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Work motivation of non-founding employees in Finnish software startups

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<p>Rapid developments in commercial and industrial internet, IT software and hardware have allowed the major growth of startup companies worldwide. In addition, the rapidly developing venture capital and accelerator practices are making a notable contribution to the so called startup hype. There is a growing interest towards startups among the global skilled workforce and almost every major university across the world has developed some kind of entrepreneurship program or community. In entrepreneurship literature much has been studied concerning the founding of companies, success factors and especially the founders. However, the non-founding employees of startups, who are the actual creators of growth, have been left aside.</p> <p>This thesis focused on the work motivation of the employees, who join startups after their founding. The self-determination theory by Deci and Ryan (1999), which defines psychological need satisfaction as the main promoter of motivation, was used as the theoretical framework for motivation study. In addition to needs, the reward and feedback practices were also studied.</p> <p>Research was based on qualitative methodology and the case study method was used with three software startups in Finland. The main method for data collection was the theme interview and a total of 20 interviews were conducted with founders (n = 6) and employees (n = 14).</p> <p>The data analysis provided a collection of generalized statements related to each psychological need, rewards and feedback. Also a selection of direct quotes was used to deepen the picture of the results. A unique version of the startup lifecycle was defined by combining theory and empirical evidence. This framework was used to assess changes in perceived need satisfaction.</p> <p>The psychological needs of autonomy, competence and relatedness were perceived to be satisfied well in the case companies. The overall motivation was almost intrinsic with a highly internalized regulation. In other words, the behavior and culture of the companies was understood, valued and integrated into the self of employees. This type of motivation comes very close to intrinsic motivation, which is considered having the greatest positive effect on work performance. The first and most significant point of changes to perceived need satisfaction occurred during the initial growth phase, when the first large batch of employees join the company.</p>		
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<p>IT-alan nopean kehityksen ansiosta kasvuyritysten määrä on lähtenyt jyrkkään nousuun ympäri maailman. Tätä kasvua ovat olleet tukemassa myös riskirahoittajat ja yrityskehittäjät, jotka mahdollistavat yhä useamman kasvuyrityksen läpilyönnin. Niin sanotun startup-innostuksen myötä yhä useampi korkeakoulutettu tai kokenut työnhakija on kiinnostunut kasvuyrityksistä ja jokainen maailman merkittävin yliopisto on kehittänyt yrittäjyyteen liittyviä koulutusohjelmia ja yhteisöjä. Yrittäjyyskirjallisuudessa on tutkittu yrityksen perustamista ja menestyksen saloja sekä etenkin itse yrittäjiä. Tutkimukset ovat kuitenkin harvoin keskittyneet kasvuyritysten ensimmäisiin työntekijöihin, joita voidaan pitää menestyksen varsinaisina mahdollistajina.</p> <p>Tässä työssä tutkittiin kasvuyritysten työntekijöiden työmotivaatiota. Keskeisimpänä taustateorianä motivaatiotutkimuksessa toimi Decin ja Ryanin (1999) kehittämä itsemääräytymisteoria (self-determination theory), joka määrittelee motivaation syntyvän kolmen psykologisen tarpeen täyttymisestä. Tarpeiden lisäksi tutkittiin palkitsemis- ja palautteenantokäytäntöjä sekä niiden yhteyttä motivaatioon. Tutkimuksessa käytettiin kvalitatiivista metodologiaa ja tutkimusmetodina toimi tapaustutkimus. Kolmen suomalaisen kasvuyrityksen perustajia (n = 6) sekä työntekijöitä (n = 14) haastateltiin teemahaastatteluilla.</p> <p>Tutkimusaineiston analysointi tuotti joukon yleistettyjä lausumia, jotka kuvasivat tarpeiden täyttymistä yrityksissä. Lisäksi tuloksia havainnollistettiin haastattelusitaateilla, jotka välittivät haastateltavien subjektiivisia mielipiteitä. Kasvuyrityksen elinkaaresta luotiin uusi viitekehys, joka pohjautuu sekä aikaisempaan tutkimukseen että haastatteluista kerättyyn tietoon. Tätä viitekehystä käytettiin kuvailemaan tarpeiden täyttymisessä tapahtuvia muutoksia yrityksen elinkaaren eri vaiheissa.</p> <p>Kolmen psykologisen tarpeen, eli autonomian, kompetenssin sekä yhteisöllisyyden, koettiin täyttyvän hyvin tapausyrityksissä. Yleinen motivaatiotaso oli hyvin lähellä sisäistä motivaatiota, jolla on positiivisimmat vaikutukset työtehoon. Työntekijät ymmärsivät, arvostivat ja olivat täysin sisäistäneet yrityksensä toimintatavat sekä kulttuurin. Ensimmäiset ja merkittävimmät muutokset tarpeiden täyttymisessä kohdattiin kasvuyrityksen elinkaaren alkukasvun vaiheessa (initial growth phase), jolloin muun muassa yritykseen liittyy ensimmäinen suuri joukko uusia työntekijöitä.</p>		
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Esipuhe

Kappas, valmistuihan se lopulta!

Vaikka opintoihin saikin kulutettua useamman vuoden, niin tämä työ paketoitui minulle harvinaisen nopealla aikataululla. Tästä prosessista mitä suurimmat kiitokset valvojalleni Eilalle ja ohjaajalleni sekä esimiehelleni Villelle. Teiltä sain tasaisin välein aina kommentteja ja kannustusta ja piditte huolen, että työ ei jäänyt suureksi, keskeneräiseksi katsaukseksi motivaatiotutkimuksen ihmeelliseen maailmaan. Nöyrät kiitokset kuuluvat myös Oppexin, Smartlyn ja NetMedin työntekijöille, ystävilleni, jotka antoivat arvokasta aikaansa ja auttoivat minua valmistumaan.

Fuksista kasvoi teekkari ja teekkarista kohta diplomi-insinööri. Pojasta kasvoi mies. Paljon kaikkea ehti tapahtua yhdeksän vuoden aikana. Tunteiden kirjo on laaja, samoin mahtavien kokemusten ja hyvien ystävien. Kiitos:

- *Ansku*, kun rakastat, autat, halaat ja olet rinnalla, sekä siitä, että muistuttelet rakkausiltojen tärkeydestä ja olet aamuisin niin halattavan pörröinen.
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- *TERES*, kun kutsuit saunaan ja pidit huolta nesteytyksestä.
- *APK*, kun opetit lausumaan kauniita runoja.
- *Wappulehti Äpyn wäki*, kun tarjositte mahdollisuuden äärettömään hauskanpitoon ja tilaisuuden jättää oma jalanjälkensä teekkarikulttuuriin.

Monta tärkeää oppia tarttui mukaan tällä matkalla. Niistä tärkein kuitenkin alla oleva – eikä syyttä.

Elämää ei ole annettu meille kestettäväksi,

Vaan nautittavaksi!

Sikäli MikäLi

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1. Introduction

1.1. Background and motivation

Recent slow economic growth and the ongoing global financial crisis have pushed countries and companies to find new ways to improve their economies and increase their abilities to innovate. At the heart of this innovation lie, without a doubt, startups. Companies such as Facebook, Google, Uber, AirBnb, Twitter and Whatsapp have been disrupting traditional industries with new innovative services supercharged by venture capital. They have all been adding their share to the global startup hype, especially through massive funding rounds, acquisitions and initial public offerings (IPOs). Since the rise of the commercial internet in the 1990s, the ways in which companies can reach consumers has sky-rocketed. In today's world, business models are ranging from internet of things (IoT) to app stores B2B software as a service (SaaS). Accompanied by mobile internet, the cost of producing and delivering value to customers has decreased and made way to global scaling within months (Marmer et al., 2011). This if anything appeals to highly skilled labor and venture capitalists.

Startups can, strictly speaking, be defined as under 18 months old companies that have received a venture capital (VC) investment and have not yet found product market fit (PMF) (Stimel, 2012). They are an essential part of the well-being of any community or region they are involved with: in the US, startups are seen as very stable job creators bringing roughly 3 million new jobs a year (Kane, 2010; Stangler, 2009). In general, the financial, societal and psychological benefits of new businesses have been proven through several studies (Afolabi et al., 2013; Haltiwanger et al., 2013; Mesnard & Ravallion, 2006; Toole et al., 2014; Westlund et al., 2011). Entrepreneurship has even been considered as the most important factor affecting the economic development of a country (Veeramani, 2015). However, in addition to being just stable job creators, startups are actually pulling a growing amount of the university graduate workforce into interesting and highly developing jobs (Hsu et al., 2007; Indergaard, 2014). Also the need for entrepreneurship education communities and programs has increased at universities (Roach & Sauermann, 2012) which constitutes to the growing interest of choosing entrepreneurship as a career path early on.

Entrepreneurship as a field of research is relatively broad and it has been studied from several angles including financial, organizational and psychological (Frese & Gielnik, 2014). For the past 15 years there has been a growing interest in the psychology of the entrepreneur

(Baum & Frese, 2007). Research in this area has compared entrepreneurs and large corporation employees and focused on personality traits, competencies, cognitions, environmental conditions, motives and incentives (Arora, 2014; Baum & Frese, 2007; Sauermann, 2015). However, not much has been studied regarding hired employees of startups and early stage companies: Sauermann (2015) presented the positive effects of employee motivation on innovation, Kobayashi et al. (2014) studied the effects of the changing management structure on motivation and performance, Schnabel et al. (2011) tracked employment stability and unemployment risk, Ouimet and Zarutskie (2014) show that young employees tend to join young firms, and Roach and Sauermann (2012) highlight the differences between founders and joiners of startups. Although non-founding startup employees have been receiving an increasing amount of attention, more research is clearly needed.

In contrast to the research by Kobayashi et al. (2014) and Sauermann (2015), in which the motives, incentives and choice of action played central roles, this thesis studies employee motivation from a need satisfaction viewpoint. According to self-determination theory (SDT; Deci & Ryan, 1985; Ryan & Deci, 2000) there are three psychological needs that individuals look to satisfy: *autonomy*, *competence* and *relatedness*. Comprehensive studies using SDT in the domain of work organizations (Baard et al., 2004; Gagne & Deci, 2005; Meyer & Gagne, 2008) have proven that the satisfaction of these needs is related to performance and well-being at the workplace. According to Gagné and Deci (2005) fulfilled autonomous motivation is the trigger which maximizes performance, citizenship, trust, commitment, satisfaction, and well-being.

This thesis continues along the psychological path within entrepreneurship research and contributes to it by studying the perceived need satisfaction of non-founding employees with a focus on the effects of company growth and change. The case companies of this study are all Finnish software startups that have taken at least one VC investment and are producing a B2C or B2B SaaS product. All of the companies also have hired employees, which aren't currently receiving any major share of equity. Due to the fast paced work environments and lack of resources, these companies, and startups in general, seldom focus on motivational aspects regarding their employees. Hence, this study was warmly welcomed by the case company founders and managers.

1.2. Research objectives and scope

The specific problem to solve in this study is:

How are non-founding employees' psychological needs related to motivation satisfied in Finnish software startups along the company lifecycle?

The objective of this thesis is to contribute to entrepreneurship and work psychology research by studying software startups' employee motivation with a focus on the three psychological needs defined by SDT. This particular theory has been scarcely applied to the work motivation domain and never in startups. Moreover, the research on startup employees has been rather scarce - although now increasing. In this study, empirical evidence was gathered from both founders and employees, which allowed a comparison between founders' and employees' thoughts on work motivation and gave a more holistic picture of the setting. Also, founders' thoughts were applied in defining a startup lifecycle framework, which was used to assess the timing of changes in need satisfaction.

The scope of the study excludes startup founders and employees owning any major share of equity or stock options. However, startup founders and managers were interviewed on the way they perceive their employees' motivation. The scope also excludes design, administration and any other employees performing tasks not related to business or technology. Companies whose core business is not related to software and are not producing a product or service (do consulting or service development) are also out of scope. Also the study incorporates only companies that have achieved growth through VC funding. This scope allowed a specific focus on three similar case companies, which permitted the generalization of results.

1.3. Structure of the thesis

The first chapter of this thesis describes the background and motivation for the study. It also presents the research objective and defines the scope of the study. Chapter 2 presents the valid research associated with this study. Specifically, entrepreneurship and work motivation research is discussed in relevant detail and SDT is presented with all of its aspects. The complete methodology this thesis is described in chapter 3. This includes the research questions, research design, data collection and data analysis. Chapter 4 presents the results of this study and it is divided into three parts: first the satisfaction of needs, then the changes

aligned with the startup lifecycle and lastly rewards and feedback. Chapter 5 includes discussion and synthesis which aims to answer the research questions listed in the methodology. Chapter 6 presents a short summary of the study and lists suggestions for future research. Chapter 7 contains the appendix, which includes the interview agendas and all the results of the study.

2. Theoretical framework

This chapter encompasses the main research seen relevant in the study of employee motivation in software startups. The chapter is divided into three parts: entrepreneurship and work motivation research followed by self-determination theory in more detail. Although the three areas of literature have common ground it is more comprehensive to analyze them separately. The knowledge base constructed here is used as a whole in the discussion where empirical evidence is evaluated according to past research.

2.1. Entrepreneurship research

Entrepreneurship research has incorporated several different fields as it has advanced from the early days. The first perspectives by Schumpeter and McClelland were mostly psychological and involved focusing on individuals (as cited in Frese & Gielnik, 2014). Since then the path of research has diverged to focusing on economic and strategic theories (Kirchoff, 1991). However, from the beginning of the 21st century, entrepreneurship research has returned to psychology and it has been seen as a people driven subject (Baum & Frese, 2007).

Entrepreneurship and entrepreneurs have received different definitions along the way. Entrepreneurs have been defined as people successfully creating new business (Armstrong & Hird, 2009) and entrepreneurship as making use of business opportunities that individuals actively come across (Shane & Venkataraman, 2000). Also as stated earlier, entrepreneurship can be considered as a major creator of jobs, innovations and economic wealth (Afolabi et al., 2013; Haltiwanger et al., 2013; Van Praag & Versloot, 2007; Veeramani, 2015). According to Naffziger et al. (1994): “An expanded view of entrepreneurship should include the entirety of the entrepreneurial experience, that is, behaviors necessary in the operation of the firm, its performance, and the psychological and non-psychological outcomes resulting from firm ownership.”

