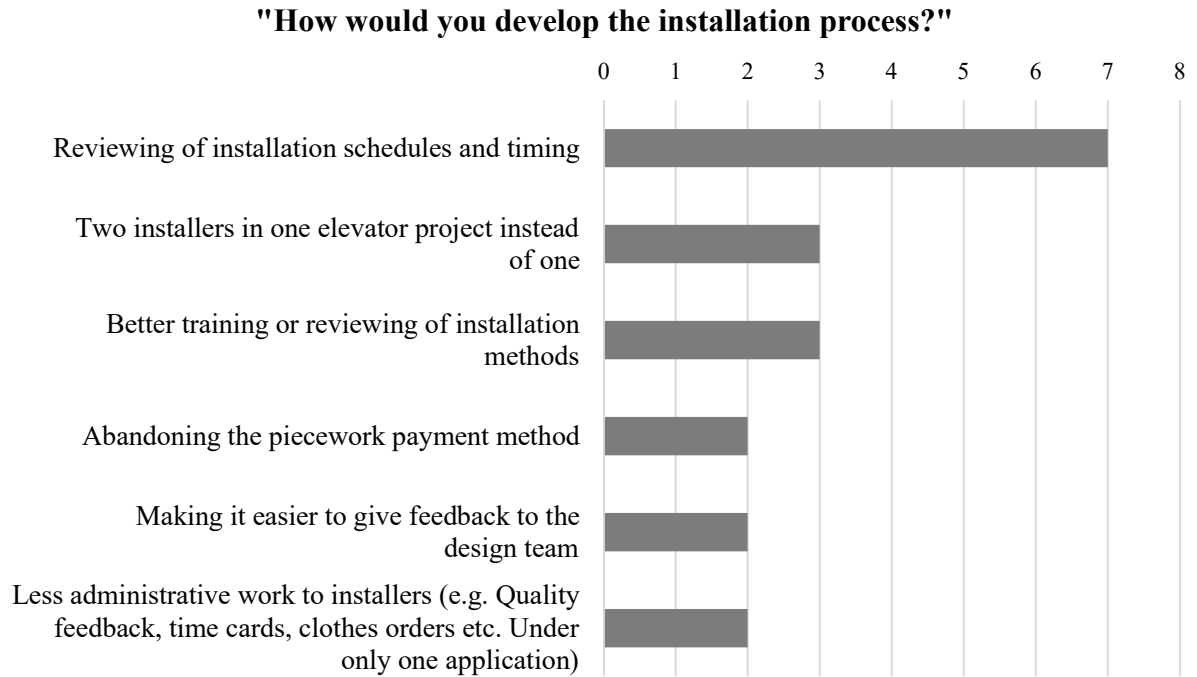


Figure 13. Extract from the interview results: Development suggestions [only six most common points included]

4.2.4 Management

Each supervisor in the KEF business area is responsible for a specific area's projects in Finland. Each installer also works mostly in one area, and thus under one supervisor. It became evident in the interviews that leadership by the supervisor and their relationship with the installer are in a significant role in constructing the work atmosphere. According to the interviews, installers are mostly satisfied with their supervisors' actions. A case was discussed, where conflicts between an installer and the supervisor disturbed fluent operation, but the problem had been solved by moving the installer to another supervisor's area. After the solving measures, under a new supervisor's watch problems had ended for both parties. The supervisor's role is emphasized as they are the installer's closest and mainly only contact to the organization.

Feedback was one of the topics inspected in the interview research. Feedback from the installers to the design team, as well as feedback from supervisors to the installers, are important channels for communication between workers and management. In the interviews, installers consistently pointed out that they don't get much feedback on their work, or only get to hear the negative comments. Also, feedback to the other direction from installers to the design team was experienced difficult to give or there was no interest in giving it. For those who were active in giving feedback, didn't know if it had reached the intended receiver. As the two last themes in figure 13 indicate, giving feedback is currently experienced inconvenient by some of the installers.

4.3 Employer and job image

The employer and job image were inspected in the interviews to understand installers' attitudes towards their employer. Ideas of the company and job proved to be in a decisive role in choosing careers. Figure 14 below presents the interview answers to the question "What was important to you when choosing a career in elevator installation?". Good image of the employer, and interest in the technology occurred as reasons for choosing a career in elevator installation, both in six of the interview answers, indicating the importance of preconceived ideas of the employer and job.

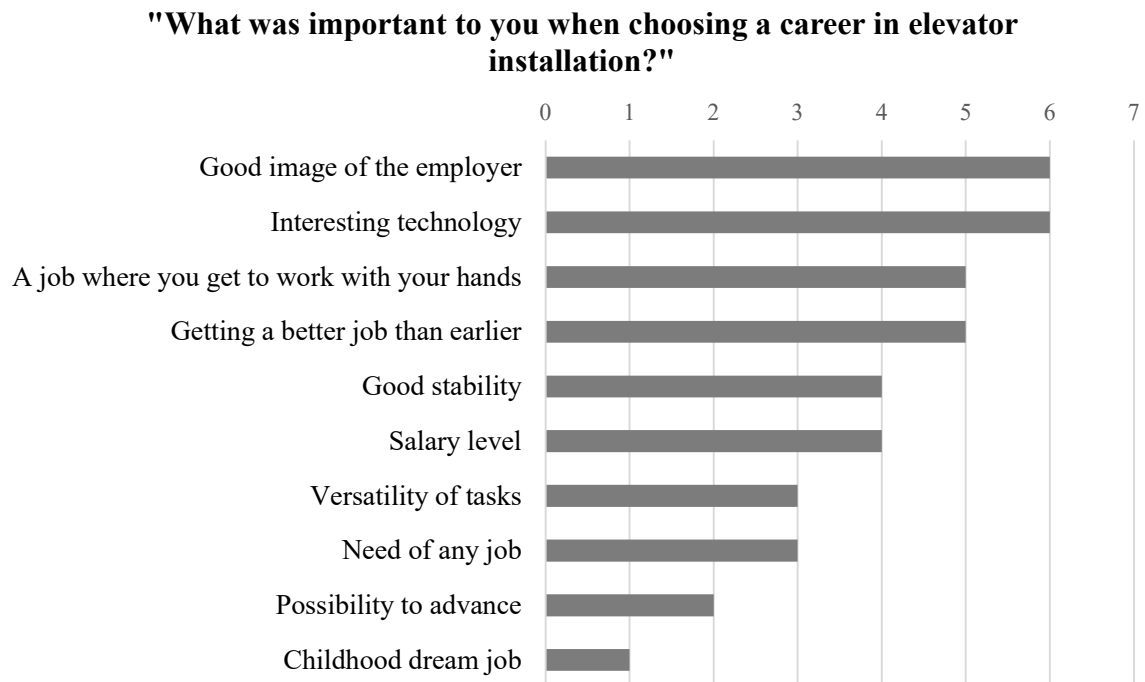


Figure 14. Extract from the interview results: Important factors affecting career decisions

The interviews showed a trend, that installers were not very familiar with installation tasks before applying, but the employer brand played a significant role in the decision. Among the Finnish installers and students, the case company is thought to be an innovative Finnish company, that has also succeeded globally. Interest in the products and technology was also found common in the interviewee group. The idea of innovative high-quality products had a connection to the overall idea of the company. The two most often occurred factors affecting the decision of starting a career in elevator installation, indicate that ideas and image of the company guide the decision-making process. In the application phase and start of careers, they appeared to be more important to installers than physical benefits in the job, such as salary level in the field. In the interviews it was revealed that the company image was not only relevant in seeking jobs, but also in maintaining motivation. It was mentioned that the company image affects installers' pride in installed units and their own work.

The fact that interest in technology and the nature of the job where you get to work with your hands, were considered reasons to choose elevator installation, might describe the installers' personalities. As appears based on the answers presented in figure 14, applicants have a previous idea or understanding of the job, even if it later turns out to be inaccurate. The answers indicate, that in the beginning of their careers, most installers sought manual work and wanted to have learning opportunities.

Most of the interviewees knew someone working in the case company before applying. Out of those who studied or had graduated from the internal industrial institute, 55 percent had heard about the possibility for such education from unofficial word-of-mouth sources. The image that current employees give to their friends and families about the employer, has high importance to the company, since many applicants have this type of background knowledge and information. This implies strongly, that also outside the interviewee group, employees of the company give out effective signals of the employer through their own experiences. Figure 15 presents the interpretations of answers to the question "What kind of image do you think the company has as an employer?". There were no answers, that would implicate a negative image. Regardless of some negative experiences that were revealed in the interviews, the employer very clearly has a strong positive image among employees.

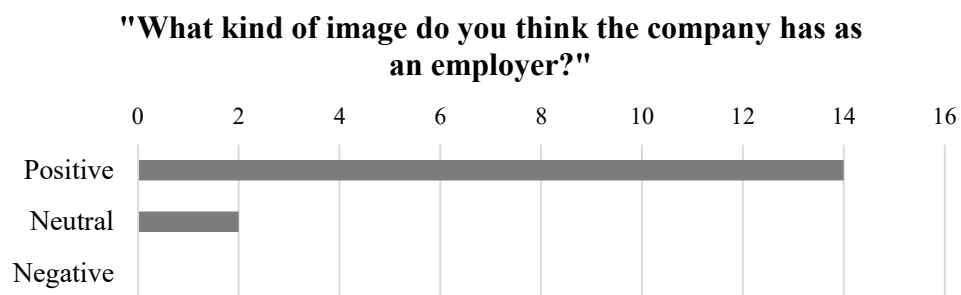


Figure 15. Extract from the interview results: Employer image (internal installers only)

4.4 Careers

Career expectations and changes in motivators in the course of life were under inspection in order to understand what the most important motivators for the installation job are. Career satisfaction, according to Barnett and Bradley (2007), as described in section 2.1 *Career Opportunities*, and illustrated in figure 3. *Career satisfaction* (adapted from Barnett and Bradley, 2007, p. 621), results from a combination of internal objectives and career expectations driving their proactive behavior, and the organization's support for personal development. The interviewed installers talked about their experiences and thoughts about their own careers and expectations for the future. In this study, career inspection only covers internal installers. Subcontracted workforce and external career development are outside the scope of this research.

