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Well-being among entrepreneurs

- A self-determination theory perspective

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Abstract

The purpose of this thesis is to investigate relations between characteristics of the job as an entrepreneur and well-being. This is based on research showing that entrepreneurs are among the happiest people in the world with high degrees of well-being. The thesis uses a framework of self-determination theory and the job demands-resources model to examine the relations between job characteristics common to entrepreneurs, personal aspirations, and well-being, through the process model of self-determination theory.

The study itself is conducted based on a survey among entrepreneurs, yielding 160 responses. The respondents are primarily Scandinavian, with a few Americans and Canadians in between. As such, all respondents are from innovation-driven economies, which is where entrepreneurs were reported to show the highest degrees of well-being. Based on the data from the survey, various analyses are performed in order to test various hypotheses created on the basis of the theoretical framework.

The results of the analysis are largely supportive of the hypotheses, lending valuable support to the relations proposed by self-determination theory. Job resources, job challenges, as well as both intrinsic and extrinsic aspirations, are found to be positively related to basic need satisfaction. Conversely, job hindrances are found to be negatively related to the satisfaction of the basic needs. Basic need satisfaction shows a strong, positive relation with autonomous motivation, which in turn shows positive relations with subjective well-being and vitality.

The thesis offers various theoretical and practical implications. A previously proposed modification to the job demands-resources model, adding the concept of job challenges, is supported. On the other hand, extrinsic aspirations shows an unexpected positive relation with basic need satisfaction, which should be examined further. The findings of the study imply that entrepreneurs, or even society in general, should attempt to lessen the worries of entrepreneurs, and provide them social support, in order to keep well-being and motivation high, and, hence, make entrepreneurial activities more attractive.

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1.0. Introduction

Entrepreneurship has received a lot of academic attention over the years, with a lot of research and literature devoted to the topic. It has long been acknowledged that entrepreneurship plays a key role in the economy through innovation and job creation. The innovations allow for a higher output per unit of capital or labor, and is as such a very important driving force for economic growth (Schumpeter, 1934). At the same time, the job creation and increased tax revenue is beneficial to the overall economy. With increased knowledge about entrepreneurship it is possible for policymakers and society in general to actively facilitate entrepreneurship and new ventures, in an attempt to achieve these economic benefits.

Academic research on entrepreneurship has moved in several directions, with a very notable distinction being between research on entrepreneurial opportunities and that on enterprising individuals (Shane & Venkataraman, 2000). The interest in the first theme is with the characteristics of entrepreneurial opportunities (Shane, 2001), as well as how they are discovered and taken advantage of (Baron, 2006; Shane, 2000). In other words the focus is on when and where entrepreneurial opportunities exist. The second theme deals with entrepreneurs on a more personal level. Research here has focused on common personality traits among entrepreneurs (Zhao & Seibert, 2006) and on founding team dynamics and their effect later in company life (Beckman & Burton, 2008; Ruef, Aldrich, & Carter, 2003), that is, an approach to determine who the entrepreneurs are and how they should and do team up.

One research area that seems to have been neglected somewhat in comparison with the others is the focus on what life as an entrepreneur is like. This is seen in the research questions that Shane and Venkataraman (2000) listed to create a framework for the study of entrepreneurship. Neither of these addressed the topic of what being an entrepreneur is like and what motivates them. Knowledge about this is interesting, both in terms of the understanding of entrepreneurship, but also in the effort to make entrepreneurial activities more attractive. This research area has, however, received a little more focus lately, for example in the Global Entrepreneurship Monitor.

The Global Entrepreneurship Monitor is the largest ongoing study of entrepreneurial dynamics in the world and arguably the most important source of entrepreneurial data. Their annual reports, like the academic field in general, take on subjects ranging from the role of entrepreneurship in economic growth, over factors leading to entrepreneurial activity, to similarities and differences between entrepreneurs across the world. The 2013 Global Report included a special topic investigating linkages between entrepreneurship and well-being, resulting in the conclusion that entrepreneurs are among the happiest people in the world. The study showed entrepreneurs in innovation-driven economies, that is, the most developed countries in the world, having very high scores on well-being and job satisfaction, but the report did not offer any explanation for this phenomenon (Amorós & Bosma, 2014). The fact that entrepreneurs had very high scores on both well-being and job satisfaction, implies that the source could be the job as an entrepreneur itself, though this was not investigated. As such, looking at characteristics of the job as an entrepreneur in relation to well-being seems relevant.

The 2013 Global Report shows why research in that area, which was previously described as neglected, is highly relevant. Understanding the factors which lead to entrepreneurs apparently being some of the happiest people in the world is interesting and could have numerous significant implications. Looking at this through well-being, which has gained traction as a relevant statistic over the recent years, makes sense. There is rising consensus that previous measures were not giving valid or complete information. An example of a previous measure is gross domestic product (GDP), which was used as a proxy for well-being, under the assumption that money brings happiness. There is still agreement that money plays a role in well-being and that it is correlated with other factors, but it has been acknowledged that GDP cannot be used alone as a valid measure of well-being (OECD, 2011). Another reason is that many people, particularly in the Western nations, have achieved a degree of health and material abundance, allowing them to focus on other things than just survival. In poorer countries, a rise in GDP may better predict happiness, as it may have a larger effect on health and material gains, than in the richer countries. As the world has generally reached a higher standard of living in terms of health and material possessions, other factors are now defining the good life (Diener, Lucas, & Oishi, 2002).

The intent of this thesis is to investigate the high levels of well-being associated with being an entrepreneur, in an effort to uncover the reasons for this phenomenon. This would add to the research area of what life as an entrepreneur is like. By looking at characteristics of the job as an entrepreneur through the job demands-resources model, and coupling that with self-determination theory, a framework for human motivation where well-being is central, it should be expected to find correlations between specific job characteristics and well-being. This results in the following problem statement.

- How can characteristics linked to the job as an entrepreneur explain well-being through a self-determination theory perspective?

This problem statement will be studied through the three following research questions.