As this thesis has a focus on startups, it is also appropriate to clarify the breadth of this premise. A strict definition was already given in the first chapter: 18 months old companies that have received a venture capital (VC) investment and have not yet found product market fit (Stimel, 2012). Paternoster et al. (2014) stick to a broader version by stating that startups try to grow aggressively by scaling high-tech innovations in suitable markets. Sutton (2000) lists 4 distinct properties of startups: (1) little or no operating history, (2) limited resources, (3) multiple influences and (4) dynamic technologies and markets. Paternoster et al. (2014),

however, declare that because the definitions vary from study to study, a single and unified knowledge base hasn't been created and practitioners are unable to use results from research effectively. In this thesis startups will be defined as follows: *A young and small company searching for product market fit (PMF) with the intentions of scaling its business internationally by possibly taking a boost from VC funding.* It is acknowledged that this definition is on a general level and lacks for example strict numeric restrictions. However, it sets sufficient guidelines needed in this study: company's age, size, phase, goal and means to achieve this goal. More distinct guidelines have been defined in the scope of the study.

In the following parts, startups and employees will be examined more thoroughly. The principles of software startups, the startup lifecycle and entrepreneurial employment will be discussed in detail to give a clear context of what it means to be an employee of a software startup.

2.1.1. Characteristics of software startups

In contrast to startups in, for instance, the hardware industry there are some core characteristics in software startups that make them unique and very much enable them to scale in the hugely fast paced IT-industry. These principles are roughly the same for all companies which also has an effect on the extreme competition. According to Eisenhardt and Brown (1998) and MacCormack (2001) software startups fall into markets where competition is intense and this pressures them to evolve and innovate in a hugely rapid fashion. Sutton (2000) highlights the need to prioritize correct features and iterate quickly according to feedback. He states that this is crucial as resources are limited and everything can't be developed.

Software development and its effective management is one of the most important and unique parts of a software startup. Because the market context and competition is very intense, new feature development has to work at full speed whilst maintaining the live product. Management is usually arranged as a set of processes which direct the development. Also specific technologies, architectures and frameworks are chosen depending on the needs of the product or service and amount of developers. Although, several management models have been created none have been able to establish themselves as the prominent resolution. (Paternoster et al., 2014)

Software engineering is, in essence, about solving highly complex problems and finding ways to combine technologies to carry out problematic tasks (Paternoster et al., 2014). The natural environment which allows software engineers to solve these tasks is creative, flexible and highly non-bureaucratic (Bach, 1998; Sutton, 2000). Moreover, the interests of

these employees is in the solving of problems related to software development and not creating processes to support workflows (Coleman & O'Connor, 2008). Thus, when resources are limited it is understandable that most efforts go into new feature development and maintenance of live code.

Implementing even simple processes to control software development seems to be hard and startups look to find their way by working reactively and tackling unpredictable events as they are encountered (Martin & Hoffman, 2007). Flexibility is highly appreciated and also needed as a missing PMF requires quick changes according to market feedback. As employees are highly skilled individuals, they are provided with a lot of responsibility and control to make fast changes according to their best knowledge (Sutton, 2000). Paternoster et al. (2014) add to this by stating that processes in startups are evolutionary: customer feedback is what drives iterative product development and this affects the practices in software development. Methodologies are adopted but practices are usually implemented half-way because the early stage of a startup is highly volatile. Once PMF is found the volatility in product development decreases and this allows space and time for processes and practices to be implemented (Paternoster et al., 2014). Paternoster et al. (2014) list these methods of software development teams: agile, ad-hoc code metrics, pair programming and code refactoring. He continues to add that testing is mostly done through users, customers and maybe focus groups or small communities of first adopters.

Looking at the literature (Coleman & O'Connor, 2008; Paternoster et al., 2014; Sutton, 2000), there are some distinct characteristics in software startups that differ from startups in other industries. These can be summarized into four points that are as follows:

(1) Software startups search for PMF in highly competitive markets or they are en route to creating a new market which soon will be populated by competitors. These markets have been made possible by the rise of the commercial and more recent mobile internet in addition to the invention of high-speed mobile hardware.

(2) The high-paced competition forces software developers to work as fast as possible and innovate on-the-go. Feedback needs to be gathered fast and product iterations have to be made quickly.

(3) The foundation of software engineering is built of problem solving in technology intensive contexts and this sets the scene for the work environment in software startups. Creativity must be allowed to flow and practices shouldn't be laying the rules for innovation.

(4) Highly skilled employees must be trusted with large responsibility and freedom. The person closest to the customer or the product has the best knowledge needed to make decisions and she must be allowed to act if the company aims to keep ahead of its competition.

2.1.2. Startup lifecycle

All companies have a lifecycle that contains ups, downs and an end at some point. Startups, however, are on the very beginning of their company lifecycles where the frequency of ups and downs is by far the greatest. As defined earlier startups are young and small companies still looking for a PMF. They strive to find a way to scale their business at large and usually VC funding is used to make this possible in the midst of high-paced competition. The definition of the startup lifecycle, however, is open for some debate among literature.

Crowne (2002) divides the startup lifecycle into 4 stages: (1) The startup stage in which the company reaches its first sale, (2) the stabilization stage which finalizes the PMF, (3) the growth stage which takes the company from PMF awareness to gaining decent market share and breaking even, and finally (4) the mature stage where proven history data can be used in sales and new product development. Baron and Shane (2007) consider a startup having 3 phases: (1) The ideation phase where the founder(s) prove(s) viability and feasibility, (2) the launch phase where the first team is built and the venture is launched, and (3) the post-launch phase which constitutes everything from reaching PMF to scaling the business. Stimel's (2012) definition of a startup was presented earlier, but in this context it is good to go through all the 4 different stages of companies receiving VC funding: (1) The startup stage in which a company is less than 18 months old and still looking for PMF, (2) the early stage company is less than 3 years old, still in a pilot stage and could be generating revenue, (3) the expansion stage's companies have already commercialized and may have broken even, and (4) later stage companies, which are likely to generate profit and have different operating units.

In the theme interviews that were held to gather empirical evidence for this study, startup founders were asked to describe certain major milestones in their own company lifecycles¹. The 2 major milestones present in all answers were: (1) the formation of the founding team and (2) the first and second big batches of new employees. All of the 3 case companies had raised VC funding and all were generating revenue at the point of interview. However, these facts were only stated as lifecycle milestones allowing the growth of the team.

¹ No other guidelines were given, so the results contain the points the founders at that moment felt as the most important ones in their journey so far.

New employees were unanimously seen as the biggest changing points in the companies' lifecycles affecting product development, sales, team dynamics, communication and organization formation. Looking back at the literature, only Baron's and Shane's (2007) second phase contains a mention of the first team. All other definitions of the startup lifecycle are strictly related to business or product successes. For the use case of this study, it is clear that a unique lifecycle should be devised.

Drawing from elements in the literature and the evidence from the interviews a proposed lifecycle for startups is shown in Figure 1. The lifecycle begins with (1) the founding phase where founders are responsible for ideation, producing the minimum viable product (MVP) and securing initial (pre-seed) funding. This is followed by (2) the post-founding phase where first employees are hired and the startup turns into an actual company with different employees having different tasks. This is also the phase during which the first major VC funding (seed or series A) is raised. In the (3) initial growth phase the company recruits its first big batch of employees, most likely reaches PMF and starts generating revenue. Finally, in the (4) scaling phase the company recruits its next big group of employees and starts being profitable. From here on the company either continues growth or goes back to a previous phase or ends its business completely. This lifecycle highlights the fact that the entry of new employees is the driving force behind growth. VC funding, PMF and profitability support and make growth possible, but the employees of the company are actually the force responsible for the growth taking place.

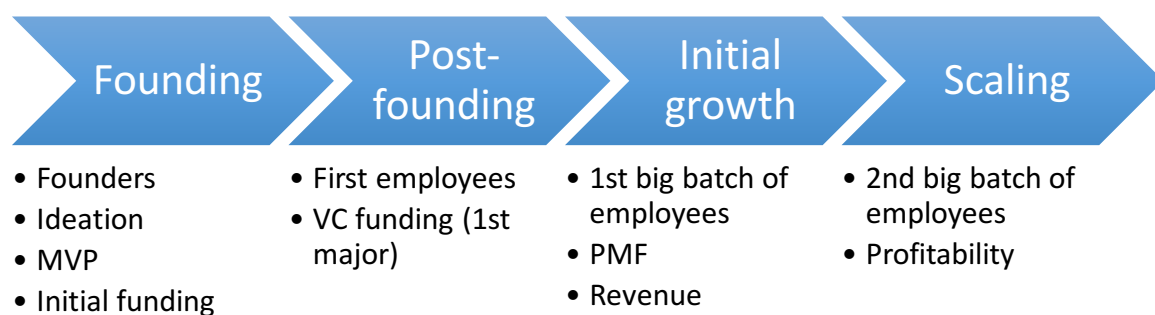


Figure 1: Startup lifecycle for use in employee motivation study

2.1.3. Entrepreneurial employment

Entrepreneurial employment is a concept used in this study to describe the employment of a person in a startup. As stated earlier the startup hype has increased the interest job seekers have towards small companies and startups especially. The notion of becoming one of the first employees in a company has grown in the highly skilled sector of the workforce. Entrepreneurship literature refers to this particular concept both as mentioned above and to describe the choice of entrepreneurship as a career path (Roach & Sauermann, 2012). Concerning this study, the former is more interesting as it focuses on the so called joiners of startups.

To start with, it is good to go back to Sauermann's (2015) statement that first employees in startups haven't received the amount of attention they should in entrepreneurship literature. These employees are critical in setting the path for growth, company culture and success (Roach & Sauermann, 2012). Also, as mentioned earlier, new employees were the most significant common milestones listed by all of the interviewed founders. Luckily the amount of research is growing and the importance of startup joiners is being noticed in entrepreneurship literature.

Sauermann (2015) studies the motives and incentives of employees willing to join startups. He describes that different people have different preferences for different job attributes. The connection between these preferences and attributes is what makes a job seeker choose a particular job. Sauermann's (2015) one distinct finding is that the largest effect on choice comes from the willingness to bear risk. Job seekers that wish to play safe rarely end up working at startups although their other motives might push them to do so. Agarwal and Ohyama (2013) also argue that the choice of workplace is dependent on a combination of job attributes and incentives. They find this evaluation criteria to be the first decision gate which systematically refines a certain group of job seekers to even consider a job at a startup. Roach and Sauermann (2012) study the similarities and differences behind founders and joiners. According to their research the shared attributes between founders and employees are autonomy and risk. However, these attributes are valued in different ways, which has a great effect on whether the person chooses to found a company or simply join one. Founders, for instance, usually have a stronger need for autonomy and risk, although these can also be very close to those of joiners.

In addition to attributes, there are also contextual factors that affect decision making. Norms, role models and encountered opportunities can have a certain effect on the choice of

career path (Roach & Sauermann, 2012). This is to say that the environment will have some effect on interests, but the strength of the effect is determined by individual preferences. Roach and Sauermann (2012) highlight that people with strong preferences for entrepreneurial activity will be less affected by contextual factors. Individual preferences are the dominant gene here as the lack of entrepreneurial preferences will not be affected by entrepreneurially positive contextual factors, i.e. people that don't wish to be founders, won't become founders even if their environment strongly encourages this. However, people with stronger preferences to become joiners will be affected more intensely by their environment and could thus end up as founders (Roach & Sauermann, 2012). According to Akerlof and Kranton (2000) the role of the employee in the company has an effect on work performance. If the role is aligned with longer term career goals, the employee may place more effort in their work and agree to a lower compensation than colleagues whose career goals are not aligned (Akerlof & Kranton, 2000). This is a subject needing more focus as motivated and highly skilled people are still extremely difficult to find and keep in young ventures (Roach & Sauermann, 2012).

2.2. Work motivation research

Work motivation research can be seen as studying motivation in the work or organizational context. It can be categorized under industrial and organizational psychology (I-O psychology) which studies human behavior in the workplace. Pinder (as cited in Oren et al., 2013) defines work motivation as "a set of energetic forces that originate within the individual as well as in his environment to initiate work-related behaviors, and to determine its form, direction, intensity and duration". Lee and Liu (2009) state that in order to reach targets we need motivation to drive us and make us persistent. Järveläinen (2014) contends that "motivation can vary in its form and amount depending on individual's personal inclinations, the type of a task and surrounding environment". Work motivation can thus be summarized as the combined internal and external effect on a person's will to complete tasks and achieve goals in the work context.

Work motivation literature contains several different theories that have formulated along the years from different fundamental assumptions. Some are specifically built for the work or organizational context, others have been developed as general motivation theories and then been taken to the organizational context. Maslow's (1943) classical theory on the hierarchy of needs displays human motivation as a set of 5 need levels beginning from physiological needs and ending with self-actualization. Another classical and influential theory is the motivation-hygiene theory developed by Herzberg et al. (1959). Here motivational

factors affecting employee satisfaction rise from the work itself (eg. recognition, achievement, personal growth) while dissatisfaction develops from “hygiene” or external factors. Vroom’s (1964) expectancy theory is the third classical theory related to work motivation. In short, it focuses on the process of making choices based on the expected outcomes, their desirability and their achievability.

Based on these classical theories more contemporary ones have evolved to better describe work motivation and human behavior. Derived from expectancy theory, Hackman and Oldham (1976) created the job characteristics theory (JCT) which is based on the thought of people feeling good from performing well at work. The core assumption of JCT is that certain job attributes affect motivation in a certain way. Hackman and Oldham (1976) decided on 5 central attributes which are: (1) skill variety, (2) task identity, (3) task significance, (4) autonomy and (5) job-based feedback. These characteristics take into account the skills needed by the person, size of the task, impact of the task on other people, freedom perceived by the person and amount of performance-related information received from working on and completing a task. Another contemporary theory is Locke’s and Latham’s (1990) goal-setting theory which presents goals as the driver of motivation. The theory finds that motivation will receive its greatest value when goals are (1) self-set, challenging and desirable, and (2) the way to accomplishing these goals is known, accepted and feels reachable.