The internal installers and students were asked if they would start the same career again, had they the chance to choose now. It turned out, that despite occasional setbacks, 12 of the 16 internal installers or students were pleased enough with the current course of their careers.

Figure 16 presents interview answers to the question “Would you choose the same career again?”. Interview answers are presented in pie charts, when the answers are exclusive, and only one output per interviewee can be counted. Answers indicate that the job contents correspond to most installers’ expectations. The answer, that the interviewee would like to do something else for the same employer, signals again about a good employer image regardless of possible unsettlement with the current job. Even though an installer might not find their own job description or course of career ideal for them, their conception of the employer is still positive.

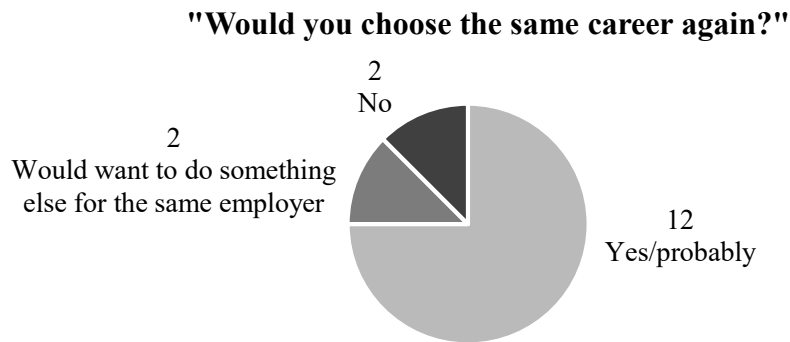


Figure 16. Extract from the interview results: Career choice satisfaction (internal installers only)

4.4.1 Career paths

The case company has an internal education program for elevator installers in Hyvinkää, Finland. Completing the education takes approximately two years, and contains study periods in the industrial institute, as well as training periods at worksite with experienced installers. Approximately 70 percent of the education time is spent in vocational training in the field. Applicants must have a previous vocational degree in electrical installation. Students are selected from applicants, who take an entrance exam and a practical aptitude test. Graduating from the program gives readiness to work as an elevator installer, and most installers’ career in Finland starts in the institute. Seven of the ten non-student Finnish installers participating in the interviews have graduated from the industrial institute, between years 1986 and 2019.

A typical installation career in the interviewee group starts in the industrial institute, after which the graduated installer proceeds to install different models of elevators in their own designated area, until the job becomes too heavy and they have to change tasks. Installers have also come to work in elevator installation through apprenticeships from other tasks in the case company, and through company acquisitions.

Throughout elevator installation careers, two patterns in motivator changes were recognized. The patterns are illustrated in figure 17. In one group, motivators for starting a career in elevator installation are found in the interest in developing own skills and possibilities. Motivators then shift towards monetary rewards, when the importance of steady income increases in different life situations. In the other group, the primary motivation in the beginning of career is the monetary rewards, which then shifts to liking the job and its challenges. Even

though there are recognizable patterns, not all interviewees' motivators followed them. Also, a group where motivators didn't notably change, was found.

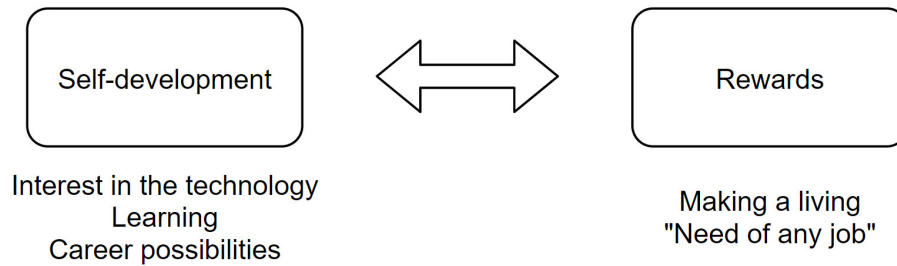


Figure 17. Motivation factors' change patterns

4.4.2 Ending of installation career and future expectations

In general, interviewees feel that the case company is a reliable employer and believe that their jobs and careers are secured. In some cases, the fact that the job is physically demanding, sets limitations to continuing in the job. It was experienced inevitable, that at some point of the elevator installation career installers need surgical operations for their knees and shoulders due to the tough work. It was also discovered in the interviews, that installers were confident they would have to quit in their job as it becomes too heavy. It can be interpreted in the answers to the question "What is the worst part in elevator installation?" that the physical toughness of the job is generally disliked among installers. Answers are presented in figure 18. The most common theme, when searching for the least-favorite parts of the job, is linked to carrying and installing the heaviest parts of the elevator. These steps in *Table 4. Main installation steps in a KONE MonoSpace® elevator installation process*, are located in the beginning. After step 16. *Installing car front wall and door*, all of the tougher mechanical installation steps of the installation have been completed. The clearly least-liked part of the job being the toughness, that also causes fatigue of installers, indicates that it should be held as one of the most important development points.

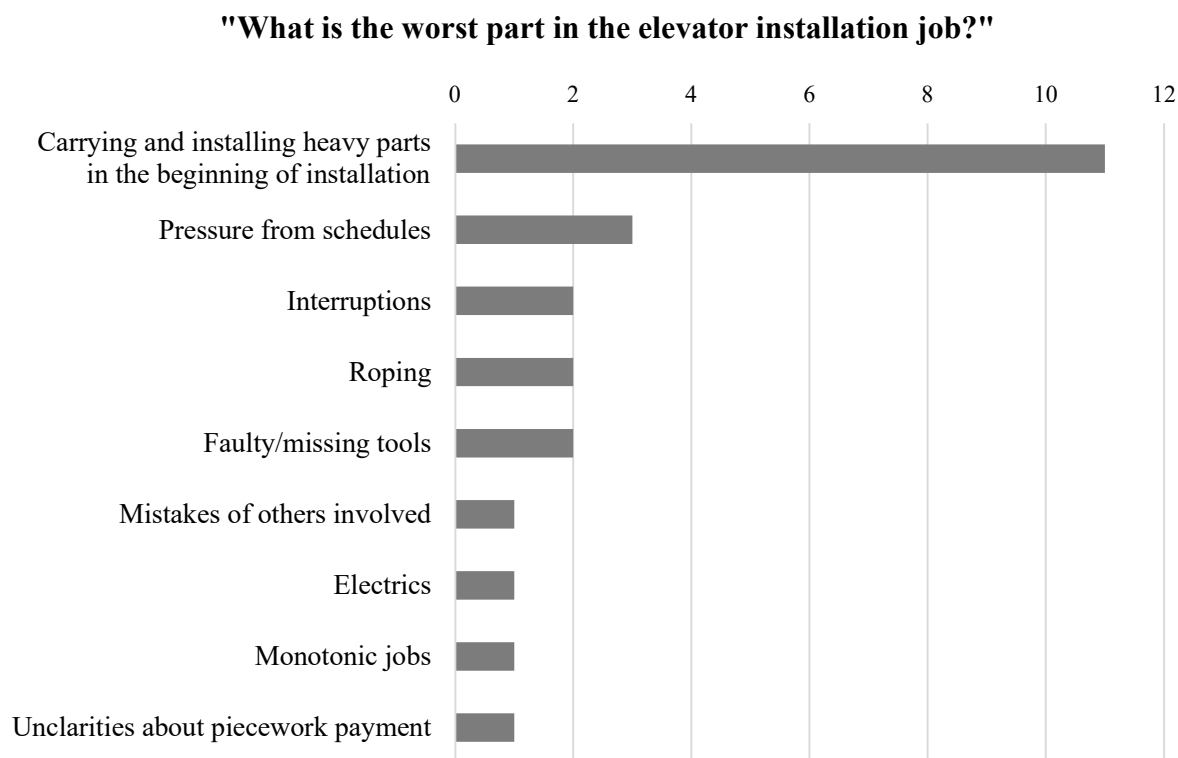


Figure 18. Extract from the interview results: Worst part in elevator installation

As installers were aware of the need to change tasks, they were asked what kind of ideas and expectations they had about their working life future. This question aimed to examine installers' thoughts of the employer and their own value in the work market. Of the four students, two hadn't thought of the ending of their installation careers yet. The other two, anyway, had already picked up the idea that they will probably not be capable of doing the job until retirement. Of the Finnish installers, everyone was conscious of possible or even probable future difficulties in meeting the physical demands of the job. The situation was felt differently among the Australian interviewees, as the process and task distribution differ from the model in Finland. Of the Australian interviewees, both had already relocated in office-based tasks, but were with the idea that staying in installation until retirement would have also been a viable option had no promotions been offered. The subcontracted installers found the tasks physically demanding as well, and were similarly aware of their own assets for the installation job. Their ideas of the future were not as confident, which is explained by their different employer and their relationship to the subcontracting company.

In figure 19 there is presented the basic ideas that the internal installers and students had about their work life futures. The subcontracted installers' answers were excluded, as their career possibilities were significantly different, and career advancement in subcontracting companies is not in the scope of this research. The Australian interviewees both had experience in career development and had already had the chance to advance in their careers. Their reasons, anyhow, for changing tasks were in self-development and taking on new challenges, rather than being unable to continue in the old tasks.

Different ideas about moving to other tasks from installation came up. As presented in figure 19, the most common future idea was to relocate in the field in less heavy tasks, e.g. in maintenance. Other possibilities were seen in office-based tasks as supervisors or experts. Other office-based positions were also pictured to be achievable through further education. The answers again spoke about confidence in the employer. Only one of the internal employees' answers represented the idea of leaving the case company for another employer.