- What role will job characteristics play in determining well-being among entrepreneurs?
- What role will personal aspirations play in determining well-being among entrepreneurs?
- How can the concepts of basic need satisfaction and work motivation be used to explain these relations?

Answering these research questions will shed light on the processes relating to the high degree of well-being found in entrepreneurs. It would offer potential explanations to be investigated in future research, and also potentially find job characteristics that can be promoted in society. This knowledge could be used both in order to support entrepreneurial activities, but also to integrate into regular employment, in order to promote well-being.

Chapter 2 of this thesis will present the theoretical framework of the study, the hypotheses which will be tested, and the research model. Then chapter 3 will look at the methodological considerations for the study. Chapter 4 will consist of the actual analysis of the data. The results of the analysis will be discussed in chapter 5, and the implications will be presented. Finally, the conclusions of the thesis will be presented in chapter 6.

2.0. Theory

This chapter will describe the theories that will be used as a foundation for the thesis and form the analytical framework through which the research question will be answered. A presentation of two types of well-being will be given in chapter 2.1. This will be followed by a presentation of self-determination theory in chapter 2.2, a theory which will be used as the theoretical framework of the thesis. Chapter 2.3 will explain the job demands-resources model. Following the presentation of the theories, chapter 2.4 will put up the hypotheses that will be used to answer the research questions, and on that basis create the research model.

2.1. Well-being

Well-being can be defined in various ways. In general, there is a division between hedonic well-being and eudaimonic well-being. Hedonic well-being refers to a view of well-being as a measure of happiness or pleasure. It is based on entirely subjective measures like positive mood and life satisfaction, which is why it is also referred to as subjective well-being (Diener, 2000). The logic behind this view is that individuals subjectively value things differently and obtain various degrees of happiness from different factors, so basing well-being on objective measures would not be valid. The eudaimonic view of well-being on the other hand, finds it important to distinguish between subjective needs which produce momentary pleasure, and the needs which are part of human nature, necessary for growth and thriving. As such, the main difference from eudaimonic to hedonic well-being is the notion that there are indeed valid, objective measures. In other words, eudaimonic well-being is the concept of being fully functional as a person, not just happy in the moment.

Most variants of the eudaimonic view does include subjectivity, often in terms of life satisfaction, as one measure, but complements it with objective measures, like psychological health and vitality. The 2013 Global Report from the Global Entrepreneurship Monitor, the data of which this thesis is based on, used a hybrid, measuring subjective well-being through life satisfaction and job satisfaction, as well as the more eudaimonic measures of work-life balance and work conditions

(Amorós & Bosma, 2014). This approach is used by the OECD in their global measures of well-being, indicating that it is generally accepted as being a valid measure (OECD, 2011). Finally, self-determination theory, which will be central to the thesis, uses this hybrid of a eudaimonic view on well-being, coupled with subjective measures (Ryan & Deci, 2001), as will be explained in the next subchapter.

2.2. Self-determination theory

Self-determination theory is a macro-theory on human motivation and behavior which consists of several mini-theories that all explain different processes, while being so interconnected that they weave seamlessly into the overarching structure (Deci & Ryan, 2002). The main purpose of the theory is to explain reasons for and consequences of various types of motivation (Gagné & Deci, 2005). As will become clear, well-being, which is the central theme in this thesis, is one of these consequences and has a very central position in the theory.

The basis for the entire theory is the idea that humans are active, growth-oriented organisms with a natural tendency toward integration of their psychic elements into a coherent sense of self and the integration of themselves into larger social structures, and that this will bring a sense of well-being. It is, in other words, believed that humans are by nature inclined toward engaging in interesting activities, challenging and improving capacities and attempt to be part of social groups. At the same time, it is understood that these tendencies cannot be taken for granted, but are dependent upon the social context, in which some factors will support the tendencies while others will work against them. These notions come together in what is called the organismic-dialectic perspective, that is, the theory is concerned with the interaction between the active, growth-oriented organism and the context in which it resides. This context can either nurture or hinder the active nature of the organism. In other words, factors in the social environment can either support or disrupt psychological growth, the movement towards a coherent and unified personality and the sense of well-being (Deci & Ryan, 2002). It is these factors and processes that will form the theoretical backbone of this thesis.

As previously mentioned self-determination theory consists of several mini-theories, which explain different phenomena. The mini-theories all share the organismic-dialectic perspective, which is what connects them under the umbrella of the macro-theory. There are currently five such mini-theories. *Cognitive evaluation theory* was the first and builds on the notion that social contexts can influence the motivation of people (Ryan & Deci, 2000b). This can happen through two mechanisms, changes in the so-called locus of causality and changes in the perceived competence of the individual. The locus of causality is the source of the motivation, which can be external, for example the pursuit of a reward or prize, internal, for example through a feeling of interest or joy associated with the task at hand, or anywhere between the two. If an event in the social context leads to the locus of causality being perceived as more external than before, for example by the boss imposing a deadline, motivation will suffer. Conversely, if the social context leads to a perception of the locus of causality being more internal, the individual will experience a higher degree of motivation. The same mechanism is at play with regards to perceived competence. If the individual experiences a higher degree of perceived competence, a higher degree of motivation will be the result.

The social context can impact the perceived competence in several ways, for example through feedback, with positive feedback leading to an increase and negative feedback leading to a decrease. The mini-theory describes social contexts as having aspects which are amotivating, controlling or autonomy-supportive, and that the relative size and strength of these aspects determine the overall contextual effects on motivation. Autonomy-supportive aspects facilitate an internal perceived locus of causality and increase perceived competence, thus leading to higher degrees of motivation, while controlling aspects facilitate an external perceived locus of causality, leading motivation to suffer. Amotivating aspects decrease perceived competence and lead to disinterest in the task, a lack of motivation (Deci & Ryan, 2002). A social context which is often investigated within self-determination theory is the workplace. There has been research linking self-determination theory to various job characteristics, in order to show the effect of individual characteristics of the context on motivation (Gagné, Senécal, & Koestner, 1997).