As already introduced, SDT (Deci & Ryan, 1985) is also a contemporary theory in the realm of motivation research. Based on the cognitive evaluation theory developed by Deci (1971) and one could also say on Maslow’s (1943) need-centric theory, SDT addresses the fulfillment of 3 psychological needs in interplay of internal and external constructs of a person. Since its development the theory has been applied to a variety of context ranging from sports to education to medical health (Deci & Vansteenkiste, 2004). Naturally it has also been applied to work and organizational contexts in several studies (Andreassen et al., 2010; Baard et al., 2004; Deci et al., 2001, 1989; Fernet, 2013; Hetland et al., 2011; Tremblay et al., 2009; etc.) with a growing interest since the beginning of the 21st century. SDT will serve as the main theoretical framework in this thesis for 4 main reasons: (1) it separates motivation from goal setting, (2) it provides a scale of motivation depending on internal orientation and external regulation, (3) it acknowledges the effect of rewards and feedback on motivation, and (4) it has a orientation to increasing well-being, which is essential in modern work environments (Baard et al., 2004; Björklund et al., 2013; Deci et al., 2001; Järveläinen, 2014).

As the main theoretical framework SDT will next be defined in more detail. Focus will be kept especially on the concept of needs, extrinsic and intrinsic motivation, the effects of

rewards and feedback, and regulation and causality orientations as they are all crucial aspects of the theory.

2.3. Self-determination theory

The place to start defining self-determination theory is in its core assumption which states that “the fullest representations of humanity show people to be curious, vital, and self-motivated” (Ryan & Deci, 2000). This phrase lays the tone and foundation for the theory, which simply assumes that people are by nature capable and willing to get inspired and feel an urge to be actionable and creative. According to Deci et al. (1999) this natural tendency builds from the person itself and it is reinforced through tasks which are intrinsically motivating. In addition to this internal effect, the environment can either be supportive or destructive towards this feeling of motivation (Ryan & Deci, 2000).

As stated earlier, the roots of the theory lie in the need-based theories of e.g. Maslow (1943) and McClelland (1965). These classical need theories either assigned a strict hierarchy for different needs or assumed that needs were learned from external influences, respectively. Motivation was assumed to be simply generated from the will to respond to these needs. Building on these thoughts Deci and Ryan (1985, as cited in Deci et al., 1999) came to develop the cognitive evaluation theory (CET) which specified the needs of autonomy and competence. According to CET the perception of fulfillment of these two needs is the main promoter of intrinsic motivation. Moreover, external factors such as rewards, feedback and interpersonal relationships are regarded as constraints when they decrease the perceived fulfillment of either autonomy or competence. For instance rewards can have two effects on intrinsic motivation: (1) autonomy-controlling or (2) competence-indicative (Deci et al., 1999). The perceived effect in this case depends on how positively informative the received reward is.

Although CET is seen as a valid theory for motivation research and especially in the work context, the theory’s main focus revolves around the effect of rewards on intrinsic motivation (Deci et al., 1999).

Instead of walking away to build a different, broader theory for motivation, Deci and Ryan (1985, as cited in Deci & Ryan, 2000) incorporated CET as a sub-theory into SDT. By adding a third need, relatedness, SDT took the initially external interpersonal factor and turned it into an innate requirement. In addition, SDT included extrinsic motivation as an equal contender for intrinsic, clearly depicting that the type of motivation is crucial to understand when studying e.g. performance outcomes (Deci & Ryan, 2000). Furthermore, by acknowledging the need of relatedness, SDT incorporates the well-being aspect of motivation into its core. Several studies

have strongly linked well-being to performance (Baard et al., 2004; Björklund et al., 2013; Haase et al., 2011; Meyer & Maltin, 2010; Sheldon et al., 2004) and for instance Björklund et al. (2013) cite these worrying statistics from the EU: “stress-related illnesses are the second most reported work-related health problem, affecting 22% of workers from the EU (in 2005). In 2002, the annual economic cost of work-related stress in the EU was estimated to be EUR 20 billion (OSHA, 2011)”. Looking at these facts and the characteristics of startups (hectic environment, high-paced competition, heuristic and algorithmic work), the well-being aspect was seen as an essential component to motivation and successful performance.

In order to provide a thorough view on SDT, it is essential to examine all the different aspects of the theory in detail. Although some have been already quickly introduced, the concept of needs, extrinsic and intrinsic motivation, regulation and causality orientations, and rewards and feedback will be presented next with concrete examples and supporting literature.

2.3.1. The concept of needs

As a general definition for needs, Baard et al. (2004) state that “the term needs has been used most commonly to refer to a person’s conscious wants, desires, or motives”. Needs can also be defined more strictly as nutriment, which are required for humans to survive and grow (Ryan, 1995). This definition gives guidelines for categorizing needs and wants or desires. One of the classic and most detailed definitions is that of Murray (1938, as cited in Deci & Ryan, 2000): “A need is a construct (a convenient fiction or hypothetical concept) that stands for a force (the physico-chemical nature of which is unknown) in the brain region, a force that organizes perception, apperception, intellection, conation and action in such a way as to transform in a certain direction an existing, unsatisfying situation”. Although this definition pictures needs as innate, Murray actually assumed them more are learned (Deci & Ryan, 2000). Additionally, Baard et al. (2004) stress that anything with negative effects on humans should never be considered a need. As presented earlier needs have also been arranged into hierarchical orders and have been seen to generate through learning outcomes (Maslow, 1943; McClelland, 1965). The view that SDT has on needs is unique from these theories because (1) it views needs as innate and not learned psychological requirements for growth and health, (2) it defines three specific needs that don’t diminish or grow in strength, and (3) it views these needs as equals (Deci & Ryan, 2000).

Regarding empirical studies using need theories in literature there is a clear distinction between studying need strengths or need satisfaction. McClelland and Burnham (1976) studied managerial success by first valuing the strengths of needs and then estimated the work

performance. Maslow (1943) and McClelland (1965) both imply that needs lead to actions when a deficit is perceived and, vice versa, a surplus will diminish the effect the need has on actions. Although also focusing on need strengths, Hackman and Lawler (1971) hypothesized that need satisfaction had different orders which would either enhance or diminish work attitudes in enriched jobs. In contrast to these studies, SDT finds that need satisfaction should be the target of empirical studies because the theory views needs as innate and constantly active. Baard et al. (2004) connect needs to performance by linking need satisfaction with job satisfaction. In other words, by satisfying the three psychological needs at work a person will feel satisfaction from their job, which will in turn have a positive effect on the work outcome itself. This has been proven to an extent with studies by Andreassen et al. (2010) and Hetland et al. (2011).

After defining needs, their empirical study and linking them to performance, a clearer definition of the 3 psychological needs included in SDT is in order:

Autonomy is used to describe the need of personal freedom, self-determination, self-control and ability to affect the course of events (Deci & Ryan, 2000).

Competence describes the innate need to grow, learn, acquire skills, be proficient and having confidence in front of challenges. (Deci & Ryan, 2000).

Relatedness incorporates the need for interpersonal contact, the feeling of being accepted by others, feeling of being needed and respected (Deci & Ryan, 2000).

2.3.2. Intrinsic and extrinsic motivation

The two distinct types of motivation, intrinsic and extrinsic, acknowledged by SDT were first modeled by Porter and Lawler (1968, as cited in Gagne & Deci, 2005). According to them intrinsic motivation stems from the activities and actions conducted by a person who receives instant satisfaction from these particular tasks. In contrast, extrinsic motivation stems from the external rewards or outcomes which are received upon completion of a certain activity. SDT shares these definitions of motivation, but differs from the assumption that these two forms of motivation are as a sum responsible for the overall perceived job satisfaction, which is how Porter and Lawler (1968, as cited in Gagne & Deci, 2005) hypothesize. SDT proposes that there is generally only one dominant form of motivation in a situation of possible activity (Ryan & Deci, 2000).

In addition to intrinsic and extrinsic motivation SDT defines a third type, amotivation, which refers to a complete lack of motivation and generally leads to inactivity (Ryan & Deci, 2000). These three types form the scale of motivations which are determined by different

Then again, a person experiencing integrated regulation has fully acknowledged and internalized a set of values and processes and therefore feels extrinsically motivated, which in some cases could even be taken for intrinsic motivation. The perceived locus of causality or causality orientations in Figure 2 represents the “degree to which people are (1) autonomy oriented, which involves regulating their behavior on the basis of interests and self-endorsed values, (2) control oriented, which involves orienting toward controls and directives concerning how they should behave, and (3) impersonally oriented, which involves focusing on indicators of ineffectance and not behaving intentionally” (Deci & Ryan, 2000). Generally these orientations present whether a person is inclined towards intrinsic, extrinsic or amotivation. For instance, a person with strong control orientation will tend to move toward less autonomy-supported (more controlled) environments and be extrinsically motivated. Baard et al. (2004) present that autonomy orientation correlates positively with work performance and Lam and Garland (2008) propose that these causality orientations can be used to predict work outcomes.

The relevant regulatory processes in Figure 2 describes the processes related to the activity driven by the corresponding motivation. A person who is intrinsically motivated will perceive an innate interest, enjoyment and satisfaction from the completion of the activity itself. In contrast, a person who is extrinsically motivated with an introjected regulation will have a certain amount of self-control and rewards will be internal, but reflect a, say, increase in public status or something similar, which needs an external instrument. Integratedly regulated extrinsic motivation, which is almost equal to intrinsic, presents a person feeling a complete synthesis with an externally given activity and personal values, which generally have already been internalized from an external source (Deci & Ryan, 2000).

As a final remark it should be noted that OIT is one of the main differentiating views when comparing SDT with other motivation theories because it defines 6 different types of behavior in comparison to one or two (intrinsic and extrinsic) by other theorists (Ryan & Deci, 2000).

2.3.3. Rewards and feedback

Rewards and feedback are a central part of work motivation research and their effects on behavior have been studied from the beginning of work motivation research (Deci et al., 1999). Different rewards have been categorized and named in several different ways in motivation literature. The following categorization by Deci et al. (1999) was used in this study: (1) task-contingent rewards are given for the completion of a certain task, (2) task-non-contingent

rewards are given irrelevant of the completion of tasks, and (3) performance-contingent rewards are given for reaching a specific level of quality upon task completion. Examples of these rewards are: pay raises, promotions, project based pay and recognition for task-contingent; base salary, job security, flexible hours and good equipment for task-non-contingent rewards; and bonuses and option programs for performance-contingent rewards (Locke & Latham, 1990). In the literature feedback is kept close to rewards and for example positive feedback is defined as verbal rewards by Deci and Ryan (2000).

A large portion of research concerning the effects of rewards has revolved around the effect of external rewards on intrinsic motivation (Deci et al., 1999; Deci, 1971; Eisenberger & Shanock, 2003; Ryan et al., 1983). The study by Ryan et al. (1983) assumed that especially task-contingent rewards have a negative effect on intrinsic motivation because they have a link to the activity in question. The reward can be seen as having control over the person because it defines a wanted end result. Ryan et al. (1983) were, however, most interested in performance-contingent rewards as they are able to both convey control and satisfy the need of competence. Their study found that in order to increase intrinsic motivation, performance-contingent rewards should be delivered in a way which expresses competence without matching feedback (or verbal rewards) and in an autonomy-supportive context. Gagne and Deci (2005) highlight the impact of interpersonal context around reward and feedback administration: “One of the most important results from studies examining the effects of rewards on intrinsic motivation is that the interpersonal climate within which rewards are administered has a significant influence on the rewards’ effects. Specifically, when rewards are administered in an autonomy-supportive climate, they are less likely to undermine intrinsic motivation and, in some cases, can enhance intrinsic motivation”. One of the strongest benefits of using SDT in reward focused research is its subtheory OIT, which, as described earlier, differentiates the different forms of extrinsic motivation according to regulation types. This allows a more specific and focused approach on studying effects of reward administration in different interpersonal contexts and according to different causality orientations (Gagne & Deci, 2005). Based on the studies by Eisenberger and Shanock (2003) and Gagne and Deci (2005) the main finding concerning work motivation and rewards is that autonomous or intrinsic motivation enhances performance and performance-contingent rewards administered in an autonomy-supportive climate will enhance intrinsic motivation. Also feedback or verbal rewards should be competence-enhancing, timely and not identically administered with performance-contingent other (i.e. monetary) rewards (Eisenberger & Shanock, 2003; Gagne & Deci, 2005).

3. Methodology

This chapter defines the methodology used in this thesis. It begins with the research objective and research questions. These are used to structure the analysis of the empirical evidence. After this the case study method is described along with other issues related to research design. Finally, the data collection and analysis methodology is presented alongside a short introduction to the anonymous case companies.

3.1. Research questions

The objective of this thesis is to study the work motivation of non-founding software startup employees using self-determination theory (SDT) as the main theoretical framework. Empirical evidence was gathered through interviews with both founders and employees. Guiding the research and especially the analysis of empirical data are the following three research questions:

RQ1: How do employees and managers perceive the fulfillment of needs defined by SDT?

RQ2: How does the perceived fulfillment of needs (RQ1) change along the startup lifecycle?

RQ3: How do rewards and feedback affect motivation in the premise of the perceived fulfillment of needs (RQ1)?

Research question 1 is in the core of the main objective of this thesis. Answering it sheds light onto the type of motivation experienced by employees. The three psychological needs defined by SDT were used as the main theoretical framework for analysis empirical evidence.

Based on entrepreneurship literature and the interviews with case company founders, a version of the startup lifecycle was developed and visualized in Figure 1. According to SDT (Ryan & Deci, 2000), the interpersonal context has a major impact on motivation. Thus the objective of research question 2 is to outline the effects that company and especially staff growth have on work motivation.

Rewards and feedback can have crucial effects on intrinsic motivation (Gagne & Deci, 2005). By answering research question 3, the aim is to discover the effects that rewards and feedback in software startups have on non-founding employee motivation. The perceived fulfillment of needs is used as the main premise in which rewards are administered.