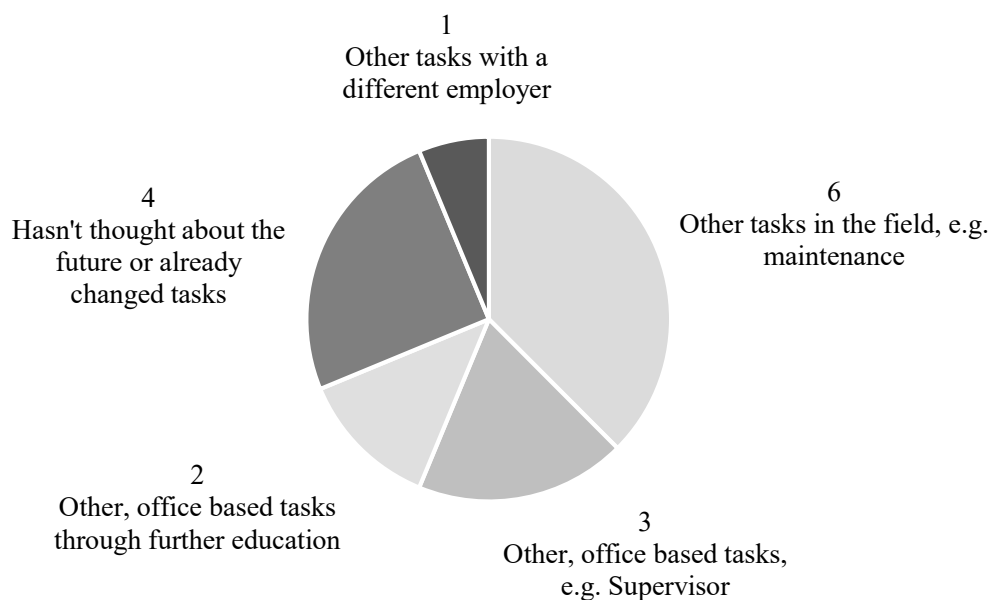


Figure 19. Extract from the interview results: KONE installers and students' ideas about changing tasks [Subcontracted interviewees excluded]

4.4.3 Subcontracting

In Finland, subcontracted workforce covers approximately half of installations. The situation has developed relatively fast, as only ten years ago, the share was 5 percent. The change has also affected internal installers' jobs, as subcontracted labor is usually placed in bulk projects, which then are not left for the internal installers. In the KEF area, mainly the same subcontracted installers are employed, and usually they don't have other tasks in addition to elevator installation. Locally, the subcontracting companies used are rather loyal to the case company, and rarely have other customers. This pattern devotes the installers to elevators. For the main contractor, the arrangement brings flexibility and cost benefits, which are the main reasons for using subcontracted labor.

The interviewed subcontracted installers' jobs in the field are similar to the internal installers'. The most significant experienced difference is the employer, and who the installer answers to. Both subcontracted installers interviewed have only worked in the case company, elevator installation for the time they have been listed in the subcontracting company. The subcontracted installers were not as confident about their job security and career possibilities

as the internal ones. The small subcontracting company only has a limited amount of different positions, and relocating in other tasks, as elevator installation becomes too tough, was found unlikely. Working for a subcontracting company also naturally increases the level of dependence on other businesses, which affects the actual job security and not only the feeling of it. Regarding the physical installation process, very similar answers to internal employees' came up about the toughness of the job.

4.5 Personal motivational space

The personal motivational space includes motivational factors in the personal level. Self-development, work-life balance, and variety in the tasks are examples of the experienced personal motivating factors among the interviewees. The possibility to solve problems creatively, and autonomy in the job are felt supportive to motivate and engage to the job. The decisions to become an elevator installer, and to stay in the job, originate from the employees' motivations. In addition to the motivation factors regarding the earlier introduced process and reward system, internal motivators are crucial in the decision-making process.

Success in both, personal and working life supports the overall employees' well-being and motivation. Work-life balance is experienced important, and among the interviewee group in the case company, mostly well-functioning. Regardless of the consciousness about health issues due to heavy work, installers felt that their work-life balance was mainly good. Flexibility from the employer regarding holidays and personal absences, optionality of working overtime, and work benefits were mentioned as supportive factors for work-life balance. Some installers anyway felt that long commute, and tight schedules cause stress even on their free time. Among the subcontracted installers, long periods away from their families were experienced as a disadvantage in balancing work with personal life. Overall, installers were rather content with the effects of their job on their personal lives.

4.5.1 Autonomy in work

Autonomy of installers in the tasks appears as the freedom to independently plan their daily tasks within the outlines of a given project. Installers mostly operate alone and have the responsibility to follow through the assembly steps while also following all safety guidelines. Autonomy regarding the process is also connected to the payment method. It is up to the installer to finish installation projects in the calculated time. Different attitudes were found towards the freedom under responsibility. Some of the installers felt that their efforts in trying to keep up with the demands were never adequate and caused stress. Others again had a different, more relaxed approach, where the installers allowed themselves more clearance where it came to staying in the schedule.

It was mentioned in several interviews, that the feeling of responsibility and being trusted is experienced motivating. It is felt that absence of supervision most of the time in the worksite makes the job more pleasant with the feeling of being in control of one's own work. Also, the network of other installers available for advice is experienced important. Succeeding in installation tasks without help or controlling from the supervisor was found to increase the confidence of installers regarding their proficiency.

Most of the interviewees agree that there are opportunities for personal development. Professional skills and diversity of expertise with different products or elevator models, is experienced to constantly increase. Installers among the interviewee group clearly get more confident over time, as experience increases. It was mentioned by several installers, that learning in the job increases motivation to start the next projects. Digitalization was mentioned to be seen as an opportunity for new learning platforms. Not all installers anyhow, are eager to learn new tasks. By some installers, the current job is found challenging enough, and further trainings are seen as a waste of time.

Feedback, and especially lack of it appeared in the interview answers. There is a consensus, that feedback is important for developing the professional skills. Some installers have been left with unawareness if the solutions they made in the installation were good or not. A case came up, where a customer had given positive comments on the installation, and the installer only heard of it many years later. Naturally, negative feedback finds its target easier, and many installers would like to also get more positive and neutral feedback in order to develop their skills.

4.5.2 Professional pride

In the search for motivators in starting a career in elevator installation, it was discovered that for many installers, the possibility to see the results of their work was important. The nature of installation work attracts employees, who are satisfied by seeing the results of their own work. Figure 14, presented earlier in section 4.3. *Employer image* presents the answers to the question “What was important to you when choosing a career in elevator installation?” and getting to work with your own hands was found among the most common answers. It is a personality trait to get motivated by seeing the concrete result of your own job, to which elevator installation offers the chance. Half of the interviewees named finishing or commissioning the elevator as the best part of their job, which supports the theory. The answers to the question “What is the best part in the elevator installation job” are presented in figure 20, illustrating the dominance. Elevator installers are assembling and finishing the end product of the case company, that is seen by the end users. This visibility offers a unique standpoint for professional pride.

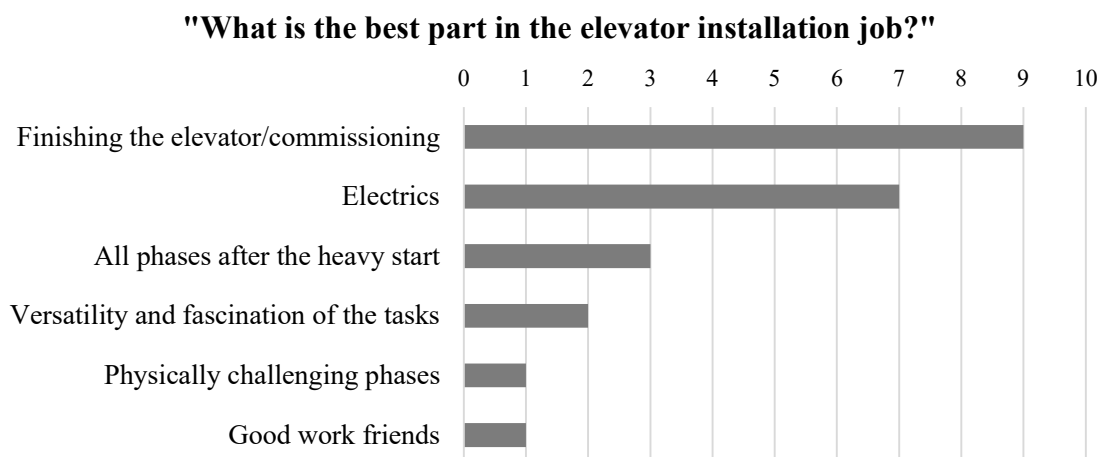


Figure 20. Extract from the interview answers: Best parts of the installation job

Pride in own work was also among the answers to the question “What is the top motivator for your work right now”, presented in figure 12 earlier in section 4.2.3 *Piecework payment*, showing that being satisfied with the work’s results positively affects the installers’ motivation to stay in the job. Among the interviewees, excitement towards their old successful projects could be seen. Some of the installers told, that when they feel proud of their installed units, they might go see the elevators in use, and show them to their families. It is obvious that pride felt towards the job contributes to the motivation of performing well and staying in the industry.

It was also asked, if the interviewees feel proud of their job, and a clear majority did. Figure 21 presents the answers to the question “Are you proud of what you do?”. 14 out of the 18 interviewees said to be proud of their work. The “No” and “Not always” answers were linked to the quality of elevator parts and design. Functionality of certain door types, issues with sheet metal parts’ straightness, and overall look of the most inexpensive elevator models were mentioned as culprits of decreased pride. Pride was also mentioned by several installers to increase when working on high-end elevator models. On the contrary, installing basic and the most inexpensive elevator models was mentioned not-as-motivating.