The next mini-theory within self-determination theory, *organismic integration theory*, addresses the concept of motivation. Building upon the classic distinction between intrinsic and extrinsic motivation, it expands upon the results on motivation from contextual factors. When an autonomy-supportive context leads to a higher degree of motivation, it is not to be understood in terms of a higher amount of motivation, but rather a higher degree of intrinsic motivation. On the opposite, controlling contexts lead not to lower amounts of motivation, but to a higher degree of extrinsic motivation. As such, the theory sometimes refers to intrinsic motivation as autonomous motivation, while extrinsic motivation is called controlled motivation in some instances. In other words, it introduces the notion that motivation is not a dichotomy but rather a continuum.

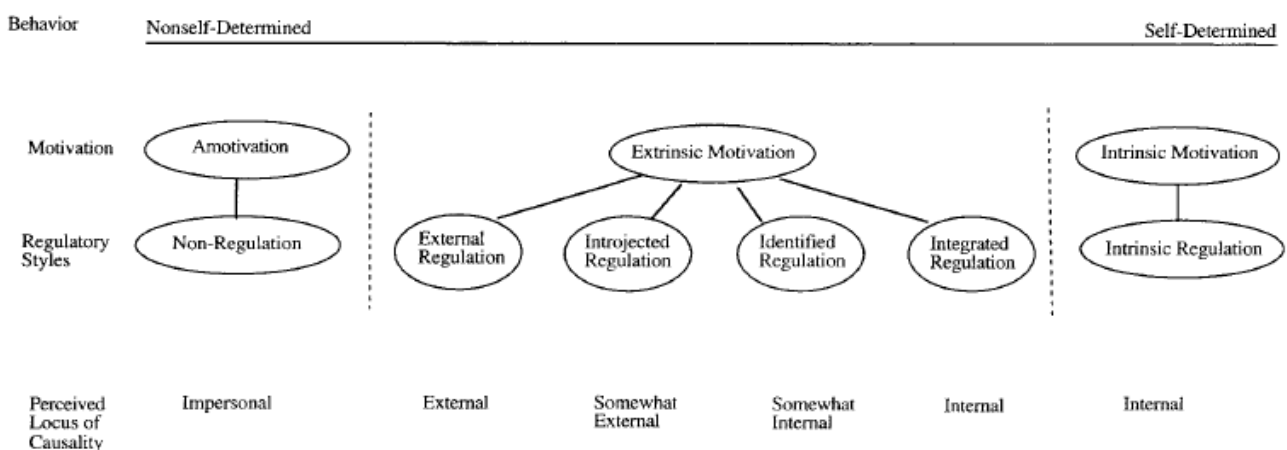
Expanding upon this, the mini-theory shows that extrinsic motivation can vary in its relative autonomy. The main assumption, as previously mentioned, is the organismic view of humans having an inherent tendency to develop a coherent sense of self and integrate themselves into larger social structures. Following this, people performing an externally regulated activity will, over time, tend to internalize the regulation of the activity through integrating it with their sense of self. This is called the internalization process, and does not necessarily mean that the activity will suddenly become interesting or joyful in itself and thus the motivation intrinsic; in fact this is rarely, if ever, the case. But gradually the locus of causality will become more internal, meaning that there are different levels of extrinsic motivation. A highly internalized activity would in other words result in an autonomous type extrinsic motivation, while less internalized activities would result in a more controlled type of extrinsic motivation (Deci & Ryan, 2002).

In order to support this idea, amotivation and intrinsic motivation, neither of which is divided into multiple types, form the extremes of the continuum. Extrinsic motivation is divided into four different types to cover the ground in between. The traditional form of extrinsic motivation, where a person will do an activity in order to obtain a reward is described as *externally regulated*. In such a case, one has not integrated the activity or behavior and is acting with the sole intention of obtaining the desired consequence or avoiding an undesirable one. As such, this is the most controlled type of extrinsic motivation. Another type of extrinsic motivation, which is slightly less controlled, is called *introjected regulation*. Here, the activity or behavior has been taken in by a

person, but not accepted as his or her own. While it has not been integrated into the sense of self, the ego is involved as the motivation comes from the urge to attain positive feelings like pride or avoid negative ones like guilt. As such, it relates to the notion that performing the activity lead to an improved opinion by others or that not performing it will lead to a worse opinion.

Moving on to the predominantly autonomous types of extrinsic motivation, the first kind is *identified regulation*, which is moderately autonomous. In this case, the behavior is more in line with personal goals and is as such consciously valued as being important to the person. Performing the activity is seen as having a positive impact on the personal goals. This means that the motivation to a higher degree comes from within, that it is autonomous. The final type of motivation is called *integrated regulation* and is the most autonomous type of extrinsic motivation. Under this type of motivation, the behavior is in congruence with the values and interests of the person. This type of motivation is still considered extrinsic as the activity is done to attain personally important outcomes, not for its inherent enjoyment. In other words, the activity does not have to be fun or interesting, as is the case for intrinsic motivation, but simply be personally important and in line with the sense of self (Gagné & Deci, 2005). The continuum, with its various types of motivation and regulatory styles is depicted in figure 1 below.

Figure 1: The self-determination continuum (Ryan & Deci, 2000b).



It is important to note that while it is possible to move between these different types of motivation through the internalization process, they do not represent stages that have to be

followed. In order to internalize an activity or behavior, the person requires certain nutriments necessary for the process. In other words, in line with cognitive evaluation theory, the process of internalization depends on factors in the social context (Ryan & Deci, 2000b).

While the first two mini-theories have concerned themselves with the interaction between a person and the social context, the third mini-theory, *causality orientations theory*, goes on to describe the relatively stable individual differences which effects motivation. In other words, self-determination theory assumes that the motivation, and hence behavior, of a person is a function of the social context, as well as these individual differences. The individual differences consist of variations in the so-called causality orientations, that is, the tendencies to experience the social contexts in different ways (Gagné & Deci, 2005). In line with the previous mini-theories, there are three such causality orientations, the autonomy orientation, the controlled orientation and the impersonal orientation. The *autonomy orientation* describes the tendency to experience social contexts as autonomy-supportive and pushes towards the more autonomous types of motivation. The *controlled orientation* describes the tendency to see the social context as being controlling and pushes towards the more controlled types of motivation. The *impersonal orientation* describes the tendency to be amotivated. Everybody inherently has all three orientations, but they vary in relative strength in different people (Deci & Ryan, 2002).