3.2. Research design

Looking at Deci et al.'s (1999) meta-analytic literature review on studies concerning the effect of external rewards on intrinsic motivation, Gagne's and Deci's (2005) study on SDT and work motivation and Johnston's and Finney's (2010) study on measuring basic need satisfaction, it is clear that most of the studies are quantitative by nature. Early research was mainly done in laboratories (Deci et al., 1999) while more recent has been focused on real environments using satisfaction diaries and self-reporting (Johnston & Finney, 2010). Results were mainly numeric scale answers, which required large sample sizes. Thus, the focus of work motivation research was in larger corporations (Gagne & Deci, 2005). In contrast to quantitative research, qualitative allows a more in-depth view on the issue at hand and it can be used in small scale studies (Silverman, 2005). In qualitative research, the focus is on subjects like people's understandings, values and interactions with others, their environment and reality in general (Silverman, 2005). According to Silverman (2005) the choice of methodology should be done in relation to what knowledge is wanted to be gathered, but also taking into account the resources and personal preferences. The qualitative methodology was chosen because there is a lack of research in small companies (Sauermann, 2015) and the need for deeper knowledge was imminent. Also the use of SDT in the startup context hasn't been studied, which required the present study to take a more explorative touch, allowing it also to contribute to work motivation literature. Moreover, the resources of this thesis were limited, as the researcher was working part-time without a research budget, which minimized the scale of the study. The personal preference of the researcher also weighted the choice of methodology, as the knowledge of qualitative research was much more extensive than that of quantitative.

The main research method used in this thesis is the case study method. Case study research uses empirical evidence from real-life cases to build new theory (Eisenhardt, 1989). Generally, a gap should be identified to justify the use of cases and theory building instead of theory testing (Eisenhardt & Graebner, 2007). As already presented, there is a lack of research in the entrepreneurship literature concerning work motivation in startups (Sauermann, 2015). Also, studies incorporating SDT in the work organization domain have been scarce (Gagne & Deci, 2005). The most contemporary studies in the work context have been related to goal-setting (Sheldon et al., 2004), well-being (Baard et al., 2004; Björklund et al., 2013; Meyer & Maltin, 2010; Van den Broeck et al., 2013), management and leadership (Brüggemann, 2014; Hetland et al., 2011; Leung, 2008; Pearce et al., 2011), and creativity (Eisenberger & Shanock, 2003; Friedman & Förster, 2005; Järveläinen, 2014; Sauermann, 2015). According to

Eisenhardt (1989) case study research doesn't require a strict theoretical background and research questions are allowed to evolve along with the study. The case study in this thesis concerns 3 Finnish software startups and their non-founding employees. SDT is the only theoretical framework guiding the research and research questions were modified along the way either due to findings in literature or empirical evidence.

3.3. Data collection

In this part the case companies will be presented to the extent of what the company's business model is, what phase of the lifecycle they are in, how they were chosen and were interviewed. After this a detailed description is provided of how the empirical evidence was collected.

3.3.1. Case companies

As already stated the present study was conducted as a case study with 3 case companies. The selection of the companies started by defining the scope of the study. As described earlier, it was decided that the companies included would need to be producing a software product of their own and not, for instance, doing software consulting. After a shortlisting session, 6 companies and their founders were approached asking for their willingness to participate in the study. 1 company didn't respond at all, 2 companies denied the request and eventually 3 companies accepted the request to allow the use of their employees' time. This amount was considered sufficient together with the supervising professor and instructor. It should be noted that all of the founders who responded to the request were acquaintances of the researcher and one of the case companies was the employer of the researcher during the study. These connections were of value for gaining the chance to gather empirical evidence. Also, the researcher was already somewhat familiar with all of the companies, which was helpful during the interviewing process.

All of the case companies will remain anonymous, however, a short description of each is necessary. At the time of the study, company A produced a B2B SaaS product for professionals looking for business opportunities within the public sector. They employed close to 20 people and they began testing monetization during the study. Company A is situated in the beginning of the initial growth phase of the startup lifecycle. Company B produced an online marketing optimization platform, which it had been selling to profitably for over a year. They employed close to 70 people and were experiencing heavy global growth which had required the opening of 3 international offices. Company B is situated at the very end of the scaling phase of startup lifecycle. Lastly, company C produced communications software for

cancer patients and doctors. They employed 15 people and had been generating revenue for some time. Company C is situated between the post-founding and initial growth phases. It was the hardest to place mostly likely due to its business model of selling to large hospitals and healthcare organizations. In contrast to the other two companies, C's deal sizes are much larger and take more time to close, which sets a different pace for scaling.

3.3.2. The theme interview method, interviewees and interview structure

The method of choice for gathering empirical evidence was semi-structured interviews and more specifically the theme interview method. Hirsjärvi and Hurme (2004) define the theme interview as a specific version of semi-structured interviews, in which the interview is divided into predefined themes. These themes are the only structure guiding the course of the interview and discussion is therein allowed to flow freely. Silverman (2005) states that if the nature of the study is explorative, the sample size small and the method for gathering evidence is through interviews, then open-ended questions should be applied. This leaves most room to move about with the interviewee and focus on the subjects that are seen most relevant during the interview. Moreover, Hirsjärvi and Hurme (2004) present 5 key characteristics of research interviews: (1) the interviewer plans the interview in advance, (2) the interviewer briefs and directs the course of the interview, (3) the interviewer motivates the interviewee when necessary, (4) the interviewee acknowledges their role during the interview whereas the interviewer knows it in advance, and (5) confidentiality is self-evident. These findings were used as the theoretical guidelines for carrying out the interview process.

A total of 20 interviews were scheduled, after a round of quick conversations with the founders: 6 with founders and 14 with employees. The interviewees' job titles and lengths of employment are presented in Table 1. As stated in the scope of the study, employees with either business or software related tasks were included. The only employee not fitting this scope was the product manager, who, however, had been working shortly as an account manager before beginning his new tasks. The average employment time for employees was a bit over 12 months, with the longest being 2 years and 2 months, and the shortest only 4 months. Other than the task scope there were no restrictions for who could attend the interview. Company A's interviewees were hand-picked by the researcher as they were colleagues. Company B sent an in-house message requesting for volunteers to be interviewed. Half of them applied this way and the rest were personally contacted by the researcher. Company C appointed their 2 interviewees once the researcher arrived at the office for interviews. Regarding the tasks of founders, it's interesting to see that all of them had at least one large operational task in addition

to the management responsibility of their subordinates. Lastly, it should be noted that out of the 20 interviewees 18 were more or less past acquaintances of the researcher. This background had the following positive effects: (1) it allowed the gathering of the 3 companies and the 20 interviewees without great use of resources, (2) interviewees were active in scheduling times for interviews, and (3) interviewees were much more talkative and thorough with their answers. A more detailed speculation of the effects of interviewing acquaintances will be presented in the reliability discussion in Chapter 5.

Table 1: Roles, titles and tasks of interviewees

Company	Role	Title	Task	Employment
A	Founder	CEO	Management, Product development	-
A	Founder	CTO	Management, Software development	-
A	Employee	Business Development Manger	Business development	10 months
A	Employee	Business Development Manger	Business development	10 months
A	Employee	Business Development Manger	Business development	9 months
A	Employee	Software Engineer	Software development	1 year 5 months
A	Employee	Software Engineer	Software development	9 months
A	Employee	Software Engineer	Software development	9 months
B	Founder	CEO	Management, Sales, Communications	-
B	Manager / Investor	VP of Engineering	Management, Recruiting	9 months
B	Employee	Product Manager	Product development	4 months
B	Employee	Account Manager	Sales, Account management	1 year 6 months
B	Employee	Account Manager	Sales, Account management	2 years 2 months
B	Employee	Account Manager	Sales, Account management	2 years 1 month
B	Employee	Data Scientist	Software development	1 year 9 months
B	Employee	Software Engineer	Software development	6 months
C	Founder	CEO	Management, Sales	-
C	Founder	CTO	Management, Software development	-
C	Employee	Software Engineer	Software development	7 months
C	Employee	Software Engineer	Software development	4 months

The theme interview structure (Appendix 1) was developed based on the SDT and work motivation literature. The 3 themes, (1) tasks and responsibilities, (2) work environment and climate, and (3) rewards and feedback, were chosen based on the most frequent subjects in contemporary SDT literature in the work context (Baard et al., 2004; Deci et al., 1999; Deci &

Ryan, 2000; Gagne & Deci, 2005; Graves & Luciano, 2013). These were seen as concrete and relatable themes that would carry the discussion and require a minimum of explanation or guiding from the interviewer. The themes were accompanied with a set of facilitating questions which were used to keep the discussion going. The questions were drafted based on the different scales and questionnaires used in SDT research. Especially the work of Kyndt et al. (2012) and Tremblay et al. (2009) proved helpful here. The W-BNS scale by Broeck et al. (2010) was the main source of theory backed information for question development. Lastly, there were two sets of interview agendas: one for founders and one for employees. The employees were asked to answer questions based on their own experiences, while the founders were asked to answer based on how they thought their subordinates would perceive the matter to be.

All interviews were held during the span of one month. The initial goal was to interview the founders first to gain insights on the companies' background, which could then be used as knowledge in the employee interviews. This succeeded with companies A and C. The founder of company B was interviewed as the very last person. The interviews were audio recorded as the researcher was working alone and needed to focus on the discussion. Notes from the interviews were written based on the recordings in the timeframe of 7 days the most. The notes are not published in this thesis as they would reveal the identity of respondents, which clashes with the confidentiality aspect of research interviews (Hirsjärvi & Hurme, 2004).

3.4. Data analysis

The analysis of the data followed the grounded theory approach defined by Corbin and Strauss (1990). According to them the approach is a combination of inductive and deductive reasoning where the analysis begins from the empirical evidence but theory built in earlier studies is acknowledged and has a guiding effect. Due to the fact that close to all research done with SDT in the work and organizational context is quantitative (Deci et al., 1999; Gagne & Deci, 2005; Johnston & Finney, 2010), the analysis in this study couldn't fully apply the theoretical framework as presented in literature. A deductive approach, which according to Tuomi and Sarajärvi (2009) is based on existing theory which is tested in new contexts, could have been used in the analysis of empirical evidence if suitable qualitative research would have been available in this particular context. Mäkelä and Turcan (2007) found that "a typical justification for selecting the grounded theory method is that existing theory is considered inadequate or lacking at the time". Also Eisenhardt (1989) states that lack of empirical validity in contemporary contexts is a justified reason to use the grounded theory approach.

The basis of the analysis lies in the concept of needs of SDT. Although the evidence was gathered through theme interviews, the data was analyzed according to the 3 psychological needs. The notes of each interview were scanned for opinions and experiences which reflected need satisfaction. These were codified into more general statements which could be applied to experiences from all 3 companies. Quotes that left the interviewee anonymous were also gathered to highlight the subjective opinions. Similar statements were counted and found to increase the importance or significance of that particular opinion. Also the positivity and negativity of the statements was noted. These are subjective views made by the researcher based on the way the interviewees verbally described their experiences. This total collection of statements provides an answer to RQ1 and defines the premise of need satisfaction in this case study. Figure 2 was used to present the corresponding types of regulation and causality orientation and link the evidence more strongly to the theoretical framework. Next, the statements were divided according to what phase of the company they belonged to, or i.e. in what phase they were experienced in. Here the startup lifecycle presented in Figure 1 was used as the main framework to answer RQ2. The notes from the rewards and feedback theme were also codified as generalized statements. These statements were used with the answer from RQ1 and the theoretical framework from Chapter 2.3.3. These results provided an answer for RQ3. All results are presented in detail in Chapter 0 and answers to research questions are discussed in Chapter 5.

4. Results

This chapter includes the results from the empirical research. As stated in the previous chapter, the evidence will be presented here in detail and refined according to the research questions. Due to the need for confidentiality the results are a collection of generalized statements and anonymous quotes, which are displayed in tables and opened in text. The statements are seen to convey the most common opinions and experiences from all 3 companies, whilst the quotes of individuals add a narrative and more subjective point of view. All of the statements are listed in Appendix 2. In this chapter only the most common statements (2 or more mentions) will be addressed with corresponding quotes. Statements by founders and employees ($n(f) = 6$, $n(e) = 14$) are presented in the same table, which contains either positive or negative perceptions. This allows a comparison between the most important statements from each role. The results will be presented in the order of the research questions: first the statements corresponding each need, next the statements and needs corresponding the different phases of the startup lifecycle, and last the statements related to rewards and feedback. Further discussion and actual answers to the research questions will be provided in Chapter 5.

4.1. Psychological need satisfaction

The perceived psychological need satisfaction will be presented in this chapter. This includes the statements by both founders and employees. During the data analysis process, a lot of effort was required to single out the experiences corresponding to need satisfaction. Although reading between the lines was tempting, only explicitly described experiences were included as generalized statements. Moreover, between the 3 psychological needs, the most challenging boundary was between autonomy and competence. Although the needs are well defined in Chapter 2.3.1, the issues regarding tasks and responsibilities were hard to categories under either related to autonomy or competence. The selections made by the researcher are thus prone to subjectivity.

4.1.1. Autonomy

As defined earlier autonomy describes the need for self-determination and personal freedom (Deci & Ryan, 2000). Autonomy satisfaction and the support for autonomy in the work environment are one of the most crucial facilitators of intrinsic motivation according to SDT (Gagne & Deci, 2005). At the workplace this can be constituted, for instance, as the freedom to decide on how to handle the tasks given to you, or the chance of affecting your tasks and

responsibilities altogether. The empirical evidence generated both positive and negative perceptions of autonomy satisfaction which are presented in Table 2 and Table 3. Altogether the amount of statements remained quite small when compared to competence or relatedness satisfaction.