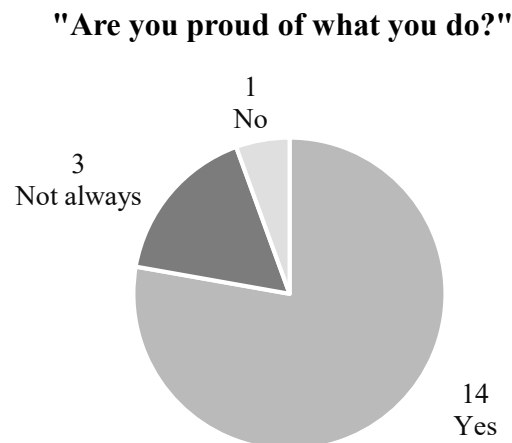


Figure 21. Extract from the interview answers: pride in installation work

Pride is experienced through both, own achievement and the company image. In Finland, where the employer image of the case company is very strong, the image naturally has a stronger impact on the feeling of pride. It was mentioned in answers to other questions as well, that installers feel they are working in the “best possible company”. This type of pride originates from the image that employees have of the organization, and in best case, promote the employee to give their best efforts.

4.6 Global differences

The installation process and functions around it vary between areas in the world. As the case company is based in Finland, it is only a global business and has the image benefit in the KEF area. According to the interviews it is viewed as an innovative, modern company in other parts of the world as well but doesn't enjoy similar recognition and reputation. Reasons for different process models lie in the local business models, working cultures and habits. It is meaningful to take a global approach to the installation process and working schemes in order to understand the relevance and importance of found motivational aspects in the installation job. The installation process itself is carried out by different types of teams, where job descriptions, responsibilities and tasks might vary, while also different kinds of remuneration schemes are applied for internal and external installers.

4.6.1 Installation process

The share of subcontracted employees is one of the main variables in installation operations globally. As presented in figure 22, distributions and total amounts of internal and subcontracted installers vary greatly. All of the interviewees operated in CNE (Central and Northern Europe), or APA (Asia Pacific) business areas, representing models where internal installers are trained in the industrial institute or internship programs. In those, and SEMA (Southern Europe, Middle East and Africa) business area, subcontracted labor force has been obtained to quickly answer to the constant growth in need of installers. Subcontracting has also been justified by the flexibility it brings to the organization in case of fluctuation in sales and thus installation operations. The installer bases in these areas consist of both, internal and subcontracted installers. It could be simplified, that internal installers are placed in projects, where higher level of expertise and experience is required, and subcontracted installers are placed in general, recurring projects. Naturally, variation also exists in practice, and the roles of subcontracted and internal installers are constantly developing as change in operation models is taking place. The trend of increased share of subcontracted installers opens new questions about the motivations and obtaining new installers, as their working models are different from the traditional model of internal installers.

GCN (Greater China) and ENA (North America) business areas make very opposite exceptions to the introduced practice, as can be seen in figure 22. In the GCN business area, virtually all installation is executed by subcontracted workers. In North America again, unions and legal matters complicate the use of subcontracted labor, making nearly all installation executed by internal installers. Incentives for outsourcing or keeping own workforce can be affected for example by local working cultures, business models, traditions, and regional economy situations. Business and labor force models in different business areas are not more precisely defined for the scope of this research, but it is important to understand the basic differences and volume variation of different labor sources in the case company's business areas.

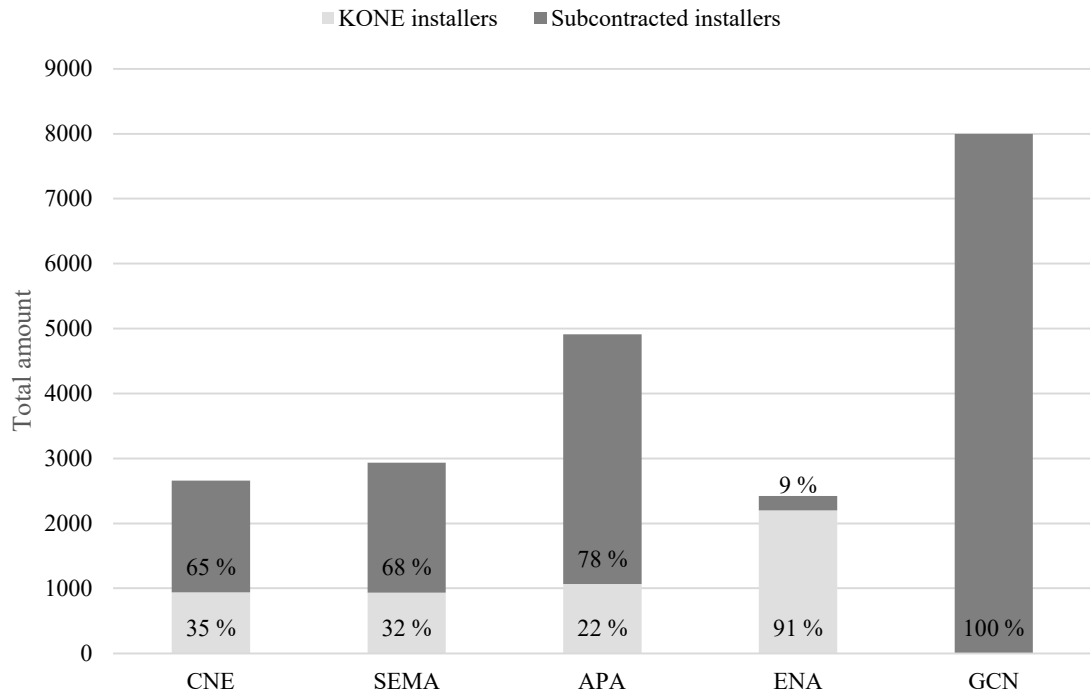


Figure 22. Shares of internal and subcontracted installers in the case company's business areas globally (KONE Corporation, 2020)

The installation process itself and its tasks are distributed differently in different locations. In the groups presented in Figure 22, the interviewees in this research represented APA internal installers, CNE internal installers, and CNE subcontracted installers. The Finnish internal installers are accustomed to finish the installation process independently from start to finish. The interviewed CNE subcontracted installers again usually work in pairs with one project. In the APA business area, installation tasks are divided between mechanical fitters and electrical installers, where the fitter performs the mechanical installation tasks, and the electrician takes care of the electrical installation. More working models and local practices might be applied in different locations, but the tasks that need to be carried out remain the same regardless of the employment model.

4.6.2 Motivation origins

Globally, plans for motivating installers are already applied. For example, in GCN business area, where virtually all of the installers are subcontracted workers, high competitiveness is used to achieve better results. Schemes are applied, where individual installers or subcontracting companies are compared to each other and listed according to results. In western cultures, a more individual approach is needed, and similar programs could easily cause opposition due to more strict privacy legislation and values. In the interviews, it was shown that in the interviewees' base area, KEF, a part of CNE, that self-accomplishment -themed factors are experienced motivating. General motivation factors among installers globally are difficult to define, but directions can be defined according to existing models and theories, as well as results of this interview research. Further in this study, the results are discussed to identify potential guidelines for developing installation work.

5 DISCUSSION AND RESULTS

The interview answers presented in the previous section were analyzed and interpreted in order to get a comprehensive image of installers' motivators for working. Motivation was found to consist not only of the salary, but also other parts of the job. Salary plays a significant role, but problem-solving, seeing the result of own work, and responsibility are also experienced motivating. In the financial point of view of the organization, raising salaries is only efficient until some point. Also, one of the objectives of this research was to examine other possibilities to increase installers' motivation and thus commitment, which is discussed in this section.

Key issues were found by analyzing the installers' experiences. A workshop was organized in order to more efficiently interpret the interview findings and their relations to different functions inside the organization. Representatives were invited from operations planning, the industrial institute, human resources, installation supervision, sourcing, service design, and quality process functions. Material obtained in the workshop was used in this result and discussion section of this work. The purpose of the workshop was to widen perspectives regarding the research, and not collect new data. Factors named as motivating or demotivating, and process steps and parts found pleasant or unpleasant, were discussed. A framework for the installers' work motivation, and its factors was constructed, to be able to point out the improvement potential in different functions related to the installation work. The outcomes of the workshop contained discussion on perspectives and conclusions drawn from the interview data and were utilized in this section.

The findings are discussed in light of the original research questions first presented in section 1.2 *Objectives*. The questions guide the presentation of installer's motivation and employee satisfaction in this section. The questions can be roughly divided into two main processes, where research questions a) and b) first consider the factors affecting installer's motivations to stay in the job,

- a) *Which factors affect the workers' motivation and commitment level?*
- b) *How should the process be developed to keep employees motivated and committed?*

and questions c) and d) focus on motivations to start a career in elevator installation.

- c) *How is the job seen from the outside?*
- d) *How should the process be developed to attract a wider variety of workers?*

5.1 Discussion of main findings

The findings done according to the interview answers led to constructing a motivation model among installers. The model is presented in figure 23 below. In the first level, motivation is explained by concrete examples of rewards. In the second level, motivation in the case of this study is divided to processes, where the motivators detected in the first level might be applied. The third level describes the challenges defined in order to find answers to the research questions. It is challenging to present a universally applicable model, as the theme is

subjective to each installer. Anyhow, based on the interview answers, a presentation of the multilevel subject was constructed, and is more precisely explained below.

Motivators are divided into intrinsic and extrinsic. Intrinsic motivators originate from within the installer and refer to doing something without any obvious external reward. Intrinsic motivators found among the interviewee group towards the installation job were the possibility to learn, interest in the technology, pride in own work, and most importantly, sense of achievement in finishing elevators. The intrinsic motivators are dependent on personality, and what the individual finds intrinsically enjoyable. Among the interviewee group, similar intrinsic motivators were detected throughout the data. This leads to the conclusion that certain characteristics, connect most of the installers. It is in a key position to understand the preferences and characteristics that support gravitating to installation type of work in order to most efficiently find most suitable applicants to the job.