The fourth mini-theory, *basic psychological needs theory*, was developed to explain the concept of basic psychological needs. These are assumed to be universal, meaning that everybody has them. The nutriments needed for the internalization process is in fact the satisfaction of these needs, and it is through the satisfaction of these needs that a context becomes autonomy-supportive, as opposed to controlling. As such, according to self-determination theory, the basic psychological needs are very critical for human development (Gagné & Deci, 2005).

The theory states that there are three such needs, the needs for autonomy, competence and relatedness. The need for relatedness refers to a need for feeling connected to others and having a sense of belonging to a community or social group. Competence refers to the feeling of effectiveness and having opportunities to exercise capabilities. It leads people to seek challenges

that fit their current skills in order to maintain these or even improve upon them. Competence, then, should not be seen as an absolute number or level of skills, but rather a feeling of being effective and using skills in general. Finally, autonomy should be understood as the feeling of being the source of one's own actions and acting in line with personal interests and integrated values, not as complete freedom from everyone else, or total independence. Acting autonomously leads to a perception of the behavior being an expression of the self. Having these needs satisfied will, through the processes described in the previous mini-theories, lead to a higher degree of autonomous motivation (Deci & Ryan, 2002). The very definition of a need in self-determination theory, is that it promotes well-being, which helps underline the importance of these concepts, not only within the theory itself, but also within this thesis. The exact outcomes of autonomous motivation, which results from a high degree of need satisfaction, will be presented after the fifth and final mini-theory.

This last mini-theory, the *goal content theory*, is a recent addition to self-determination theory. It links the theory to the concept of aspirations or life goals. Aspirations are, in line with the rest of the theory, divided into intrinsic and extrinsic life goals, with the implication that both the pursuit and attainment of intrinsic goals will satisfy the basic psychological needs, while neither the pursuit nor attainment of extrinsic goals will provide direct need satisfaction, and may even thwart it (Vansteenkiste, Lens, & Deci, 2006). The difference between the goal types is that intrinsic goals are related to the inherent human growth tendency which self-determination theory builds upon, while extrinsic goals are means to a separable, external outcome. The pursuit and attainment of intrinsic aspirations are further believed to be a virtuous circle, as basic need satisfaction leads to the individual placing a higher emphasis on intrinsic aspirations, which again will satisfy the basic needs (Niemic, Ryan, & Deci, 2009).

In sum, factors in the social context, as well as individual orientations and aspirations, can either support or thwart the satisfaction of the basic psychological needs for autonomy, competence and relatedness. Satisfaction of these needs will lead to more autonomous motivation through the internalization process. Research has shown that the development of autonomous motivation, as opposed to controlled motivation, will result in a plethora of positive outcomes, such as high work

performance (Baard, Deci, & Ryan, 2004), persistence and organizational commitment (Gagné & Deci, 2005), as well as harmonious passion and creativity (Liu, Chen, & Yao, 2011) and various measures of well-being (Baard et al., 2004; Deci & Ryan, 2000; Ryan & Deci, 2000a).

2.3. Job demands-resources model

One theory describing the contextual factors in a working environment is the job demands-resources model. By grouping characteristics of the job in two general categories, job demands and job resources, the model basically states that job characteristics can initiate two different processes (Bakker, Demerouti, & Verbeke, 2004). The *energetic process* relates to characteristics which are overtaxing and lead to fatigue and exhaustion. Job demands are associated with this energetic process and, hence, physical or psychological costs, like exhaustion or burnout. Job resources, on the other hand, are related to the second process. The *motivational process* relates to characteristics which prompt employees to perform better and invest themselves more fully in tasks and activities, as well as stimulating personal growth (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). It is further argued that the presence of job resources will negate the effects of job demands, indicating that job resources are a positive factor in both processes. The job demands-resources model links job characteristics to various outcomes, with job resources leading to positive outcomes and job demands to negative ones. There has been research linking self-determination theory with the job demands-resources model (Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008). The implication of this research is that job resources satisfy the basic psychological needs, while job demands thwart them. As such, the job demands-resources model has shown itself able to explain the social context of the workplace, within a self-determination theory perspective.

It is important to note that newer research has had results supporting the division of job demands into job hindrances and job challenges. The reason is that a study has supported the existence job challenges, which initiate the motivational process, like job resources, but also the energetic process, like job demands (Van den Broeck, De Cuyper, De Witte, & Vansteenkiste, 2010). It is indicated that job challenges are related to various positive outcomes. This finding would lead to

the three categories of job resources, job challenges, and job hindrances. The present study will use this trinity, allowing the results to either support or oppose the idea.

2.4. Hypotheses

Applying the theories to the topic at hand will result in explicit hypotheses which can then be turned into a research model. This process will at the same time justify the choice of variables. Per the problem statement, the main intent of this thesis is to investigate the relation between specific characteristics common to the job as an entrepreneur and well-being. Self-determination theory, which was just presented, describes this process through a series of steps, which will heavily influence the research model.

The main assumption of this thesis is that there are some specific characteristics common in the job as an entrepreneur, which will be related to a high degree of well-being. This relation is described in the job demands-resources model, stating that job resources are related to positive outcomes, while job hindrances are related to negative ones. More recent research has used self-determination theory to explain these relations. Specifically, this line of research has indicated that job resources are linked to positive outcomes due to them satisfying the basic psychological needs, while the relation between job hindrances and negative outcomes is explained by the thwarting of the basic psychological needs. In addition, newer research has suggested that job challenges are related to positive outcomes.