According to the founders, the most important statements related to autonomy satisfaction were that employees are given large responsibilities, employees find tasks interesting, goals are set together with employees and employees have a lot of freedom. *“All employees receive a large responsibility from day one”* was a common quote from almost all the founders. The tasks and goals of the employees are followed and updated to keep the learning curve steep. *“How do we keep these guys learning and learning”* was the concern of 2 out of 6 founders. Responsibilities related to software developers are broader and task variation in the software domain is higher than with business-side employees. Several founders stated: *“We want our developers to be proficient in several technologies and constantly learn new ones. This requires a high level of freedom.”* A couple founders also stressed the low hierarchy of the organization: *“Although I’m the CEO, I’m just another colleague to the other employees.”*

Looking at the employee side of autonomy satisfaction, it can be stated that the founders’ thoughts and employees’ perceptions are well aligned. Employees most noted statements included: employees find tasks interesting, employees can affect their tasks, employees can affect their responsibilities and employees can affect anything. The tasks and responsibilities are in order and employees feel that they can have an effect on what they are working on or anything else at the workplace. Also two employees directly stated that the company culture promotes autonomous work. *“I have the best knowledge to care of problems and challenges, and I’m allowed to do just that”*, as one employee responded.

Table 2: Positive perceived satisfaction of autonomy

Founder (n=6)	Count	Employee (n=14)	Count
Large responsibility for employees	5	Employees find tasks interesting	6
Employees find tasks interesting	5	Employees can affect their tasks	4
Goals are set together with employees	3	Employees can affect their responsibilities	3
		Employees have enough responsibilities	3
Employees have a lot of freedom	3	Employees can affect anything	3
Responsibilities are divided naturally	2	Employees handle challenges as they see best	2
No strict responsibilities to keep work interesting	2	Employees can affect the goals of the company	2
Low hierarchy; CEO is just a colleague with different tasks	2	Company culture promotes autonomous work	2
		Managers feel like colleagues	2

The negative statements, which are listed in Table 3, addressed the problems of having to do mandatory and non-inspirational tasks, employees having too big responsibilities and roles being unclearly defined. Concerning employees in software development side, routine tasks and anything related to technical debt was seen as forced tasks with little autonomy satisfaction. Employees in business development had tasks such as support and dealing with technical customer issues that were seen as mandatory and non-autonomy-supportive tasks. Moreover, 2 out of 14 employees stated that the unclear defining of their roles had a negative effect on their work efforts. Two most worrying quotes are: “*I had too much to do and I guess I was in the beginning of a burn out*” and “*I had no idea what I was supposed to do and constantly had to ask around*”.

Table 3: Negative perceived satisfaction of autonomy

Founder (n=6)	Count	Employee (n=14)	Count
Employees can't affect the assigning of certain tasks	2	Employees can't affect their tasks	3
		Employees have too high responsibilities	3
		Employees roles aren't clearly defined	2

4.1.2. Competence

The need of competence was defined as being proficient and having confidence in front of challenges (Deci & Ryan, 2000). In the work context, competence is an essential promoter of intrinsic motivation as it is directly linked to the professional capabilities of a person (Gagne & Deci, 2005). At the workplace, need satisfaction related to this context is concerned with the successes and learnings of personal or a team's work-related efforts. Competence is affected both internally by own perception and externally by rewards and feedback (Deci & Ryan, 2000). The perceived competence satisfaction generated a good amount of statements, which are listed in Table 4 and Table 5. The tasks and responsibilities theme produced discussions which corresponded well to competence satisfaction. Along with relatedness, competence had the most statements that were shared among several interviewees.

To the extent that these statements can generalize, the founders viewed employees as described by the following: employees have grown with the company, employees enjoy new challenges, employees learn a lot from the job, employees believe in their skills and employees enjoy working. In addition to this, developers were described as being "full stack", which means they are proficient in all major technologies used by the company. In contrast, business-side employees are constantly specializing into different industry verticals and thus becoming more efficient at what they do. Related to goals and especially personal ones, a couple founders stated that *"we talk a lot with our employees about where they want to go and what they want to learn next"*. Generally, competence satisfaction, as perceived by founders, in this case study can be summarized by this founder quote: *"it's hard to believe how much these employees have learned and how well they are performing"*.

The major positive statements coming from the employees raise these issues above the rest: employees enjoy learning on the job, clear goals and KPIs help employees to focus their work, and employees are confident with taking on new challenges. 2 of 14 employees stated the following when talking about facing new challenges: *"how hard can it be?"* and *"new and hard stuff is why I do this work"*. Although not explicitly stated by everyone, it seemed that almost all the employees really enjoy constant learning and facing new challenges. Employees also experienced support from the company and managers in regard to personal goals and learning. A few employees valued the fact that they could collaborate with top industry players and hugely improve their skills and knowledge through this interaction.

Table 4: Positive perceived satisfaction of competence

Founder (n=6)	Count	Employee (n=14)	Count
Employees have grown with the company	3	Employees enjoy learning on the job	9
Developers are full stack, ie. proficient in several different technologies	3	Clear goals and KPIs help employees to focus their work	9
Employees get to work on interesting problems with interesting technologies	3	Employees are confident with taking on new challenges	8
Employees enjoy new challenges	3	Employees' individual contribution is visible in company's success	4
Employees learn a lot from their job	2	Managers support learning new skills	3
Employees are specialized in certain verticals	2	Company supports employees' personal goals	3
Employees believe in their skills	2	Employees have sufficient tools and knowledge to work efficiently	3
Goals are clear and thus employees know what needs to be done	2	Employees can solve problems together with the best companies in the world	2
Employees' personal goals are clear, because you know everyone	2	Company is at the top of their industry	2
Employees are pragmatic and realize the uncertainty	2	Employees learn from mistakes	2
Employees enjoy working	2		
Employees are constructive	2		
Employees are very interested in the industry	2		

As with autonomy, the negative perception of competence was far smaller than the positive. Here founders and employees were aligned by stating that some tasks are not interesting and usually because they don't provide new learnings. Things that the founders didn't explicitly mention were related to resources and goal measuring. *"We don't have enough people to take care of all this work"* was stated by two employees and another two implied: *"our development team doesn't have any measurable goals, which is slightly antagonizing"*.

Table 5: Negative perceived satisfaction of competence

Founder (n=6)	Count	Employee (n=14)	Count
Some tasks are not interesting	2	Teams are lacking resources	2
		Development team is lacking measurable goals	2
		Routine tasks are not interesting	2

4.1.3. Relatedness

Relatedness includes the needs for interpersonal contact and being accepted by and cared for by people around you (Deci & Ryan, 2000). This need wasn't part of CET, which incorporated autonomy and competence, but it was added along the development of SDT, which looked to broaden the CET view of motivation study (Ryan & Deci, 2000). Relatedness comprises the people aspect at the workplace and views its effects work motivation and performance. The perceived satisfaction of relatedness is presented as statements in Table 6 and Table 7. A good amount of unique statements were identified and as stated earlier, experiences concerning relatedness were more clearly found than autonomy and competence.

There were two founder-views which were brought up by every founder: colleagues are good friends, and a strong culture and teamwork bring the employees closer to each other. One founder commented: *"These guys really enjoy each other's company and they meet outside of work too."* Founders also perceived that employees feel good about being a part of the company, employees enjoy working and spending non-work time together. *"People like to wear the company T-shirt"*, *"our employees use a specific hashtag when posting updates on social media"* and *"not a day goes by that a bunch of employees stay quite late at the office to just hang around and play pool"* were only a few comments which spoke of the satisfaction of relatedness. Also every employee works in a team or at least with one other person, which lays a basis for everyday interpersonal contact.

Again the employees' responses were very much aligned with the thoughts of the founders. 11 out of 14 employees felt good about belonging to the company and considered work and non-work time with colleagues in good balance. *"It's practically a requirement that you stay at the office and have fun with our colleagues"* exaggerated one employee. Half of the employees stated that people share the same spirit, they know their colleagues and are even close friends, and enjoy working with and helping out others at work. *"Say you need help with moving, these are the guys that I call"* and *"the better you know your colleagues the more efficiently and transparently you work with them"* were just a few comments. 2 employees also enjoyed the competitiveness of the people around them: *"there's people going past left and right, but that just keeps you going too!"*

Table 6: Positive perceived satisfaction of relatedness

Founder (n=6)	Count	Employee (n=14)	Count
Colleagues are good friends	6	Employees spend enough non-work time with colleagues	11
A strong culture and teamwork bring the employees closer to each other	6	Employees feel good about belonging to the company	11
Employees feel good about being a part of the company	5	Employees help each other	8
Employees enjoy working together	4	Employees know each other very well	8
Employees enjoy spending non-work time together	4	Employees have close friends as colleagues	7
Everyone works in a team	3	Employees share the same spirit at work	7
Employees can get help from anyone	3	Employees enjoy working with each other	5
Everyone puts the team's benefit in front of their own	2	Employees work in teams, pairs	4
Managers care for their employees	2	Colleagues respond at work	3
		Work climate is very competitive	2

The amount of negative statements (Table 7) was the largest for relatedness. The reason for that lies in the fact that there were a lot of bipolar opinions, in which the interviewees had simultaneously two opposite views. The best example here is that most founders and employees knew their colleagues both well and poorly. This was also one of the most concrete negative effects of fast growth, which will be addressed in more detail in Chapter 4.2. Moreover, several founders and employees wished more non-work activities to facilitate new acquaintances at the workplace. The most worrying statements were: employees don't feel like they belong to the company, colleagues can't stand each other and colleagues don't respond at work. Three employees made this exactly the same comment: *"you ask for help or share an interesting find and you get no response"*. Although affecting only two employees, this comment is very alarming: *"I can't really work with this other person because we had a big fight and we don't talk anymore"*.

Table 7: Negative perceived satisfaction of relatedness

Founder (n=6)	Count	Employee (n=14)	Count
Employees don't know each other that well	5	Employees don't know each other that well	10
There could be more non-work events with colleagues	4	Colleagues don't respond at work	3
The work atmosphere is cyclically very hectic	2	Work climate is very competitive	3
Employees don't feel like they belong to the company	2	Employees don't spend enough non-work time together	3
Colleagues can't stand each other	2		
Teams have siloed	2		

4.2. Changes aligned with the startup lifecycle

As implied through research question 2, the linking of need satisfaction results to the different phases of the startup lifecycle is a most interesting topic. Some results from the founder interviews were already discussed in Chapter 2.1.2, which lead to the formation of the startup lifecycle. This framework was used here to divide the different statements into corresponding phases as shown in Table 8. It should be noted that not all statements were placed into the framework. Only the statements which encountered a change during the growth of the companies or were seen as distinctly belonging to only one phase were presented. Also, these changes had to be explicitly mentioned by the interviewees. A change mentioned by one interviewee wasn't applied to all others from the same company, for instance. The employee or founder distinction was also removed and statements were only presented under the corresponding needs. The first and second phases of the lifecycle didn't have any corresponding statements so they were removed from the table. The statements were placed to phases according to the most common view of the interviewees.

Table 8: Changes aligned with phases of startup lifecycle (n = 20)

	Founding phase: - Founders - Ideation - MVP - Initial funding	Post-founding phase: - First employees - VC funding (1st major)	Initial growth phase: - 1st big batch of employees - PMF - Revenue	Scaling phase: - 2nd big batch of employees - Profitability
Autonomy			Employees aren't supported enough in their work	
			Employees can't affect the goals of the company	
			Employees can't affect their tasks	
Competence			Clear goals and KPIs help employees to focus their work	Employees don't take risks in completing their tasks
			A lot of work is done to clarify company and team goals	Employees can solve problems together with the best companies in the world
			Employees are missing tools and knowledge to work efficiently	Employees have grown with the company
			Employees are specialized in certain verticals	Employees' individual contribution isn't visible in company's success
			Employees have too big responsibilities	Employees' personal goals aren't clear because you don't know everyone.
			Hard for teams to focus at the crowded office	Mentoring for employees who want to grow
Relatedness			Employees don't know each other that good	Colleagues don't respond at work
			Everyone works in a team	Employees don't feel like they belong to the company.
			Employees don't spend enough non-work time together	Work environment is chaotic
			Colleagues can't stand each other	
			Teams have siloed	
			Processes and tools to help employees know each other better	
			Employees aren't friends at work	
			Colleagues don't come as they are	
			Employees don't feel good about belonging to the company	
			Employees don't share the same spirit at work	

Firstly, a general observation of the results reveals that most of the changes related to need satisfaction take place during the initial growth phase. As presented in the startup lifecycle this phase sees the arrival of the first big amount of employees, the finding of PMF and the first stable revenue streams. According to the founders, the increase of employee count was one of the main change makers in team dynamics, communication and organization formation.

The results in Table 8 seem to support this and suggest that the large increase in new employees also has a significant effect on need satisfaction. Another general observation reveals that most of the changes related to need satisfaction are negative in nature.

During the initial growth phase, changes related to autonomy state that employees lose some ability to affect their tasks and the goals of the company. Also, employees experienced a decrease in the support they receive for the work they do. Changes related to competence were more varied and contained also positive statements. Goals and KPIs are clarified and employees begin to specialize in different business verticals which allows more efficient work. On the negative side, employees are missing tools and knowledge to be efficient in their work, employees' responsibilities have grown too big and the office environment has become too crowded. The satisfaction of relatedness is affected the most during the initial growth phase. The two positive statements were that teams have been formed, which leaves no-one working alone, and effort was put into facilitating employee interaction. However, some silo-effect was reported concerning teams. In other words, communication between teams decreased and employees experience less interpersonal contact to people outside their own team. Also a more general decrease in knowing your colleagues was experienced. All colleagues weren't necessarily considered as friends and there were also disputes between employees. Belonging to the company didn't feel good anymore and employees weren't considered sharing the same spirit.

During the scaling phase, no changes related to autonomy satisfaction were reported. Competence satisfaction received the most changes, half of which were positive. According to founders, employees were seen to grow with the company by constantly learning new skills, becoming more efficient and specializing in different areas. In this phase employees received the chance to collaborate with the industry's top companies and thus learn all new skills first in the world. A mentoring program was also mentioned by two interviewees. On the negative side, employees didn't see their efforts as having as much direct contribution to the company's success. Also founders stated that employees' personal goals were not clear because they weren't as familiar with employees anymore. Both employees and founders noted that risk-taking in product and business development had decreased. This was seen as both a good and bad thing: the potential downside of breaking something is much bigger, so risks should be minimized, on the other hand, risk taking allows employees to find new and innovative ways to improve the product and business. Only three statements were listed under relatedness satisfaction. One employee described the work environment as chaotic and wasn't at all sure what his tasks or responsibilities were. Two employees reported that colleagues didn't respond

to communication through the company's virtual channels. The main reason they stated was that the amount of employees following the channels had grown so big that people didn't feel obliged to answer. The most alarming statement in this phase was that employees didn't feel like belonging to the company. The reported reasons for this change was that colleagues weren't familiar anymore, managers had become distant and bureaucracy had increased in the company's decision making.