Extrinsic motivators are easily measurable, controllable variables offered by the employer. Salary, benefits and deadlines directly motivate installers to execute the appointed work tasks. Praise and responsibility are as well extrinsic motivators offered by the employer but can also function indirectly by invoking intrinsic motivation such as sense of achievement. The most obvious extrinsic motivator is salary, which essentially belongs to the concept of working. Remuneration schemes vary in the case company, which offered the chance to evaluate different models. Compensation as a whole, anyhow, includes both, intrinsic and extrinsic rewards. Their relationship and balance of work and reward experienced by the employee are important to evaluate in order to understand the motivations of installers.

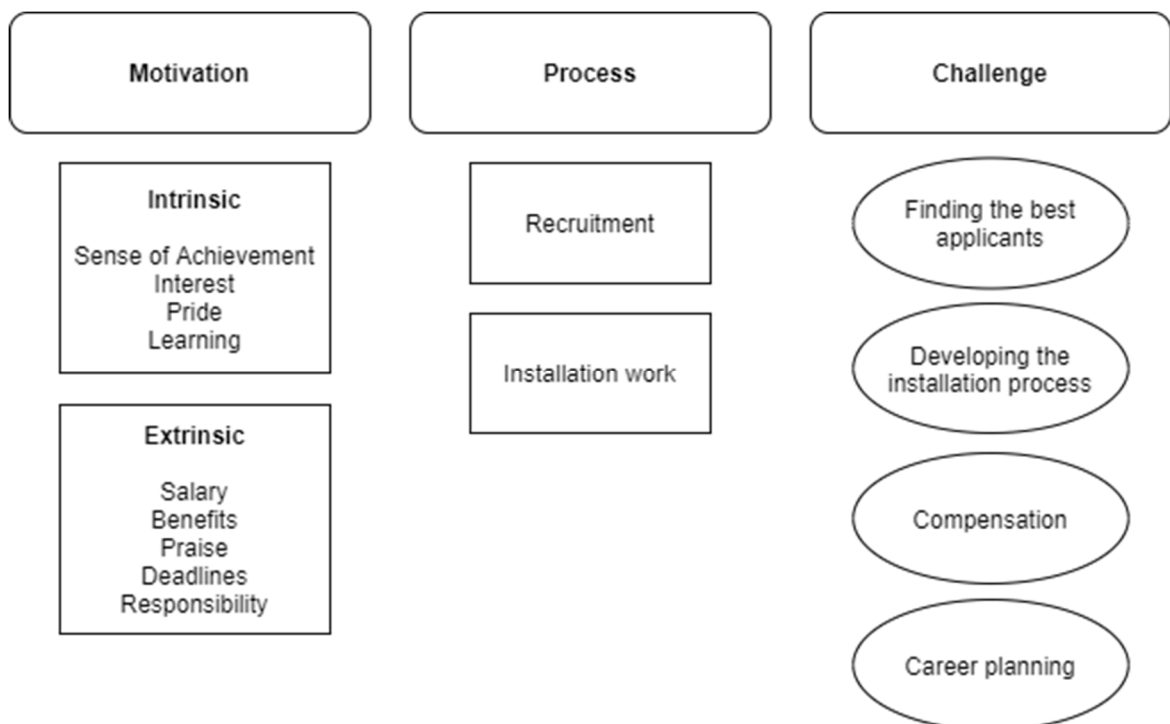


Figure 23. Motivation model of elevator installers

The process level illustrated in figure 23, contains the levels of recruitment and the process. Motivations and reasons are searched in two processes, the phase where installers are recruited into the company, and are making the decision to become an elevator installer, and the actual working phase, where the installers operate in the field and decide stay in the job. Both, intrinsic and extrinsic motivators are found in both of the processes. By discussing the findings and conclusions drawn from the interview results, it is the aim in this section of the study to identify the motivators to be reinforced in order to make the job more appealing in both processes.

The challenges named in figure 23 represent the research problem. By discussing the challenges, answers are sought to the original research questions. The four challenges are linked to both processes, and both types of motivators. The multilevel questions require multilevel solutions, which is why the challenges are discussed separately and solutions addressed from different viewpoints.

The main problem and question is to find means to make elevator installation more appealing. From the interview data it can be concluded that in the interviewee group, positive experiences of the job are experienced stronger than the negative ones due to the heaviness and stress caused by the payment method. A great majority of the installers are happy with their career choice, as presented in figure 13. *Extract from the interview results: Career choice satisfaction (internal installers only)*. By inspecting the positive aspects, and finding ways to reinforce them, the process can be modified to better suit the installers motivations. In the case company, in locations where the employer image is not as strong, and subcontracted installers form the majority of labor, it has been detected that installers are not as committed the job and might leave more easily to other fields. As the financial rewards are more difficult to increase, especially with subcontracted labor, the focus should lie in the installer experience of the job.

5.1.1 Finding the best applicants

It was discovered in the interviews, that among Finnish installers, the good image of the case company was in a significant role in making career choices. Elevator installation again, is a rather unknown profession for anyone outside the company. According to the interviews, the image that applicants have of the job prior to working is a combination of electrical installation and construction work. As most of the interviewed installers had found their way to the company through friends or relatives, a conclusion can be drawn, that their image of the job was built based on others' experiences and words. As the employer image plays such a large role, it should be considered, how and where the image originates from, in order to address a wider variety of applicants in the recruitment process. So, in a key position to find more potential applicants, is to modify the image of the employer and job to better correspond to the company goals in installer diversity. Wu *et al.* (2019) stated that diversity in teams leads to task conflict and further to increased performance, which is a supporting argument for increasing diversity among elevator installers. Currently, the case company has a strong image as an employer, and an asset in salary levels offered in the KEF area, where most of the interviewees work. Given the premises, finding applicants should, in theory, be very easy. The goals for changing employer and job image must be defined in order to develop job marketing strategies.

Currently, the selection procedure of students to industrial institute is seen well-functioning, and the selected applicants most often prove the choices to have been successful. As the research question still remains, how to attract a wider variety of applicants, mainly signaling to the male-dominance in the field, it can be concluded that the current image mostly attracts applicants similar to the current installers, while also other potential groups might exist. Should the target group for marketing the job grow, systematic image building must take place. More groups could be addressed through advertising in channels, such as the social media, where targeting specific audiences is rather simple. The current situation and existing resources could also be harnessed for reaching new groups. As mentioned, according to the interviews, most installers are first attracted through other people working or having worked in the case company. The image that these people have of the job, are then passed on, and the jobs get recommended to only those, who suit the mentioned peoples' ideas of an elevator installer. Methods could be developed, to change the ideas of these indirectly recruiting connections. Internal campaigns, for example video material representing a more versatile image of installation tasks, employees, and career possibilities, could be distributed in and outside of the organization, to steer the existing ideas towards a more varying installer base.

The contents of marketing material easily emphasize the technology leadership, and the idea of a stable workplace. These are naturally important assets but might on their own fail to attract many potential applicants. The case company has the possibility to offer long careers, and possibilities for career advancement do exist for ambitious workers. These possibilities could be exploited also in the marketing of the job. Installation should be presented as more versatile and suitable also for different personalities, as it really is. The existing ideas only restrict the growth of the target group.

Focusing on quick actions and forgetting about structural changes in the installer base, electrician students in vocational schools can be informed and targeted earlier, before graduating. Since the elevator installer education in the industrial institute requires an earlier degree in the electrical field, electrician students are a natural target group. It has been suggested that more training jobs for electrician students could be offered in order to create more visibility. In this scenario, current installers would also get extra help for the heavy parts of the process.

Outside of the KEF area, where the company cannot be described as a local business, the image is naturally different, and doesn't have a similar effect on the applicants. Especially in locations, where most of the installation force is covered with subcontracting, the focus should be shifted from the company image towards the process and the job itself. Findings in the interviews regarding installation can be assumed to hold true outside the interviewee group as well. It is probable, that applicants globally, internal workers, but also subcontracting companies, share similar motivators to the interviewees, as they are applying for nominally the same job. In marketing the installer job globally, other found motivators could be deployed, such as technical advancement of the products and the possibility to see the result of your work. As the case company still wishes to employ the best possible installers, cooperation in the subcontracting companies' recruitment strategies and training programs could be considered.

5.1.2 Developing the installation process

The obvious development direction of the installation process, according to the interviews, is towards making it less heavy for the installer. Soon after starting in elevator installation, it is realized, that it is not possible to stay in the job until retirement age. Students of the industrial institute drop out yearly as they realize the heaviness of the job. Globally, subcontracted installers, who are not committed to the company, easily leave for other tasks. Heavy parts and tight transportation routes make the installation physically demanding. It might also limit who applies for the installation job. Different approaches can be taken in order to address the problem of heaviness. Three possible suggestions for the viewpoint were detected and are presented in figure 24. The approaches are described below.