In order to investigate these relations in an entrepreneurial context, specific resources, challenges, and hindrances have to be selected. There are obviously many different job characteristics which have been measured in various contexts, so it is important to select and justify the choices of characteristics used in this study. This selection will be based on a combination of relevance for entrepreneur and the existence of approved measurement scales. The first job resource to be included will be task autonomy, which has been widely used as a job resource in a number of studies regarding job design, for example within the job demands-resources model (Van den Broeck et al., 2008). Task autonomy relates to freedom of choice one has in a job, for example the

freedom to select tasks and work goals, as well as to choose working hours. This seems highly relevant for entrepreneurs, as that kind of freedom is often associated with being an entrepreneur (Pofeldt, 2014).

The second job resource in this study will be skill utilization, which is defined as the degree to which the job requires creativity and allows the use and learning of skills. This is also a job resource often used in various settings (Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010). As entrepreneurs are generally required to be jacks-of-all-trades (Lazear, 2005) and are involved in most aspects of their business, it would seem that the use and development of skills is a relevant measure. This is further supported by the fact that the report by the Global Entrepreneurship Monitor lists perceived skills and knowledge as an important factor in deciding entrepreneurial intentions (Amorós & Bosma, 2014).

The final job resource that will be measured is social support. The definition of social support is the degree to which the environment is supportive, in terms of offering advice or talking about problems. It can either be restricted to a particular setting, for example the social support one receives from the workplace, or can be investigated more generally. The relevance of this resource is the fact that the work of an entrepreneur is often portrayed as being somewhat lonely (Kupferer, 2014). Having social support at work, however, should be expected to negate the loneliness. Social support at work, then, will be the third and final dimension of job resources in this study. Like the two previous dimensions, social support has often been used in previous research across contexts (Schaufeli & Bakker, 2004). According to the theories presented in the previous chapter, job resources should initiate the motivational process by satisfying the basic psychological needs. As such, the first hypothesis can be expressed like this:

H1: Job resources are positively related to basic needs satisfaction

As the concept of job challenges is fairly new, there has not been as much research done on these. Several job challenges were previously perceived as being job demands, though, before recent research has suggested the division of these. As such, there are some established variables that

can be used. The first job challenge that will be included in this thesis and hypothesized to have a positive relation to basic needs satisfaction is workload. This refers to the amount of work one has to do, and the time pressure one has to do it under. Having previously been thought of as a job demand which resulted in stress or burnout, recent research has shown that workload may rather be a job challenge, and as such provide an opportunity for basic need satisfaction (Van den Broeck, De Cuyper, et al., 2010). The relevance of the variable in this thesis is a result of the general perception of entrepreneurs having a lot of work to do and being busy (White & White, 2014). It will be interesting to see if the more recent theory, that those with higher workloads will experience higher degrees of basic needs satisfaction, holds true.

The second job challenge included is cognitive demands. This is the degree to which the work requires concentration, precision and memory; all things that are challenging but do not directly thwart the basic need satisfaction. This variable has been selected as entrepreneurs may be facing low degrees of routine tasks and may have a lot of parallel projects and tasks going on. This can potentially be mentally straining and lead to negative consequences, but can also be experienced as a challenge to be overcome and a test of skills and competence. Like several other job characteristics, this was also used by Van den Broeck, De Cuyper, et al. (2010). If the proposed existence of job challenges holds, they should be expected to satisfy the basic psychological needs. Hence, the suggested effect of the job challenges is made into the following hypothesis:

H2: Job challenges are positively related to basic needs satisfaction

The last category of job characteristics in the study will be the job hindrances, those that were traditionally called job demands. These are the characteristics which are theorized to reduce basic needs satisfaction and, in turn, decrease well-being. The first job hindrance will be that of work/home interference, a widely used variable. This is defined as the degree to which the job interferes with the spare time and hinders a person from performing their domestic obligations. Entrepreneurs are often portrayed as always working, no matter if they are home or at the office (Brown, 2013), something which can obviously take time away from domestic obligations or hobbies. According to theory and previous research, this will lead to lower degrees of basic needs

satisfaction (Van den Broeck et al., 2008). The second job hindrance is worry. One can obviously worry about a lot of things, but in this context, worry is defined as the worries that appear as a result of the job. These are also hypothesized to have a negative impact on the satisfaction of the basic psychological needs. Entrepreneurs have a lot of responsibility, often face uncertainty regarding the future of their venture and may not have a steady source of income, all possibly adding to their worries. The job demands-resources model suggests that job hindrances initiate the energetic process and, hence, thwart basic need satisfaction. This leads to the following hypothesis:

H3: Job hindrances are negatively related to basic needs satisfaction

Another factor which has been theoretically linked to basic needs satisfaction is that of aspirations previously described in chapter 2.2. The relevance of the aspirations is that they may shed light on the reasons people have for becoming entrepreneurs and show differences in well-being between those with intrinsic versus extrinsic aspirations. The two intrinsic aspirations used in this study are self-acceptance and community feeling. *Self-acceptance* relates to the feeling of being in charge of one's own life and being true to oneself. *Community feeling* is the aspiration of helping people in need and making the world a better place. The extrinsic aspirations on the other hand, which are hypothesized to lead to lower degrees of basic needs satisfaction, are the aspirations for financial success and for social recognition. These are fairly self-explanatory, with *financial success* relating to having a lot of money and expensive possessions, while the aspiration of *social recognition* is that of being famous and admired. As mentioned, intrinsic aspirations are assumed to be positively related to the basic psychological needs, while extrinsic aspirations are assumed to not provide basic need satisfaction, and may even thwart it (Vansteenkiste et al., 2006). This thesis will test whether they do in fact thwart the basic need satisfaction, leading to the following hypotheses:

H4a: Intrinsic aspirations are positively related to basic needs satisfaction

H4b: Extrinsic aspirations are negatively related to basic needs satisfaction

A very central part of self-determination theory is the relation between basic needs satisfaction and autonomous motivation. With higher degrees of satisfaction of the basic psychological needs, the result will be higher degrees of autonomous forms of motivation. This central assumption of self-determination theory has been tested and confirmed countless times (Deci & Ryan, 2002), so this is a well-supported hypothesis:

H5: Basic needs satisfaction is positively related to autonomous motivation

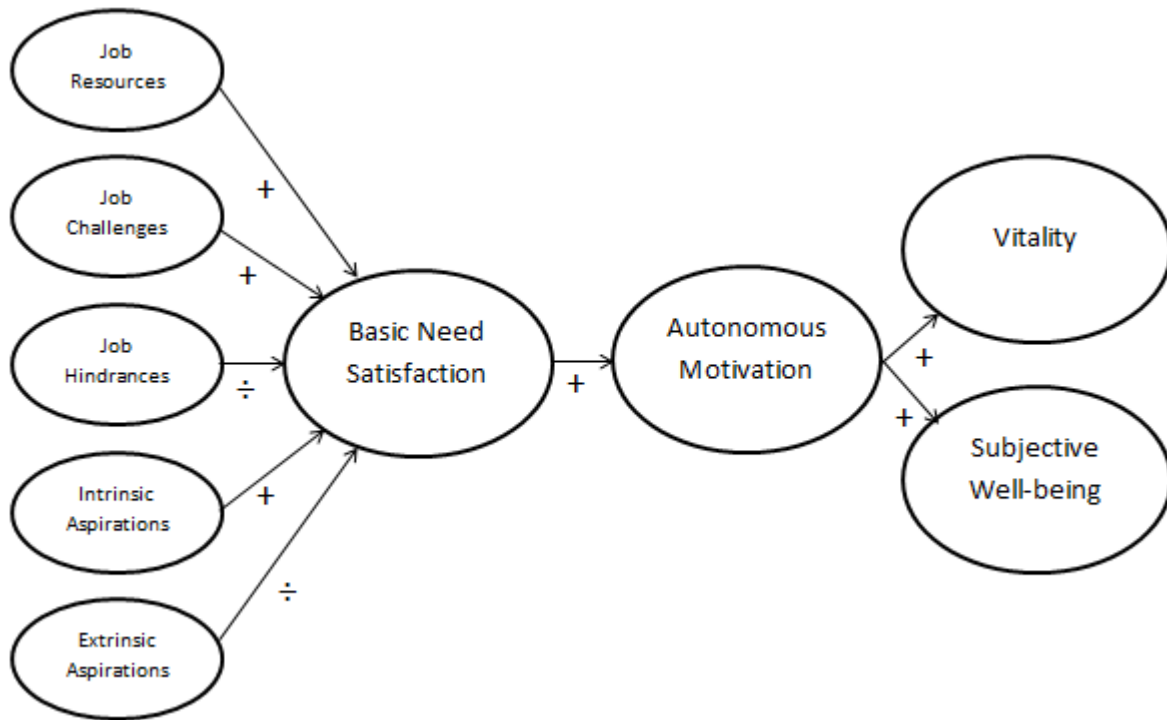
The final link in the research model is that of autonomous motivation predicting the level of well-being, as theorized in self-determination theory. In line with the presentation of the two different types of well-being presented earlier, this study will look at both types of well-being. The eudaimonic part will be measured through vitality which relates to feelings of energy and spirit and is often used in research within the self-determination theory framework (Ryan & Deci, 2000a). On the other hand, hedonic well-being will be measured through subjective well-being. This construct measures general satisfaction with life, as well as the degree to which five positive and negative feelings of affect, respectively, are experienced by the respondent. With autonomous motivation predicting various positive outcomes, the final pair of hypotheses is as such the following:

H6a: Autonomous motivation is positively related to vitality

H6b: Autonomous motivation is positively related to subjective well-being

The hypotheses offer the possibility of an easier, graphical overview of the research model of the study. Figure 2 below depicts all variables in the study and their hypothesized interactions. The graphical overview illustrates that the process model of self-determination theory basically makes one indicator predict another, through a third. As such, it will be sensible to conduct tests for indirect effects in the analysis chapter. This will ensure that the data indeed supports these theoretical mediators. If the analysis shows strong direct links, it would indicate that these links should be skipped.

Figure 2: Theoretical research model



3.0. Methodology

In any study, a very central consideration regards the methodology which will be used to gather the information necessary to answer the hypotheses, and thus the research question of the study. This chapter will be used to decide on the methodology of the study and present the way in which the research question is sought to be answered. Chapter 3.1 will discuss the various ways a study can be designed, and decide on a research design for the present study. Chapter 3.2 will deal with the collection of the data necessary for the analysis, including the development of measures and choice of control variables. Chapter 3.3 will construct the questionnaire, before chapter 3.4 takes on the choice of population and sample, as well as distribution.

3.1. Research design

The research design can be seen as the overall framework of the study, acting as a guideline in choosing the methodology for collecting and analyzing the data needed to answer the research question. There are three main types of research designs: Exploratory, descriptive and causal (Creswell, 2014). *Exploratory* designs have a focus on discovering ideas and insights and are highly relevant when the researcher does not have a clear understanding of the situation and cannot propose any sensible, convincing hypotheses. In other words, exploratory designs are not suited to give definite answers, but rather to increase knowledge and generate hypotheses. *Descriptive* designs are useful when the researcher already has some ideas and hypotheses regarding the research question and the main emphasis is on determining the frequency of something or the extent to which variables correlate. Finally, *causal* designs have the purpose of giving a clear-cut answer on whether two variables not only correlates, but actually have a cause-and-effect relation. This requires the researcher to have very clear hypotheses. The three types of research designs can as such be seen as a path, where a brand new research field will need to increase knowledge and generate ideas and hypotheses, through exploratory designs. These ideas and hypotheses can then be investigated in descriptive designs, before true causality can be tested in causal designs, giving a final answer.

The implication of this is that the choice of research design will depend on the amount of knowledge already available, for example from previous research in the area studied, and hence, the research question. As indicated, the research design will affect the rest of the choices regarding methodology in a study. A major choice is between the qualitative text-based and quantitative numbers-based methods (Creswell, 2014). Qualitative research such as case studies are well suited for exploratory designs, as their strength is in developing ideas and theories, while they are not very strong in testing for cause-and-effect relations. Testing these relations, however, along with the hypotheses developed by qualitative research, is exactly the strength of the quantitative methods such as experiments and surveys. As such, qualitative methods are most often used in exploratory or descriptive designs, while quantitative methods are more common in descriptive or causal designs.