4.3. Rewards and feedback

Rewards and feedback are a central part of work motivation research and their effects on behavior have been studied from the beginning of work motivation research (Deci et al., 1999). As defined earlier, the 3 types of rewards are (1) task-contingent rewards, (2) task-non-contingent rewards and (3) performance-contingent rewards. Rewards and feedback was one theme in the interview agenda and thus generated a collection of positive and negative statements describing the reward and feedback processes in the case companies. Again the full results are presented in Appendix 2 and in this chapter only the most common statements (2 or more mentions) will be addressed with corresponding quotes. Here the negatively perceived rewards (Table 10) was an exception as it contained only two statements. Base salary as a task-non-contingent reward was seen as applicable to all employees and wasn't thus explicitly stated in the tables.

Positively perceived rewards are listed in Table 9. 4 out of 6 founders stated that they are using stock options as performance-related rewards. Also two founders told that they give teams task-contingent rewards in the form of bonuses. Salaries were also said to be revised regularly by half of the founders. Team and individual successes are shared publicly in all of the case companies. Employees perception of rewards corresponded to that of founders. One third of the interviewees expressed raises as a regular performance-related reward. They also found that salary is aligned across the company. Two employees stated that new responsibilities can also seem like rewards.

Table 9: Positively perceived rewards

Founder (n=6)	Count	Employee (n=14)	Count
Team and individual successes are shared publicly	5	Employees receive a performance-contingent reward in the form of stock options.	7
Employees receive a performance-contingent reward in the form of stock options	4	Employees receive raises in their salary	5
Salaries are checked and revised regularly	3	Personal reward for succeeding in tasks and learning	4
Teams receive performance-contingent rewards in the form of bonuses	2	Team and individual successes are shared publicly.	3
Learning through work	2	Salary is aligned across the company	2
		New responsibilities feel like a reward	2

There were only two statements implicating a negative perception toward rewards in Table 10. Two employees stated that their salary was not on market level. “*Changing from one job to another has had a negative effect on my salary, but on the other hand I have found my jobs being more interesting*”, described one employee. Also a founder stated that “*we always give a lower offer compared to the market*”. The idea is to test how interested the job applicant is towards the job and industry. Two founders reported that they don’t have any official and regular task or performance related rewards. The other companies did have these types of rewards, but it is strange that employees didn’t explicitly perceive this as a negative issue.

Table 10: Negatively perceived rewards

Founder (n=6)	Count	Employee (n=14)	Count
No official and regular task or performance related rewards	2	Employees are not getting market salary	2

Positively perceived issues related to feedback are listed in Table 11. Founders and employees’ thoughts were again aligned quite well. Both listed regular 1-on-1 meetings with managers, peer reviewing of work, regular company-wide collection of feedback and retrospective meetings with teams. Two founders told that employees are fast in reacting to problems at the workplace. 4 employees stated that they can always ask for feedback from anyone and that teams share feedback regularly. Also 2 employees highlighted that customers

give a lot of feedback which is shared to all applicable employees. 2 employees thought that their company culture was transparent and they were able to get to all information necessary.

Table 11: Positively perceived feedback

Founder (n=6)	Count	Employee (n=14)	Count
All employees have a regular 1-on-1 meeting with manager	5	Employees have a regular 1-on-1 meeting with manager	6
Employees receive personal feedback that is aligned with their efforts and results	5	Employees can always ask for more feedback	4
Teams have retrospective feedback meetings regularly	3	Work is peer reviewed	4
Tasks reviewed by peers	3	Teams share feedback regularly	4
Managers give an example of how to give feedback	2	Feedback is collected on a company level	3
Regular company-wide feedback survey	2	Customers give a lot of feedback to employees	2
Employees react fast when something is not right	2	Teams have regular retrospective meetings	2
Managers receive feedback from employees	2	Company culture is very transparent	2

Negatively perceived feedback is presented in Table 12. These statements clashed somewhat with the positive experiences described above. For instance, 3 employees stated that they don't have regular 1-on-1 meetings with managers. Also one founder stated that they have had 1-on-1 meetings but they haven't been held regularly as of lately. 8 employees expressed their concern that managers don't give enough feedback and 5 employees stated that colleagues don't give enough feedback to each other. Founders and employees both told that employees don't give enough feedback to managers. Two founders were concerned that feedback in teams doesn't flow like it should.

Table 12: Negatively perceived feedback

Founder (n=6)	Count	Employee (n=14)	Count
Not much feedback is given to managers	3	Managers don't give enough feedback	8
Employees don't receive personal feedback	2	Employees don't give enough feedback to colleagues	5
Feedback in teams doesn't flow like it should	2	Employees don't have regular 1-on-1 with managers	3
Employees don't have regular 1-on-1 meetings with manager	2	No-one notices less visible successes	2
		Employees don't give enough feedback to managers	2

5. Discussion

This chapter combines the results with the literature to form a synthesis of past research and the empirical evidence gathered in this study. The theoretical framework was already used in the previous chapter to present the findings. Here the discussion involves a deeper analysis with past research. First, the perceived need satisfaction in the case companies is discussed and findings are generalized forming a certain premise of the type of motivation and its regulation according to Figure 2. Then, this premise is evaluated according to the results presented in Table 8. Next, the connection of rewards and feedback to motivation are discussed. Lastly, the validity and reliability of the study are evaluated and suggestions for future research are also presented.

As a short review, the research objective and questions are presented below:

The specific problem to solve in this study is:

How are non-founding employees' psychological needs related to motivation satisfied in Finnish software startups along the company lifecycle?

The research questions will be answered through the discussion in this chapter:

RQ1: How do employees and managers perceive the fulfillment of needs defined by SDT?

RQ2: How does the perceived fulfillment of needs (RQ1) change along the startup lifecycle?

RQ3: How are rewards and feedback connected to motivation in the premise of the perceived fulfillment of needs (RQ1)?

5.1. Perceived need satisfaction

Baard et al. (2004) and Gagne and Deci (2005) both link need satisfaction to job satisfaction, which in turn they link to work performance via intrinsic and extrinsic motivation. SDT clearly proposes that need satisfaction should be the focus of research instead of need strengths, for example (Baard et al., 2004). In this thesis, the satisfaction of the three psychological needs was studied in three case companies. Instead of using a quantitative methodology as in most SDT research, a qualitative methodology was chosen. The empirical research produced a collection of generalized statements which were presented with accompanying quotes in

Chapter 0. On a general level, the founders' thoughts were very close to what the employees actually felt and experienced. There was also a distinct correspondence between founders' view concerning employees and SDT's core principle, which states that "the fullest representations of humanity show people to be curious, vital, and self-motivated" (Ryan & Deci, 2000). Founders had full trust in their employees and they showed it by giving large responsibilities.

The most interesting results related to autonomy were statements concerning the responsibilities, freedom and tasks of employees. Positive and negative issues were listed in Table 2 and Table 3. In general, most employees were very happy with their tasks and responsibilities. They found them interesting and they had been given the freedom to resolve issues and tackle challenges as they saw best. They also felt that they could affect what tasks they were given and what their responsibilities included. On the negative side, several employees brought up issues like tasks being handed down to them, responsibilities being too big and roles not being defined clearly. Based on the results, the following statements can be made:

- (1) overall, employees perceive the need for autonomy to be satisfied,
- (2) work includes some mandatory tasks which negatively affect the satisfaction of autonomy,
- (3) the work environments are very autonomy-supportive, and
- (4) there are individuals whose need for autonomy is undermined by too large responsibilities or tasks being handed down from managers or even colleagues.

The need for competence generated a lot of results (presented in Table 4 and Table 5), which focused on employees' learning, goals, challenges and resources. A major part of the interviewees considered learning new skills and becoming more proficient as one of the main takeaways from their job. Almost every employee was also very confident in taking on new challenges. Goals and KPIs were seen to have an effect in directing the focus of work. Employees felt that managers supported their learning and personal aspirations and in addition, interviewees reported having access to world class tools and newest industry expertise. Negative aspects included non-interesting tasks and the need for more resources. The need for competence was perceived satisfied as follows:

- (1) employees learn and develop their skills on the job,
- (2) learning and personal growth is supported by managers, and
- (3) work includes tasks which don't build proficiency.

The results for relatedness are presented in Table 6 and Table 7. Out of the three needs, relatedness had the least uniformity among the statements. Almost all interviewees felt that

they were working with either close friends or colleagues whom they knew very well. Employees felt very good about belonging to the company and the fact colleagues shared a similar work spirit. Generally, people enjoyed working together and helping colleagues was considered self-evident. Founders highlighted the importance of teams and teamwork in creating interpersonal communication and encounters. Work and non-work time spent with colleagues was seen to be in good balance. In contrast to the other needs, the negative issues were most represented in relatedness. Almost all interviewees also highlighted the issue that they knew some colleagues very badly. A few even reported not being able to work with certain colleagues because of bad relations. Work climate and environment was reported as hectic, competitive and chaotic by several employees. In general relatedness was perceived satisfied as follows:

- (1) colleagues care for each other and are willing to help,
- (2) employees enjoy spending time with each other,
- (3) there are worrying issues among individuals and employees are decreasingly familiar with each other as the company grows, and
- (4) the work environment and climate is relatedness-supportive, but not necessarily for every employee.

These views form some kind of impression of the overall need satisfaction in the case companies. According to SDT the study of need satisfaction is the key to evaluating the type of motivation present in an organization (Baard et al., 2004). By using OIT's motivation continuum pictured in Figure 2, we can come to a conclusion of what type of motivation is found in these startups and how is it regulated. Figure 3 visualizes the motivation according to perceived satisfaction in the case companies. The red boxes indicate the proposed level of motivation, self-determination and regulation. Based on the results, overall employee motivation was evaluated as extrinsic with a slight shift towards intrinsic motivation. Identified regulation was the main regulatory style and, in addition, both introjected and integrated styles were also perceived. Deci and Ryan (2000) define these styles as follows: (1) introjected regulation describes a person taking in external view and directions, but not really incorporating them to the core self, (2) identified regulation sees a person fully identifying the value of a behavior, and (3) integrated regulation views a person fully internalizing the value and all other aspects of behavior and incorporating them into the core self. These regulatory styles and also the type of motivation was highly dependent on both the individual and task in question. For example, the software developers could easily reach a state of intrinsic motivation when facing an interesting, new challenge. However, when forced to deal with technical debt,

the developers were almost fully externally regulated and their motivation shifted closer to amotivation.

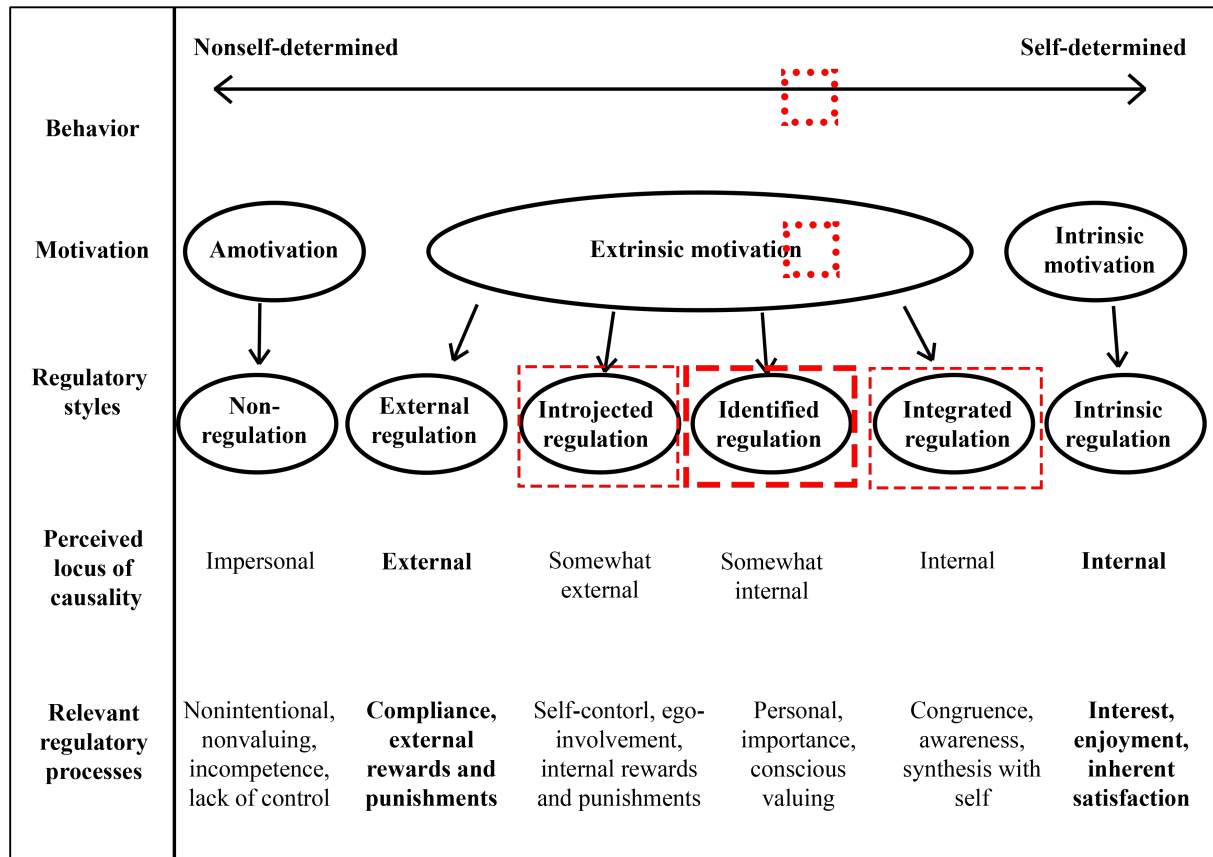


Figure 3: Employees' motivation according to perceived needs satisfaction in startups

5.2. Changes in need satisfaction along the startup lifecycle

As included into the research objective, the positioning of perceived need satisfaction into the startup lifecycle was considered especially interesting. The lifecycle used in this thesis was presented in Figure 1 and it contains 4 phases: (1) the founding phase, (2) the post-founding phase, (3) the initial growth phase, and (4) the scaling phase. The statements listed in Chapter 4.1 describe all the feelings and experiences reported by the interviewees. In Chapter 4.2 the statements which described a certain change caused by the growth of the company were listed and presented in Table 8.