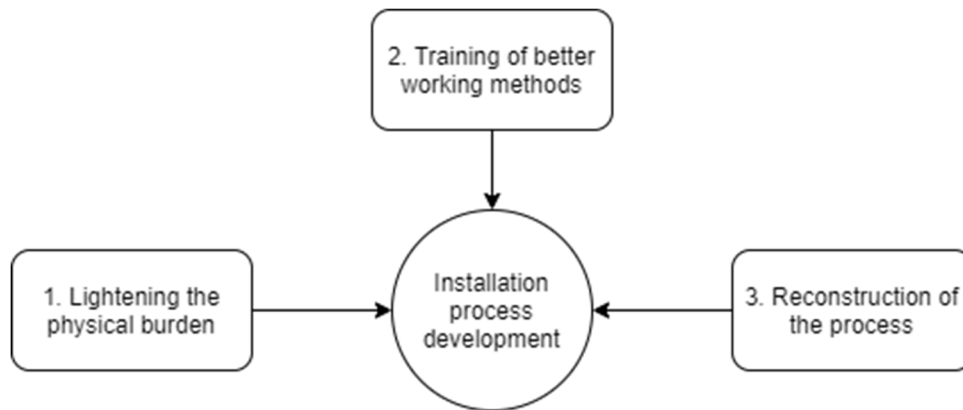


Figure 24. Installation process development approaches

The first approach, presented on the left in figure 24, in order to lighten the heavy burden, also suggested by several interviewees, is to add another installer into the process. Two installers instead of one can more easily lift the heavy parts together, and during later phases, the other installer can be put in charge of delivering the correct parts and tools into the elevator shaft as the installation proceeds. A problem that occurs, is the short employment of the secondary installer. A second installer in the process would also increase the labor expenses, and in the current piecework payment system, decrease the total income of the installers. The most successful trials in balancing employment levels with two installers, have been completed with a setting where the more experienced installer acts as the helper, and the learner acts as the main installer. The assembly manual contains a suggestion for a “flexible man schedule” presented in section 4.1 *Installation* steps, which only involves the secondary installer in the beginning of the installation process. New, other sources for additional labor should also be evaluated, such as construction site collaboration. As automation and robotization are the current and predicted future trends in manufacturing industry, solutions for lightening the elevator installation process are also being searched there. Development of automation and power tools is an important branch of process improvement, and should be held of high importance regardless of other job description development or changes.

It was mentioned by installers, that the physical stress can be influenced by own working habits and methods. The second approach for process development is presented on the top in figure 24. It has been observed by supervisors as well, that different approaches exist for executing and managing the installation by the installers. Those, who implement an anticipatory working method, are less likely to experience unexpected interruptions and working stress due to them. Training towards anticipating interruptions and interpreting the installation process as a complex, could enhance the results and guide installers towards higher control and understanding of the process. It was found in the interviews that some of the designed installation methods are not delivered clearly enough, and false, or deviant from the assembly manual, methods might get passed on to new installers from the experienced ones. New interactive ways of training have been developed for subcontracted installers to quickly acquaintance with the designed methods. Augmented reality solutions, for example, are constantly under development. If the training methods are found to be effective among subcontracted workers, application could be considered for internal installers as well. Usage of interactive training methods in supplementary trainings and instruction updates, for example, could help in adopting the required methods and new ways of working.

The third approach, presented on the right in figure 24, is to reevaluate the whole process. A total reform of the installation work could have positive influences on the employee experience. As construction sites can be stressful, noisy and even dangerous working environments, work could be distributed outside of the installation location in the elevator shaft. Only connecting the main parts, and electrification of the elevator would this way take place in the shaft, and assembly of most parts could be done in, for example, in a heated, clean container workspace. Modular assembly and building of elevators have also been prototyped, where the elevator is built in a factory environment, and delivered to the worksite as modules. The method is restricted to newbuild locations, as it requires the possibility to lift the elevator modules in place before constructing the top parts of the building. Another major structural change in the process could rely on a new task distribution. As in APA area, installation tasks are divided into mechanical fitting and electrical installation. Installers are designated to one of the tasks. This type of designation could allow job rotation among installers, and job contents would be more easily modifiable for the individuals.

5.1.3 Compensation

Compensation for a job performance consists of the extrinsic and intrinsic rewards. As the interviewees showed signs of dissatisfaction in the reward model, compensation should be reevaluated. What is important, is the experienced balance between the job performance and compensation. The extrinsic rewards are easy to measure and for example, compare between fields or similar jobs in other organizations. In addition to salary, occupational health care, leisure time insurances, bonuses, and other benefits are extrinsic rewards offered by the employer. In addition to these, non-financial and intrinsic rewards can play a significant role in how the employee experiences the reward for their performance. For example, recognition and responsibility are rewards that can balance the total compensation. In the KEF area, according to the case company, installer salary level has historically been very competitive compared to other industries. It is still meaningful to consider the effects that the reward model has on the installers' motivations. Salary levels also vary in different areas globally. Subcontracted labor's actual salaries are also out of reach of the main contractor when designing monetary rewarding systems.

The piecework payment system itself motivates the worker to finish the job but doesn't encourage to achieve the best possible performance and carefulness. The responsibility is left for the installer to carry out the tasks thoroughly and with accuracy. As money has several times been found to have an incomparable effect in motivating, the method for rewarding should be carefully designed. In the interviews and discussions with other elevator professionals, it was cleared out, that the trend in piecework payment rewards has been declining over roughly the past ten years. It is more difficult for the installers to achieve similar income levels as earlier. Natural deceleration in the process also takes place, as the employees get older. The responsibility for your own work pace and the fact that it defines the income level, may have driven installers to overuse their own resources. What comes to the monetary reward, more attention could be paid on the performance and the quality of outcome, in order to avoid rushing the job. For motivating the installers to give their best efforts and to pay attention to the process, rewards for other achievements could also be considered. As the quality of installation is already monitored, a part of the payment or an extra reward could be offered for good quality results, initiatives for developing the process, or other relevant observations by the installer.

Soft values and intrinsic motivating methods should be considered in collaboration with the monetary rewards. In the interviews it could be predicted that most installers share motivators linked to own work performance and the achievement of finishing installation of the elevators. As a non-financial reward element, information could be offered about previous installations. Since many of the installers are motivated by seeing the result of their own work, data about the previous installation targets could be exploited. A database containing information about installed elevators, faults occurring, repairs, and condition monitoring data, could be given to installers' use for them to learn and be able to follow their previous projects in use. This type of data available could increase the feeling of pride in installation work. In the interviews it was discovered that some installers want to show their previous installation projects to other people close to them. This clearly indicates certain pride and interest in the old projects, which could be reinforced in order to increase motivation.

As another means of non-financial rewards, feedback from the supervisor, as well as customer, could be better utilized. The reward of knowing how the installation was performed, with the pride that comes from the finished product, were found to be important to the installers. The case company is present in public spaces, as technical solutions. Elevators, escalators, and automatic doors can be found in public buildings, from shopping malls and hospitals to residential buildings. The installer has the responsibility to finish the products, and thus also the possibility to affect the image of the company. This type of visibility for installation jobs is very unique, and clearly enjoyed by the installers.

5.1.4 Career planning

A significant finding in the interviews was the need to change tasks due to physical strain in the job. A structural change is thus needed. As discussed in the previous section, changes and development of the installation process could help in solving the problem, but with the existing methods and processes, also a career development -based approach could be taken. A model for guiding installers in their careers could be designed, as currently, an established practice doesn't exist. Some of the installers are relocated in maintenance or other lighter tasks in the field, and some are promoted to supervisors or specialists. Career development

does take place individually, without a defined pattern. Naturally some installers are also able to keep the same job until retirement age, but the majority is not. A structural change in career development for the installers could enhance and clarify future expectations of installers. Also, in the application phase, more clearly presented career possibilities could help in recruiting the optimal candidates. Offering careers rather than a job could help find the applicants willing to commit to the company.

Pre-defined career programs or paths might not be the optimal answer in individualistic cultures, but systematic observation and analyzing of installers' professional progress and wishes could be organized to help define satisfying career opportunities. Learning and advancement originate from the employees themselves. The opportunity for proceeding already exists but might not be easily achievable by all installers. Constant learning and growth are desirable from the employee, and by most installers are also experienced motivating. The general current mindset of installers, according to the interviews, could enable trialing learning-based career programs.

It was discovered that most installers wish to stay with the same employer, even though they have ideas of changing tasks. Different expectations and wishes exist but in reality, might not get acknowledged. The intention is naturally to keep educated and skilled installers in the company for as long as possible. Resources are lost, if employees leave the company soon after properly learning the installation process. By focusing on the individual, and offering career guidance, knowledge collected in the field and intellectual resources could be harnessed for other tasks than installation as well. Regular personal mentoring could help installers achieve their own goals, and the company to preserve committed employees.

More specified career programs could be based on for example rotation of jobs, specializing in specific tasks, or trial periods in different tasks or units. Rotation could be realized in splitting the tasks into mechanical fitting and electrical installation, like already done in some parts of the world in the case company, and assigning different tasks according to installers' skills and capabilities. Trial periods could be directed to different tasks in order to map out possibilities for the future and to also find suitable candidates to specialist or supervisor roles. According to the case company, background in elevator installation is often beneficial in other positions linked to installation operations. Career possibilities, variation in tasks, and new challenges are seen motivating among installers, and by offering career guidance or programs, could be deliberately used to keep employees motivated and committed.

5.2 Relation to literature findings

The research part of this work was designed based on the literature review findings. Interview questions were formed according to the themes arisen. Motivation factors examined in the literature study were used as guidelines to seek the elevator installers' motivators. Later on, as the model of the motivations experienced by elevator installers was built based on the interviews, similarities between literature and research findings in positive and negative effects were found. Findings of the literature research were also employed in recognizing motivations and factors behind them, in order to find directions for developing activities, and to give grounds for possible measures. In this section, research results are discussed in light of findings presented in Table 1. *Factors affecting employee engagement, findings, and supporting literature.*

5.2.1 Motivation

It was one of the main objectives in this research to examine elevator installer's motivators. Bedarkar and Pandita (2014) stated, that career opportunities and brand alignment are the top global drivers of engagement, which were also found among elevator installers' motivators. Both factors seemed to be present in especially the starting of a career in installation. Engagement to the case company was found to be present in the career plans and expectations of interviewees. Many installers have also decided to start their careers due to their ideas of a reliable and valued employer. Even though promoting of a career or even a job by the employer was found to be minor, the employer image is still, according to the interviews, the most important reason for seeking work in the case company.