Applying this knowledge about research designs and methods to the present study allows for choices of methodology. The main factor leading to this study and the research question, was the finding in the Global Entrepreneurship Monitor report of a correlation between being an entrepreneur and having high degrees of well-being (Amorós & Bosma, 2014). The report, however, did not offer any cause-and-effect relations or even any attempts at explaining the correlation. Self-determination theory offers a potential explanation through some clear theoretical ideas, on which a set of hypotheses can be based. With the supporting theory being as established as the case is, and having a variety of valid and reliable measuring scales, it offers the possibility of testing the cause-and-effect relations in a causal design. However, causal designs are often very large undertakings, so it would be sensible to perform a study with a descriptive design aimed at explaining the reasons for the correlations between the variables of the theory, within this specific setting. While this will not give a clear answer on the hypothesized causal relations, the established theories allow an assumed causality, and the present study will give preliminary answers by determining the correlations between the variables, which can confirm the relevance of the hypotheses.

Recalling that descriptive designs are in the borderland between qualitative and quantitative studies, neither is directly disqualified. With the purpose being to determine the correlations

between the hypothesized variables, however, the quantitative method seems more relevant, as this offers greater opportunities of statistical analysis. For the purpose of this thesis, a survey will be used. Surveys are generally divided into cross-sectional studies, those where data is collected at a single point in time, and longitudinal, those where data is collected several times. Again, the time restraint on this thesis rules out the longitudinal, which could otherwise have allowed for findings on directionality. The conclusion is then that this thesis will have a descriptive research design and be conducted through a cross-sectional survey.

3.2. Data collection

With the conclusion that a cross-sectional survey is the best fit for this particular thesis, the measures of the survey, including the control variables, will need to be developed and decided on. This will happen in chapter 3.2.1 and 3.2.2 for measures and control variables respectively.

3.2.1. Development of measures

The questions in the questionnaire need to provide information about the variables of the study. This will allow the data collected in the questionnaire to prove or disprove the hypotheses. The variables used in this study are somewhat common, at least within their research fields, with several of them having been used countless times in research on self-determination theory, for example. As such, the survey items, that is, the specific questions, already exist and have been tried and tested and shown good psychometric attributes. The survey items will be presented in the logical order of the research model depicted in figure 2.

Task autonomy

A number of the studies on job design have used task autonomy as a variable, and many of them have used the exact same items, from the nine-item “Questionnaire on the Experience and Assessment of Work” developed by van Veldhoven and Meijman (1994). The continuous use of these items means that it has been proven to be reliable. As an example, Van den Broeck et al. (2008) used the items and reported Cronbach’s alpha as $\alpha = .85$ which indicates a good internal

consistency of the item set. Due to the previous use of these survey items, as well as their proven reliability, they will be used in this study.

Table 1: Survey items for task autonomy

AUT1	I can determine the order of my tasks	Van Veldhoven and
AUT2	I can increase or decrease my workload	Meijman (1994)
AUT3	I can choose my own work goals	"
AUT4	I can take a break when I want	"
AUT5	I can choose the way in which the work is carried out	"
AUT6	I can leave my working space when I want	"
AUT7	I can determine which task I do	"
AUT8	I can decide myself how much work I do within a particular period of time	"
AUT9	I can determine my own working hours	"

Skill utilization

The second variable in the study is skill utilization, that is, the degree to which the job allows the use of existing skills and learning of new ones. Several studies, for example one by Van den Broeck et al. (2008) included the variable and used four items from Van Der Doef and Maes (1999). These four items seem highly relevant for the entrepreneurial context, and their previous use gives an idea of their reliability. The four items had a reported internal consistency of $\alpha = .75$.

Table 2: Survey items for skill utilization

COMP1	My work requires me to be creative	Van der Doef and
COMP2	My work offers me the possibilities to extend my skills	Maes (1999)
COMP3	My work allows me to learn new things	"
COMP4	My work allows me to show my capacities	"

Social support

While previous research within the job demands-resources model have used the survey items developed by van Veldhoven and Meijman (1994) to measure social support, those items did not

really suit the context of social support in this study, as many of the questions relate to social support coming from a superior, which entrepreneurs do generally not have. Instead, the eight items developed by Sherbourne and Stewart (1991) seemed better. The original article reported an internal consistency of $\alpha = .96$ indicating excellent reliability.

Table 3: Survey items for social support

SUPW1	I have someone I can count on to listen to me when I need to talk	Sherbourne and Stewart (1991)
SUPW2	I have someone to give me information to help me understand a situation	
SUPW3	I have someone to give me good advice about a crisis	”
SUPW4	I have someone to confide in or talk to about myself or my problems	”
SUPW5	I have someone whose advice I really want	”
SUPW6	I have someone to share my most private worries and fears with	”
SUPW7	I have someone to turn to for suggestions about how to deal with a personal problem	”
SUPW8	I have someone who understands my problems	”

Workload

The pressure of having much to do is measured by the variable called workload. This has been used in a number of studies and several different sets of survey items exist. Van den Broeck, De Cuyper, et al. (2010) used four items from van Veldhoven and Meijman (1994). It has since been discovered that removing one of these items provides better reliability. The item, “I’m bored at work”, not only lowers reliability, it also seems irrelevant, as it is not necessarily related to the amount of work one has to do, but can also depict the degree of enjoyment one finds in the work (Olafsen & Westbye, 2010). This study will follow that discovery and use the three items from van Veldhoven and Meijman (1994), with a Cronbach’s alpha of .75.

Table 4: Survey items for workload

LOAD1	I have a lot of work to do	van Veldhoven and Meijman (1994)
LOAD2	Often I have to work extra hard to get things done	
LOAD3	I have to work fast	”

Cognitive demands

The mental strain caused by a job is measured through cognitive demands. Van den Broeck, De Cuyper, et al. (2010) used six items from van Veldhoven and Meijman (1994), showing a Cronbach's alpha of .81. The original version, however, had seven items and it is unclear why they were not all used in the mentioned study. This study will include all seven items in the original questionnaire.