When the founders were asked for distinct milestones in the company history, new employees were unanimously seen as the biggest changing points in the companies' lifecycles affecting product development, sales, team dynamics, communication and organization formation. Now looking at the statements, no changes were identified in the first two phases

of the lifecycle. Most of the statements were listed under the initial growth phase and the rest under the scaling phase. This fact supports the founders' initial thoughts of major change drivers in the companies.

Taking a closer look at the results presented in Chapter 4.2, it seems that the perceived satisfaction of relatedness takes the largest negative blow as the companies grow. Increasing the amount of employees fast has a major effect on the way people familiarize themselves with each other and it increases the chance of people not getting along with certain individuals. Also the feeling of belonging to the company decreases and employees don't necessarily share the same fighting spirit as they used to when the company was smaller. You could say that these are only some additional results of the decrease in familiarity and interpersonal contact. Relatedness was, however, perceived to increase from certain HR processes and, for instance, teamification. All in all, the overall effect of growth was clearly negative on the perceived satisfaction of relatedness, as far as the employees in this case study were concerned.

The second biggest effect of growth is on competence. The same amount of changes was identified in both the initial growth and scaling phases. In contrast to relatedness, there were a lot more positive changes concerning competence. The first changes took place during the initial growth phase. Based on the statements in Table 8, two assumptions can be made: (1) this is the point when the natural evolvement of roles and responsibilities changes to a more planned use of human resources, and (2) planning of company and team goals needs to be developed for best possible internalization. When a company grows and especially in the case of a high-growth startup, the size of the individual contribution coming from one employee decreases substantially. Also the distance between managers and employees grows, which decreases knowledge sharing of personal issues. Overall, the changes affecting perceived competence were quite balanced. There were some negative issues but also a lot of effort was put into tackling the challenges the companies were facing.

The changes affecting autonomy were few and all taking place during the initial growth phase. Although only a few issues were listed, they were all negative and rather drastic. The growth of the company increases the amount of obligatory and routine tasks. Also employees become more specified and work tasks aren't necessarily broad or they evolve slower. In general, autonomy satisfaction was perceived very high and this maybe comes naturally in startups. However, autonomy satisfaction could also be the need which is least addressed, as it is less tangible than for example competence or relatedness.

5.3. Effect of rewards and feedback on motivation

As defined in Chapter 2.3.3, the main finding concerning work motivation and rewards is that intrinsic motivation enhances performance and performance-contingent rewards administered in an autonomy-supportive climate will enhance intrinsic motivation. Also feedback or verbal rewards should be competence-enhancing, timely and not identically administered with performance-contingent other (i.e. monetary) rewards. (Eisenberger & Shanock, 2003; Gagne & Deci, 2005) The conclusions presented in Figure 3 provides the premise of need satisfaction and motivation for the inspection of what effect rewards and feedback had in the case companies.

Deci et al. (1999) categorized rewards as follows: (1) task-contingent rewards are given for the completion of a certain task, (2) task-non-contingent rewards are given irrelevant of the completion of tasks, and (3) performance-contingent rewards are given for reaching a specific level of quality upon task completion. In the case companies, base salary was a self-evident task-non-contingent reward. Also raises and regular salary monitoring was reported by both founders and employees. However, two employees noted that they were probably not getting market salary. Task-contingent rewards were mostly personal verbal rewards or positive feedback. A few founders and employees told about publicly administered verbal or physical rewards. Team bonuses and stock options were the performance-contingent rewards given in these case companies. An interesting find was that no-one believed in personal monetary bonuses. The general opinion was that they incentivize a wrong kind of mentality which directs focus away from teamwork and the company's benefit. This result is in-line with theory as already Ryan et al. (1983) assumed that especially task-contingent rewards have a negative effect on intrinsic motivation because they have a link to the activity in question. The reward can be seen as having control over the person because it defines a wanted end result.

As stated earlier, a large portion of research has revolved around the effect of external rewards on intrinsic motivation (Deci et al., 1999; Deci, 1971; Eisenberger & Shanock, 2003; Ryan et al., 1983). According to Ryan et al. (1983), in order to increase intrinsic motivation, performance-contingent rewards should be delivered in a way which expresses competence without matching feedback (or verbal rewards) and in an autonomy-supportive context. In this study stock options and team bonuses were the performance contingent rewards used by the case companies. Especially the team bonuses were administered exactly the way Ryan et al. (1983) suggests. Stock options were seen as performance contingent because the better results an employee achieves the better the company succeeds and the larger the reward size is. Most

of the employees found this extrinsically motivating with integrated regulation. However, several employees mentioned that the share is actually quite small and you never know what the actual reward size will be at the end. Thus, in this case stock options don't fully seem to have the best possible effect as a performance-contingent reward. It should be noted, however, that the employees receiving stock options had a more positive orientation and drive towards teamwork and collaboration. They also had a stronger feeling of belonging to the company, which also conveyed as a positive boost to daily work motivation.

Gagne and Deci (2005) highlight the impact of interpersonal context around reward and feedback administration: "One of the most important results from studies examining the effects of rewards on intrinsic motivation is that the interpersonal climate within which rewards are administered has a significant influence on the rewards' effects. Specifically, when rewards are administered in an autonomy-supportive climate, they are less likely to undermine intrinsic motivation and, in some cases, can enhance intrinsic motivation". Looking at the results related to autonomy satisfaction and the types of motivation and regulation presented in Figure 3, it can be stated that autonomy is definitely supported in the case companies. Thus, based on past theory and the results, intrinsic motivation shouldn't at least be negatively affected in the case companies. However, as seen through the changes taking place in the initial growth phase (Table 8), founders and managers aren't necessarily fully aware of autonomy satisfaction. The need seems to be satisfied naturally by the modus operandi of these startups. The growth of the companies could be accompanied with more changes that can decrease the effect of rewards on intrinsic motivation. Lastly, feedback does have a significant effect on reward administration as presented by Ryan et al. (1983) and Eisenberger and Shanock (2003). Looking at the results of this study, it seems that feedback doesn't at least undermine the enhancing effect of performance-contingent rewards on intrinsic motivation. The overall feedback culture was bipolar: 1-on-1 sessions with managers were held regularly and not at all, some employees received enough feedback and others didn't, and feedback was given regularly in teams, but some employees didn't get feedback at all from their colleagues. These results would allow to assume that (1) the subjective opinion regarding feedback varies a lot between employees, and (2) the overall feedback culture varies a lot between companies.

5.4. Theoretical implications

This thesis studied work motivation in the startup context and focusing especially on non-founding employees. A qualitative approach was used in contrast to the vast majority of motivation research using self-determination theory as its main theoretical framework. Implications to entrepreneurship and motivation theory will be discussed here.

As stated in the beginning of this thesis, there is a clear gap in entrepreneurship literature. Only a small amount of studies have focused on the employees of startups. Mostly research has revolved around the founding situation, key success factors, VC-funding or the entrepreneur herself. (Sauermann, 2015) This thesis adds to entrepreneurship literature by highlighting the needs of startup employees and stressing their importance regarding work performance. It also adds a chapter to the literature using psychological theory to better understand how employees function effectively at the workplace. It also presents new information regarding rewards and feedback culture in software startups.

Regarding motivation research, this thesis contributes to literature by combining the self-determination theory and startups. The absolute majority of studies using SDT in the work organization context have been either in the laboratory or in large corporations (Deci et al., 1999; Gagne & Deci, 2005). Also the majority of these studies have used a quantitative approach to test the theory created by Deci and Ryan (1999). In this thesis, however, a qualitative methodology was adopted. Reasons for this were the intention of building theory instead of testing it and the need for more in-depth empirical evidence as this was lacking in literature. The results of this study have three implications on motivation research: (1) SDT can be used also in the startup context, although the fast evolution of need satisfaction should be acknowledged, (2) startups are able to use interesting reward practices (e.g. stock options) that don't necessarily fit the results of previous studies, and (3) the changes in need satisfaction are focused on two distinct phases of the startup lifecycle: the initial growth phase and the scaling phase.

5.5. Practical implications

In addition to theoretical implications, there are some practical implications that benefit the founders or managers of software startups. The results from the three psychological needs, rewards and feedback, and issues related to the changes in motivation form a set of topics that should be acknowledged when running a software startup.

Although the need for autonomy was perceived to be well satisfied, the results in

Table 8 present a potential problem. Being somewhat less tangible than competence and relatedness, autonomy can be less highlighted in the daily processes of a company. Also, it seems that the nature of a startup somewhat facilitates the satisfaction of autonomy. When resources are scarce, there is no other option than to give out large responsibilities and give a lot of freedom to employees. This automatically leads to a certain satisfaction of autonomy. When the company grows its resources, a natural decrease in freedom and narrowing of responsibilities takes place. However, the need for autonomy doesn't disappear from the employees. Thus, changes in the company must be also viewed from this perspective and appropriate efforts should be made, if the intention is to keep these employees motivated at the workplace.

The competence need of employees was also perceived as well satisfied. In all companies there was a culture of constant learning and personal growth. However, there was a difference between how each company facilitated this skill development. Also, employees valued learning as one of the top priorities they had concerning work. During high growth, startups should maintain this learning curve by all means necessary and constantly great new ways of facilitating learning throughout the organization.

Relatedness was the most commented need in this study. The closeness and familiarity of the work environment was considered extremely important. This topic, however, faced the quickest changes when the amount of employees increased. Colleagues weren't familiar anymore and employees felt less good about belonging to the company. Founders and managers would have to find ways to maintain the satisfaction of relatedness, even though the company is in a high-growth mode. Some of the companies had already developed processes which helped employees familiarize themselves with colleagues. The onboarding of new employees also plays a large role here.

Regarding rewards and feedback, the major takeaway was individual-level rewards were out of question and feedback wasn't given in enough in every company. In companies that had regular 1-on-1 meetings between managers and employees, founders had a better understanding of employees' personal goals, issues and feelings towards work. This information could be effectively applied to organizational development, thus tackling problems before they had the chance to do harm. Also, companies administering stock options as performance-contingent rewards saw employees showing a more unified spirit and sense of belonging together.

The most significant finding related to changes in need satisfaction was that they were heavily focused into the third phase of the startup lifecycle. There are two assumptions we can

make from this: either (1) the founders aren't anticipating any major changes related to many new employees joining, or (2) the increasing amount of employees forces changes despite of precautions. The results of this study imply that companies entering the third phase should be at least anticipating changes in need satisfaction and put a large effort into minimizing all negative effects through active communication and facilitation of knowledge and best practices.

5.6. Validity of the thesis

The validity of this thesis is evaluated by using the primary and secondary criteria of validity developed by Whittmore et al. (2001). They define the primary criteria as credibility, authenticity, criticality and integrity. Secondary criteria are defined as explicitness, vividness, creativity, thoroughness, congruence and sensitivity.

Credibility assesses whether the results portray the interviewees opinions in a true way (Whittmore et al., 2001). In the present study, results were presented as generalized statements which were derived from the interviewees explicit experiences. Also, direct quotes, which allowed anonymity, were presented along these statements to give a direct view to the responses.

Authenticity questions the way the perspective of the interviewees is presented in the results (Whittmore et al., 2001). The results incorporated only explicitly mentioned opinions, although findings from interviews could have been applied to several employees. Also, interviewees weren't guided by questions derived from other interviews, which allowed them to speak out the experience they found the most important.

Criticality assesses the amount of criticism towards results and related theory (Whittmore et al., 2001). In the thesis, results were first presented as objectively as possible and then discussed with a more critical touch. Also, theory was not taken for granted, but, for instance, a new lifecycle model was derived based on empirical findings.

Integrity describes the repetitive checking of validity throughout the study and the humility of results presentation (Whittmore et al., 2001). The results were presented humbly and no claims were made without backing them with evidence from theory or empiric data. The validity of the interviews was assessed in the methodology.

Explicitness relates to the methodology choices and researcher biases (Whittmore et al., 2001). Although past research had been mostly the quantitative, the chosen methodology was qualitative because the context of the study was new to the theoretical framework used. There are several biases that might have effects on the validity of the results. Firstly, the case

companies were chosen due to the researcher having acquaintances in those companies. So called convenience sampling (Mäkelä & Turcan, 2007) was also used with the interviewees as they were also mostly acquaintances of the researcher. Moreover, the researcher was employed part-time in one of the case companies, which made part of the interviewees colleagues of the researcher. These biases have surely had some negative effects on the openness or truthfulness of the interviewees. However, it should be noted that the more familiar the researcher was with the interviewees the more talkative they were. Less familiar interviewees told distinctively less about their experiences. Also, being employed in a startup, the researcher had extensive knowledge of the context, which was especially helpful during the interviews because small nuances didn't need any explanation. Furthermore, the researcher had previous knowledge of all the case companies, which allowed focusing on essential and additional questions during interviews.

Vividness assesses the depth of the presentations and narratives of results (Whittemore et al., 2001). In the thesis, results were presented with examples and direct quotes from the interviewees. To be as clear as possible the same statements were described in different ways.

Creativity deals with the way of visualizing and analyzing data (Whittemore et al., 2001). The present study has used figures and tables to present findings and theoretical frameworks. In-text tables contained only most common and important results, whilst full collections of findings can be found in the Appendix 2.

Thoroughness judges the way the research questions are answered by the findings and discussion of the thesis (Whittemore et al., 2001). In the present study, the results are first presented as in-depth as possible after which the theoretical framework is applied to the findings along with discussion and critique.