Motivators and their changes during installation careers showed different patterns, but no significant relevance to trends found in the literature study was found. Schlechter, Thompson and Bussin (2015) suggested that job security is valued higher in young reference groups. In the interview research, with a sample of only 18 participants, such a conclusion could not be drawn. Interview answers indicated that the idea of long careers and a stable workplace was found important by installers from all age groups. Inceoglu, Segers and Bartram (2012) also conveyed, that monetary rewards and career progression lost importance among older work groups, but this could also not be verified in the interview research material. Previous research findings and statistical trends perceived in motivating age groups should still be considered in future job marketing and development programs, as the small sample size restricts drawing statistical conclusions.

The career satisfaction model presented by Barnett and Bradley (2007), suggest that career satisfaction originates from a combination of proactive personality and organizational support. This argument found support in the case company. The elevator professionals, who had progressed in their careers, had also been proactive regarding their career development. As discussed in the previous section 5.1.4 *Career planning*, organizational support could be offered more widely for all employees, in order to create a more encouraging environment for achieving personal goals.

5.2.2 Process

In the literature study, physical challenges of construction work were investigated. Similar results regarding the physical heaviness of elevator installation job were found in the research study. Ling and Leow (2008) found that among graduated construction student, "too heavy workload" is the most common reason for women leaving the field. Such a situation has also been detected in the industrial institute among students. Musculoskeletal disorder being a universal health issue in the construction industry, elevator installers suffer from similar symptoms.

On irregular working times, elevator installers had only little experience. Most interviewees were satisfied with the freedom they had regarding working time. The theory presented by Virtanen *et al.* (2018) suggests, that voluntary and rewarded overtime hours can have positive effects on employee's work satisfaction. The piecework payment model is contradictory what comes to the optionality of working overtime. The installer is nominally responsible for the progressing of installation, but in unexpected situations might be forced to work

longer hours. Irregular working times can be experienced a stressor, as found in the literature study, but in the interviews, it was not found as a significant or common cause of working stress among installers.

More attention was paid to feedback and recognition. Ashraf (2019) suggests that cooperation and constructive feedback have been shown to have a positive effect on job satisfaction. The interviews showed a lack of feedback on the work of most installers. They also wished to get more input from supervisors or others involved on the outcomes of their work. A clear connection between feedback and work satisfaction could not be drawn in the research study because of the situation and improvement wishes from the interviewees. The literature study finding could still be assumed true considering the installers' experiences, and regarding future development processes. Similarly, supervisor role in offering recognition for good performance should be recognized, as it was by Manzoor (2011). Communication or ambiguity of work tasks didn't get significant attention in the interviews either. Berger *et al.* (2019) named dealing with uncertainty as a notable stress factor. As in the interviews, the issue was indistinguishable, it can be concluded that ambiguity in communication is not a significant issue in the elevator installation job.

5.2.3 Work image

It was found in the interview research, that the company image is among the most important factors in making career choices. Given the found pattern in the case company that jobs are often transferred to relatives and friends. Employer image also gets transferred in close relationships. Wallace *et al.* (2014) suggested, that increased employee satisfaction enhances the organization's image as an employer. The matter was not directly measured in the interview study, but according to the theory and given the found very good image, employee satisfaction should also be on a good level. Contradicting evidence was also not found. It was presented by Bedarkar and Pandita (2014) that in today's labor market employer branding is increasingly important, as especially young people entering the job market seek "trendy" jobs. The latest career and job decisions in the interviewee group were made by the industrial institute students. Their attitudes and expectations showed, that the case company appears as a technology leader in Finland, and at least through the channels that the students heard or found about the opportunity in the institute, the image was delivered successfully. Trendiness or popularity of jobs in the technology field were not analyzed in this research, but attractiveness of new and advanced technologies were found to be present in career decisions.

Ling, Leow and Lee (2016) claimed that low starting salaries in construction positions attract students and graduated away from the field. The finding appeared to be inessential regarding elevator installation, as the salary level was found to be higher than in other construction type of jobs. In the interviews, the salary level appeared as a positive feature in answers considering the whole experience, and job marketing to others. In locations, where subcontracting covers most installation, the situation regarding leaving the field for higher salaries might be different.

5.2.4 Personal experiences

Findings in the literature study regarding the working environment and feelings towards it were linked to teamwork and leadership. Berger *et al.* (2019) introduced a change-oriented transformational leadership model in contrast to passive-avoidant leadership model. It was evaluated in the interview answers and discussions with supervisors, how leadership is implemented in elevator installation tasks. According to evidence collected, current leadership methods already take advantage of individual consideration, and offer opportunities for occupational development, which are elements of the transformational leadership model. The same elements were also mentioned by interviewees as experienced supportive factors for personal development. The model of leadership and team dynamics affecting the organizational climate illustrated in figure 5. *Impact of leadership and team dynamics to the atmosphere at workplace (adapted from Pérez-Vallejo and Fernández-Muños, 2019, p. 5 of 10)* was found to correspond to the elevator installers' work atmosphere. The installers' most important link to higher organizational levels in everyday work life is their supervisor. Teamwork is not traditional in elevator installation tasks, as the job is quite independent, but the interviewees found it important and encouraging to be able to phone other installers for advice in challenging situations. The atmosphere around installers consists of mainly the supervisor and other installers. When these relationships were satisfactory, installers were content with their working climates. The theory of affecting factors was found to hold true among the interviewees.

Literature study findings indicated that work-life balance is a significant factor in engaging and attracting employees. In the interviews, balancing personal and work life was found to be mostly easy for the installers. Work-life strategies of the organization were found in forms of life advantages, health insurances and flexibility in taking time off. Lingard, Fracis and Turner (2012) claimed, that according to their research, a higher number of work-life strategies correlates to higher employee loyalty. The interview data does not directly offer evidence supporting or opposing the argument, but the recorded employee satisfaction indicates, that work-life strategies applied by the company are experienced positively.

The finding presented by Ling, Leow and Lee (2016), that job instability is experienced discouraging, did not get any relevant support, as the situation among the interviewees was experienced the opposite. In general, the case company is seen as a stable workplace, and interviewees were convinced, that their jobs are secured. They experienced the situation positively, and no evidence of job instability was detected, so the argument was neither, confirmed or disproven in this research.

5.3 Challenges in research

One of the major challenges in this research study was to define a suitable sample size. It is difficult to get a comprehensive understanding of experiences from different worker groups, as the number of participants cannot be very high given the chosen interview research method. A small sample size might lead to problems and distortion in the analysis. In the collected data, representation of installers is not extensive enough for statistical analysis, and opinions of single interviewees might get overly emphasized. For the purposes of this study, the chosen group and its size was anyhow adequate, as patterns could still be recognized and diversity in answers also existed. A larger group of installers would probably not have

brought very much new information, but occurrence of different issues and opinions could have changed.

Another challenge is set by the interviewing situation and honesty of the interviewees. Some employees might feel obligated not to speak ill of their employer, which might have distorted the answers. It was decided to conduct the interviews in the interviewees' native languages when possible, in order to avoid language barriers in giving the answers. This succeeded in the interviews of the Finnish and the Australian participants. The Polish subcontracted installers did not have a common language with the interviewer, and the supervisor of the interviewees was needed to translate the questions and answers. This might have led to translation errors or censorship of the subcontracted installers answers. Censorship might have taken place in the interviewees' original answers to the translator due to the supervisor relationship, but also in the supervisor's translation to the interviewer.

Distortion in the data might also have occurred in the interpretation of the answers. In steps 2. *Go through all data and mark up things of interest. Separate from other data.* and 3. *Classify, thematize or typify data* of the Tuomi and Sarajärvi's (2009) four-step data-analysis framework, the interview answers were first reduced according to the interviewer's interpretations, and then abstracted and classified into recurring themes. The definition process of themes required abstracting of the answers, which might have led to unintended reduction of information in the answers. This distortion is anyhow resisted by thematization, and silent information of attitudes transferred to the interviewer in the discussions and interviewing situations.

Qualitative research such as this study, should be valid and reliable. Validity expresses, how well the chosen research methods can measure the features in question. The interview method was noticed to well suit the purpose of the study, as the results were measurable and relevant in finding answers to the research questions regardless of the mentioned challenges in execution. Reliability measures repeatability of the results. The sample size and diversity are the main challenges regarding reliability in this research. By choosing a different group of interviewees, answers might experience change. Similarity of the answers collected, anyhow, indicate that adequate reliability was most probably reached.

6 CONCLUSIONS

This study aimed to find answers to the research questions regarding the elevator installation process. The matter of defining motivation and commitment was found to consist of multi-level concepts and subjective experiences, which makes uncomplicated explanation of the phenomenon difficult. Guided by the research questions, motivators and commitment of elevator installers were inspected, and patterns and connecting personality traits were detected. Straightforward answers to all of the research questions were found to probably not exist, but guidelines and different approaches for improving the researched subjects can be suggested according to this study. The previous section 5 *DISCUSSION AND RESULTS* contains discussion of the interview answers, their interpretations, and possible measures for future development. All of the research questions' topics were covered, and guiding answers were found to all of them.

- a) Which factors affect the workers' motivation and commitment level?
- b) How should the process be developed to keep employees motivated and committed?
- c) How is the job seen from the outside?
- d) How should the process be developed to attract a wider variety of workers?

The questions were set to identify key issues and development potential in the installation, and recruitment processes. Literature study was conducted in order to understand work motivation theories, and to acquaintance with previous research work on the subject of employee engagement. Research study was realized in the form of interview study among elevator installers and installer students. Answers were analyzed and discussed in light of previous knowledge and resources available in the case company. Rearranging and further analyzing the interview questions helped in constructing a model of elevator installers' work motivation. The model, its levels and branches, with possible solutions to the research questions were discussed to find approaches for developing the installation process and job. The outcomes of this study include results of the discussion, that are presented below in the form of proposals for action, and further research.

6.1 *Solution proposals*

Most installers interviewed for the research in this work seem to be satisfied with their jobs. However, development potential was identified in the installation process and career planning practices, in order to increase motivation, personal well-being, and commitment to the company. Possible solution proposals and need for further analysis or development were discussed in section 5.1 *Discussion of main findings*. As the original problem is very multi-level, and motivations of installers were found to have multilevel origins, no one simple solution exists for enhancing the installation process and installers' motivations. Several dimensions were found and discussed, and the outcomes and main points are shortly presented here.

6.1.1 Actions for finding the best applicants

In order to address a wider variety of potential applicants in the recruitment process, in the key position is to manage the job image, as job and career decisions are made based on ideas of the job. This study showed that majority of elevator installers have started working in the case company, because they already knew someone there. In order to design methods for finding the best applicants, the goal needs to be more precisely defined.

Potential actions:

- Marketing with new material presenting a more versatile image of installation will help in modifying the existing image of the job. Material need to be distributed both, internally and externally through different medias. As peer marketing was found to be the dominant method of finding new students and installers, internal marketing and image building must also be considered. This action aims to widen the target group of marketing.
- Marketing with the focus on career possibilities rather than only the job will help attract employees ready to commit and eager to learn and develop. The development must start from current employees by offering help in career planning, to affect the current employees' ideas of the job and different possibilities it offers, and again take advantage of the peer network. This action aims to target the specific people, who are willing to commit and develop.
- Cooperation with subcontracting companies in their recruitment and training will help find the best candidates for the subcontractors. KONE image and training resources should also be extended for subcontractors' use, where cooperation already exists in operation level. This action aims to combine resources of the parties involved in order to benefit both. Further research is needed to identify best methods and strategies for attracting installers in the subcontracting companies.

6.1.2 Actions for developing the installation process

Three possible approaches for developing the work process in elevator installation were found and discussed. The main objective in process development should lie in enhancing the working experience.

Potential actions in the three approach categories:

1. Lightening the physical burden

- Possibilities for additional help in the heaviest phases of installation should be evaluated. Several options for realizing help have been presented: a secondary installer for the beginning of installation, role distribution of an experienced and a learning installer, outsourcing of help, and involving construction workers. Different possibilities should be further researched in light of the installation process and steps, and availability of labor sources.

- Development of automation and power tools is a natural direction for lightening the installers' physical burden. Development is already taking place and should focus on the heaviest parts of the installation process.
2. Training of better working methods
- Training and rewarding for anticipatory working methods can help installers understand and control the installation process better. It was found that installers with anticipatory working methods were less stressed. Rewards could be established for detecting possible upcoming disturbances and deviations, which simultaneously improves the performance.
 - New, interactive training methods can improve the results. Exploiting of digital tools in training of current designed installation methods, such as AR or video solutions, should be considered.
3. Reconstruction of the process
- Preassembly of complex parts that currently require working in the elevator shaft, will reduce time spent in the worksite. Suggested solutions include for example a transformable container for assembly work, and installation modules. Work configurations and assembly locations must be particularly defined and considered.
 - Task distribution or career planning approaches aim to redefine the job description. Installation can be divided into phases with different installer roles, like done in APA business area with mechanical fitters and electrical installers. Roles and tasks need to be carefully analyzed in order to come up with the best functioning arrangement. New definitions and roles for specific installation phases could also be employed in career planning and marketing.

6.1.3 Actions for balancing compensation

Evaluation of reward elements was done based on extrinsic measurable rewards and found work motivators. Balance between job performance and experience of fair compensation must be the objective for beneficial compensation development.

Potential actions:

- Rewarding of good quality results instead of or in addition to fast installation will encourage installers to enhance their performance while simultaneously increasing the quality of the result. The fundamental construction of piecework payment must be reevaluated, and a systematic quality measurement system employed. The current system only encourages to finish installation as fast as possible regardless of the quality.
- Rewarding installers for constructive feedback and initiatives regarding installation, will help other functions in developing the process and designs, which in the long

run will also help the installers directly. The opportunity to share ideas and detect development potential also rewards the installer intrinsically.

- Presenting the installers with data of their previous projects in forms of maintenance data and customer feedback can improve the overall work motivation. It was discovered, that seeing the result of your work is motivating among installers. By showing statistics of own previous work projects, pride in the results can be harnessed to motivate installers. A mobile app for task distribution and scheduling is currently under development, and a feature including personal work history should be considered.
- Systematizing feedback for installed units will help installers develop their professional skills. Feedback teaches the receiver about their own assets and development points, but also enhances confidence in strong points. A systematic feedback platform should be developed.

6.1.4 Actions for career planning

A career planning approach could offer solutions to several issues. Task toughness could be reduced by distributing roles, and marketing could be focused to the desired motivated group. Systematic career planning considering the abilities and wishes of the individual could help lighten the burden of heavy installation through job rotation, and also offer clarity to installers' future expectations.

Potential actions:

- Development of mentoring programs and systematic career guidance will help installers feel secured in their jobs, and to plan their professional futures. It will also help the organization to avoid losing knowledge as installers leave for other jobs. It has been suggested that regular discussions and individual career planning should be organized. Roles in negotiations must be considered, as the first supervisors might not be able to convey equal opportunities for all installers. Regular career advising will also offer installers an additional connection to other levels in the organization.
- Trial periods in different tasks have been suggested as a method for defining career paths. By trialing in different positions, potential for career progression will be detected. It offers installers the opportunity to find new inspiring career goals and helps the organization to maintain skilled employees.

6.2 Recommendations for further research

As presented in section 6.1 *Solution proposals*, the research questions and their contents include subjects in different levels. A straightforward universal answer does not exist, but the problems need to be approached from several different directions. Some of the above presented action proposals require further research and analysis to be realized, but also new potential research subjects were detected. Research recommendations presented here aim to extend the information collected for this study, in order to develop further and new solution possibilities for the research questions.

- In finding the best applicants, the subcontracting companies' increasing share should be considered. Research on possible scenarios of cooperation in recruitment should be conducted to best utilize resources and image benefits of both companies, the main and the subcontractor. Subcontracted installers' motivators, backgrounds and career decisions must be further researched, to be able to find the target group with most potential. In this research, subcontracted installers were in a minor role compared to internal ones. The experiences of subcontracted installers in this study were limited to working in a foreign country for a higher salary. Other forms of subcontracting models exist also in the case company, and especially in areas, where subcontracting covers most installation, installers' experiences might vary widely from the ones presented in this study. More information of subcontracted installers' motivators is needed.
- The compensation model and the influences of regular payment and piecework payment on the installers should be researched, in order to redesign the payment model. This study discovered that the piecework payment model causes stress for some of the installers. They might be willing to reduce the total payment in exchange for reduces stress and pressure from the schedules. According to the data collected in this study, an optimal balance cannot be defined, and further research is necessary.
- The installation process and possible available sources for help in the physically challenging tasks should be researched. An evaluation on utilizing existing assets or obtaining external help should be conducted.

7 SUMMARY

The objective of this study was to study elevator installers' work motivation and factors affecting it, and to identify development potential in the elevator installation process to enhance the motivation and to more efficiently attract new employees. In the case company, growth of sales has recently been faster than the growth of the number of installers, which has led to a need to find more qualified personnel. By analyzing elevator installers' experiences in their jobs, it was examined, which factors regarding the job attract employees, and make them stay. Current development of technology and new innovations also offer new possibilities in marketing, training, and executing the job. In developing the installation process, installers are in the frontline of the results. Thus, investigating their motivations gives guidance in determining advantageous development directions.

The theoretical background of work motivation and commitment was studied based on literature and previous research. A framework for understanding motivational factors in construction and electrical assembly type of jobs was used in designing the research for the case company. Several experts were interviewed to understand the current state of installation, and how different functions of the organization are tied to it. The research study was conducted by interviewing elevator installers and installer students in Finland and in Australia. The interviews showed mostly consistent preferences and opinions among installers regarding installation process phases and pointed out disliked and problematic features of the job. The interviews also provided relevant and important information about daily installation work. Motivation development throughout the career and different situations in life was examined with typical career paths, and installation and rewarding methods.

The key issues and found improvement potential were introduced in a motivation model presenting the found motivation origins (intrinsic and extrinsic), processes where the motivators can be applied (recruitment and installation work), and the four challenges that aimed to most precisely find answers to the research questions (finding the best applicants, developing installation, balancing compensation, and supporting career planning). Discussion of the interview answers was guided by the defined challenges, and solutions were searched systematically.

Based on the interviews, their interpretations, and discussions, solution proposals were found and presented as the outcome of this study. Potential actions suggested lean on the four challenges presented. Image of the job and employer were found to give grounds for career decisions, and many of the proposed actions rely on developing the image through different channels. Peer marketing is the dominant method of finding new students and installers, which could be deliberately utilized. The installation process was predictably found to cause physical strain on the installers. Solutions for relieving installers' stress was searched in lightening the physical burden, training of more efficient working methods, and reconstructing the job. Compensation was evaluated through intrinsic and extrinsic rewards, and suggestions were presented to emphasize intrinsic reward elements, such as pride and possibilities to personal development. It was detected that the possibility to see the finished product and result of work was found motivating. Thus, data about the installed units and their usage should be offered to installers. Possibilities for more guided career planning were also discussed, and it was presented that offering support in career progression could not only be motivating for current employees, but also help in finding new employees willing to engage in the organization.

The solution proposals rely on the data collected in this study. Recommendations for further research present knowledge gaps in research, that must be filled in order to find further solutions to the research problems. Locally, it is suggested to further research and evaluate the piecework payment rewarding method. In a global scale, it is suggested to pay attention to the subcontracting companies and their recruitment processes, as the global share of subcontracted installers is already larger than the internal ones', and trends indicate increase in the future.

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