Congruence considers the harmony of the research process and the results (Whittemore et al., 2001). The study began with gaining insights into past research and the selection of a distinct theoretical framework. The literature review for the thesis was supposed to be written before the interview process. This, however, didn't happen. Instead the literature review was finished after the interviewing, after which the analysis of results began. This order of research might have had a negative effect on the results, as all takeaways from theory weren't acknowledged during the interviews and the literature review created a gap between interviews and analysis.

Sensitivity evaluates the nature of the research process and findings in respect to the interviewees, the industry and social community (Whittemore et al., 2001). The topic of the study was chosen after discussions with a startup founder and the supervising professor. It was

seen as interesting because there was a gap in past research in this particular context. Also, the founders and employees attending the study all found the subject to be of big interest in the software industry and also the startup community in Finland. During the study interviewees were briefed before, during and after the interviews leaving no crucial questions related to the process unanswered. Also the anonymity of the interviewees was kept throughout the thesis.

6. Conclusion and future research

The objective of this thesis was to find out how employees of Finnish software startups perceived the satisfaction of three psychological needs and how this perception changes along the startup's lifecycle. The findings of the study allowed a comparison between founder and employee views, between negative and positive experiences, between experiences concerning different needs and between experiences in different parts of the startup lifecycle. In general, the psychological needs were perceived to be satisfied quite well and the overall motivation was close to the border between extrinsic and intrinsic. The initial growth phase was found to be the first stage of changes in perceived need satisfaction. Also, rewards and feedback were considered in-line with the statements made by SDT.

The research applied a qualitative methodology which allows theory building. The preferred research method was the case study, which included 3 case companies. The method for gathering empirical data was the theme interview, which allows the most room for changes in direction during the interview.

The main theoretical framework applied in this thesis was the self-determination theory (SDT) developed by Deci and Ryan (1985, as cited in Deci et al., 1999). The perceived satisfaction of the three psychological needs, autonomy, competence and relatedness, is in the center of research using this theory. Most past research uses a quantitative approach and past studies in the work organization context has been done in large corporations. Thus, this thesis, which focused on small and young software startups, adds to the literature with findings unique to this context.

Regarding future research, three proposals can be made based on this study. (1) SDT with a quantitative approach should be used to test the findings of this study in a larger sample of companies. (2) Rewards and feedback should be taken into focus and their effects on motivation and work climate in the startup context should be studied more carefully. (3) The well-being aspect of SDT should be applied to the startup context and its state, changes along the company lifecycle and effects on performance should be studied in more detail.

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Appendix 1: The theme interview structure

Founder interview

Introduction

This thesis is a study on non-founding employee motivation in Finnish software startups. Both founders / managers and employees will be interviewed to gather empirical evidence. Motivation will be studied according to the self-determination theory built by Deci and Ryan (1985). The theory states that intrinsic and extrinsic motivation is achieved by fulfilling three psychological needs: autonomy, competence and relatedness. Through these interviews this study will try to determine to what extent employees and their managers see these needs being fulfilled at their workplace.

The interview will be conducted as a theme interview which includes the possibility of focusing on the topics that are seen most interesting during the discussion. The interview is divided into three parts (listed below) which all touch a concrete aspect of work life. The interviews will be recorded to allow the interviewer to focus on the discussion. All evidence will be reported completely anonymously. The reader will not be able to connect the evidence to a certain person or company. Also, all answers will be treated as strictly confidential.

Manager and company background

- What is your background (education, work, etc.)?
- What is the company background / story in short?
- What is your background in the company?

Work motivation theme 1: Job tasks and responsibility

This theme discusses the actual work tasks and responsibilities of employees. In addition to a general overview of what employees are working on, we'll dig deeper into how they feel about their tasks, responsibilities and goals.

- What tasks and responsibilities do your subordinates have? (General)
- How interesting do you think your subordinates find their tasks to be? (Autonomy)
- How do you think they feel about the level of their responsibilities? (Autonomy)
- How do you think they feel about taking on difficult, new challenges? (Autonomy + Competence)
- How do you think they feel about working to achieve their goals (personal + company / team)? (Competence)

Work motivation theme 2: Work environment and climate

Here we'll be discussing the overall work environment and how employees feel connected to it. Focus will be kept on interpersonal relationships both on and off the job.

- Describe your work environment. (General)
- How do you cooperate with other employees? (General)
- How do you feel about working with others at work?
- How about spending non-work time?
- How do you feel about the level of relationships at work?
- How do you think your subordinates feel about being a part of the company?

Work motivation theme 3: Rewards and feedback

This theme includes a discussion on all types of rewards and feedback received by employees. Are rewards task or performance related, tangible or intangible? Is feedback positive or negative / constructive? When do employees receive rewards and feedback?

- What kind of rewards and feedback do your subordinates receive? (General)
- How do you think they feel about the different rewards they receive?
- How do you think they feel about the feedback they receive?

Employee interview

Introduction

This thesis is a study on non-founding employee motivation in Finnish software startups. Both founders / managers and employees will be interviewed to gather empirical evidence. Motivation will be studied according to the self-determination theory built by Deci and Ryan (1985). The theory states that intrinsic and extrinsic motivation is achieved by fulfilling three psychological needs: autonomy, competence and relatedness. This interview will try to determine to what extent employees and their managers see these needs being fulfilled at their workplace.

The interview will be conducted as a theme interview which includes the possibility of focusing on the subjects that are seen most interesting during the discussion. The interview is divided into three parts (listed below) which all touch a concrete aspect of work life. The interviews will be recorded to allow the interviewer to focus on the discussion. All evidence will be reported completely anonymously. The reader will not be able to connect the evidence to a certain person or company.

Employee background

- What is your background (education, work, etc.)?
- What is your background in the company? (General)
- Why did you decide to join the company? (General)

Work motivation theme 1: Job tasks and responsibility

This theme discusses your actual work tasks and responsibilities. In addition to a general overview of what you are working on, we'll dig deeper into how you feel about your tasks, responsibilities and goals.

- What are your tasks and responsibilities? (General)
- How interesting do you find your tasks to be? (Autonomy)
- How do you feel about the level of your responsibilities? (Autonomy)
- How do you feel about taking on difficult, new challenges? (Autonomy + Competence)

- How do you feel about working to achieve your goals (personal + company)?
(Competence)

Work motivation theme 2: Work environment and climate

Here we'll be discussing the overall work environment and how you feel connected to it. Focus will be kept on interpersonal relationships both on and off the job.

- Describe your work environment.
- How do you cooperate with other employees and your manager? (General)
- How do you feel about working with others at work?
- How about spending non-work time?
- How do you feel about the level of relationships at work?
- How do you feel about being a part of the company?

Work motivation theme 3: Rewards and feedback

This theme includes a discussion on all types of rewards and feedback received for the work you do. Are rewards task or performance related, tangible or intangible? Is feedback positive or negative / constructive? When do you receive rewards and feedback?

- What kind of rewards and feedback do you receive? (General)
- How do you feel about the different rewards you receive?
- How do you feel about the feedback you receive?

Appendix 2: Complete results

Need satisfaction

Table 13: Positive perceived satisfaction of autonomy

Founder	Count	Employee	Count
Large responsibility for employees	5	Employees find tasks interesting	6
Employees find tasks interesting	5	Employees can affect their tasks	4
Goals are set together with employees	3	Employees can affect their responsibilities	3
Employees have a lot of freedom	3	Employees can affect anything	3
Responsibilities are divided naturally	2	Employees handle challenges as they see best	2
No strict responsibilities to keep work interesting	2	Employees can affect the goals of the company	2
Low hierarchy; CEO is just a colleague with different tasks	2	Company culture promotes autonomous work	2
Everyone has the possibility to develop processes and use of tools	1	Managers feel like colleagues	2
Managers take care that employees don't work too much	1		
Scrum process works very well	1		

Table 14: Negative perceived satisfaction of autonomy

Founder	Count	Employee	Count
Employees can't affect the assigning of certain tasks	2	Employees can't affect their tasks	3
		Employees roles aren't clearly defined	2
		Employees aren't supported enough in their work	1
		Employees can't affect the goals of the company	1

Table 15: Positive perceived satisfaction of competence

Founder	Count	Employee	Count
Employees have grown with the company	3	Employees enjoy learning on the job	9

Developers are full stack, ie. proficient in several different technologies	3	Clear goals and KPIs help employees to focus their work	9
Employees get to work on interesting problems with interesting technologies	3	Employees are confident with taking on new challenges	8
Employees enjoy new challenges	3	Employees' individual contribution is visible in company's success	4
Employees learn a lot from their job	2	Managers support learning new skills	3
Employees are specialized in certain verticals	2	Company supports employees' personal goals	3
Employees believe in their skills	2	Employees have too big responsibilities	3
Goals are clear and thus employees know what needs to be done	2	Employees have enough responsibilities	3
Employees' personal goals are clear, because you know everyone	2	Employees have sufficient tools and knowledge to work efficiently	3
Employees are pragmatic and realize the uncertainty	2	Employees can solve problems together with the best companies in the world	2
Employees enjoy working	2	Company is at the top of their industry	2
Employees are constructive	2	Employees learn from mistakes	2
Employees are very interested in the industry	2	Employees take risks in completing their tasks	1
Mentoring for employees who want to grow	1		
A lot of work is done to clarify company and team goals	1		
Employees are high performing individuals	1		
There is a goal oriented culture in the company	1		
Personal goals and development are supported	1		

Table 16: Negative perceived satisfaction of competence

Founder	Count	Employee	Count
Some tasks are not interesting	2	Teams are lacking resources	2
Tasks develop very fast; it can be hard to keep up	1	Development team is lacking measurable goals	2
A lot of new things need to be learned constantly	1	Routine tasks are not interesting	2
Some functions aren't supported enough	1	Lack of experience creates stress	1

Some employees' tasks don't have a clear impact on taking the company further	1	Employees don't take risks in completing their tasks	1
Employees' personal goals aren't clear because you don't know everyone	1	Employees' individual contribution isn't visible in company's success	1
Goal setting is still a developing process	1	Company isn't active in developing employees' tasks	1
Some employees aren't so good at prioritizing new tasks	1	Employees are missing tools and knowledge to work efficiently	1
Work gets interrupted fairly often	1		
Hard for teams to focus at the crowded office	1		
Employees are too homogenous	1		
Trust in skills is cyclical and aligned with the company's success	1		
Company goals are set too high	1		

Table 17: Positive perceived satisfaction of relatedness

Founder	Count	Employee	Count
Colleagues are good friends	6	Employees spend enough non-work time with colleagues	11
A strong culture and teamwork bring the employees closer to each other	6	Employees feel good about belonging to the company	11
Employees feel good about being a part of the company	5	Employees help each other	8
Employees enjoy working together	4	Employees know each other very well	8
Employees enjoy spending non-work time together	4	Employees have close friends as colleagues	7
Everyone works in a team	3	Employees share the same spirit at work	7
Employees can get help from anyone	3	Employees enjoy working with each other	5
Everyone puts the team's benefit in front of their own	2	Employees work in teams, pairs	4
Managers care for their employees	2	Colleagues respond at work	3
Processes and tools to help employees know each other better	1	Work climate is very competitive	2
Employees give feedback across teams	1	Work environment is very hectic	1
Employees respect each others' work	1	Colleagues come as they are	1
		Employees care about each other	1

Table 18: Negative perceived satisfaction of relatedness

Founder	Count	Employee	Count
Employees don't know each other that good	5	Employees don't know each other that good	10
There could be more non-work events with colleagues	4	Colleagues don't respond at work	3
The work atmosphere is cyclically very hectic	2	Work climate is very competitive	3
Employees don't feel like they belong to the company	2	Employees don't spend enough non-work time together	3
Colleagues can't stand each other	2	Work environment is very hectic	1
Teams have siloed	2	Work environment is chaotic	1
Team integration wasn't handled properly	1	Employees aren't friends at work	1
Employees don't share the same sense of urgency with the executive team	1	Colleagues don't come as they are	1
Managers don't co-operate enough with employees	1	Employees don't feel good about belonging to the company	1
Teams have different ideas about working together	1	Employees don't share the same spirit at work	1

Rewards and feedback

Table 19: Positively perceived rewards

Founder	Count	Employee	Count
Team and individual successes are shared publicly	5	Employees receive a performance-contingent reward in the form of stock options.	7
Employees receive a performance contingent reward in the form of stock options	4	Employees receive raises in their salary	5
Salaries are checked and revised regularly	3	Personal reward for succeeding in tasks and learning	4
Teams receive task-contigent rewards in the form of bonuses	2	Team and individual successes are shared publicly.	3
Learning through work	2	Salary is aligned across the company	2
New responsibilities can feel like rewards	1	New responsibilities feel like a reward	2
		Teams receive task-contigent rewards in the form of bonuses.	1
		Employees don't receive individual bonuses	1

Table 20: Negatively perceived rewards

Founder	Count	Employee	Count
No official and regular task or performance related rewards	2	Employees are not getting market salary	1

Table 21: Positively perceived feedback

Founder	Count	Employee	Count
All employees have a regular 1-on-1 meeting with manager	5	Employees have a regular 1-on-1 meeting with manager	6
Employees receive personal feedback that is aligned with their efforts and results	5	Employees can always ask for more feedback	4
Teams have retrospective feedback meetings regularly	3	Work is peer reviewed	4
Tasks reviewed by peers	3	Teams share feedback regularly	4
Managers give an example of how to give feedback	2	Feedback is collected on a company level	3
Regular company-wide feedback survey	2	Customers give a lot of feedback to employees	2
Employees react fast when something is not right	2	Teams have regular retrospective meetings	2
Managers receive feedback from employees	2	Company culture is very transparent	2
Anonymous peer review regularly	1		

Table 22: Negatively perceived feedback

Founder	Count	Employee	Count
Not much feedback is given to managers	3	Managers don't give enough feedback	8
Employees don't receive personal feedback	2	Employees don't give enough feedback to colleagues	5
Feedback in teams doesn't flow like it should	2	Employees don't have regular 1-on-1 with managers	3
Employees don't have regular 1-on-1 meetings with manager	2	No-one notices less visible successes	2
Managers aren't experienced in giving feedback	1	Employees don't give enough feedback to managers	2
Managers don't give enough positive feedback	1	Company culture is not transparent	1