Table 5: Survey items for cognitive demands

COG1	My work demands a lot of concentration	van Veldhoven and
COG2	I have to work with a lot of precision	Meijman (1994)
COG3	I have to be attentive to many things at the same time	"
COG4	My work requires continual thought	"
COG5	I have to give continuous attention to my work	"
COG6	I have to remember many things in my work	"
COG7	My work requires a great deal of carefulness	"

Work/home inference

Work/home inference measures the degree to which the job impacts life outside of work. A well-established scale was developed by Geurts et al. (2005) and consists of four items. One example of this use is Van den Broeck, De Cuyper, et al. (2010) who reported an internal consistency of $\alpha = .79$ based on two separate surveys. Based on the acceptable reliability and previous use of the scale, as well as the relevance of both the concept and the questions, it will also be used in this study.

Table 6: Survey items for work/home inference

HOME1	I have difficulty completing my other obligations because I keep on thinking about my job	Geurts et al. (2005)
HOME2	My work schedule makes it difficult for me to fulfill my domestic obligations	"
HOME3	I have so much work to do I don't have time for my hobbies	"
HOME4	The requirements of my job make it difficult to feel relaxed at home	"

Worry

Most scales on worry are either very general or very specific for other research areas. In this case, worry needs to be related to entrepreneurship, specifically to the insecurity surrounding entrepreneurs, both financially and in terms of the venture failing. Being an entrepreneur also entails having a lot of responsibility, which could cause worry. No existing scales seemed to measure these specific worries. An article by Boehnke, Schwartz, Stromberg, and Sagiv (1998) regards the structure and dynamics of worry and presented a lot of examples. The four survey items for worry in this study were created in line with the recommendations of the article.

Table 7: Survey items for worry

WORRY1	I worry about my personal financial situation	Adapted from
WORRY2	I worry about my venture failing	Boehnke et al. (1998)
WORRY3	I worry about decisions I have to make at work	"
WORRY4	I worry about my responsibility for the venture	"

Aspirations

Four dimensions of aspirations will be included in the study, the intrinsic aspirations of self-acceptance and community feeling, and the extrinsic aspirations of financial success and social recognition. A commonly used scale for aspirations was developed by Kasser and Ryan (1996) and consists of these four dimensions of aspirations, as well as three others. The internal consistencies for the various subscales ranged from $\alpha = .59$ to $\alpha = .87$, with the mean being $\alpha = .76$.

Unfortunately the alphas were not listed for the subscales, and not all subscales are relevant for an entrepreneurial context, and hence this study, so it is not possible to present the exact alphas.

Table 8: Survey items for aspirations

IN_SA1	You will be the one in charge of your life	Kasser and Ryan
IN_SA2	At the end of your life, you will look back on your life as meaningful and complete	(1996)
IN_SA3	You will deal effectively with problems that come up in your life	"
IN_SA 4	You will know and accept who you really are	"
IN_COM1	You will donate time or money to charity	"
IN_COM2	You will work for the betterment of society	"

IN_COM3	You will work to make the world a better place	”
IN_COM4	You will help others improve their lives	”
IN_COM5	You will help people in need	”
EX_FIN1	You will have a lot of expensive possessions	”
EX_FIN2	You will have a job that pays well	”
EX_FIN3	You will have a job with high social status	”
EX_FIN4	You will be financially successful	”
EX_REC1	Your name will be known by many people	”
EX_REC2	You will be famous	”
EX_REC3	You will be admired by many people	”
EX_REC4	Your name will appear frequently in the media	”
EX_REC5	You will do something that brings you much recognition	”

Basic needs satisfaction

Several scales have been developed to measure basic need satisfaction. The primary scale which has been used is the 21-item “Basic Need Satisfaction at Work Scale” (Deci et al., 2001). This scale, however, has been reported to not function properly when a study includes job characteristics. As such, Van den Broeck et al. (2008) used an adapted 15-item version, and later Van den Broeck, Vansteenkiste, et al. (2010) developed the “Work-related Basic Need Satisfaction Scale” with 6 items for each of the three basic psychological needs, totaling 18 items, with an internal consistency of $\alpha = .83$. This latest version will be used in the present study.

Table 9: Survey items for basic needs satisfaction

NA1	I feel like I can be myself at my job	Van den Broeck,
NA2	At work, I often feel like I have to follow other people’s commands	Vansteenkiste,
NA3	If I could choose, I would do things at work differently	et al. (2010)
NA4	The tasks I have to do at work are in line with what I really want to do	”
NA5	I feel free to do my job the way I think it could best be done	”
NA6	In my job, I feel forced to do things I do not want to do	”
NC1	I don’t really feel competent in my job	”
NC2	I really master my tasks at my job	”
NC3	I feel competent at my job	”
NC4	I doubt whether I’m able to execute my job properly	”
NC5	I am good at things I do in my job	”

NC6	I have a feeling that I can accomplish even the most difficult tasks in my work	”
NR1	I don't really feel connected with other people at my job	”
NR2	At work, I feel part of a group	”
NR3	I don't really mix with other people at my job	”
NR4	At work, I can talk with people about things that really matter to me	”
NR5	I often feel alone when I'm with my colleagues	”
NR6	Some people I work with are close friends of mine	”

Motivation

For the various motivation regulations, previous research has used a variety of scales and measuring instruments over time. Many have had problems with reliability or validity, leading to the development of the Motivation at Work Scale (Gagné et al., 2010). An even newer version, by the same researchers, was recently tested in several countries and resulted in 19 items (Gagné et al., 2014). This study will use the newest version, with the addition of four items, found in Olafsen and Westbye (2010), who participated in testing the items for the final version. Those four items ensure that all motivational regulations, as previously described, are represented. The alphas for the used items were .84 for extrinsic regulation, .79 for introjected regulation, .88 for identified regulation, .94 for intrinsic regulation, .95 for amotivation. Olafsen and Westbye (2010) reported .92 for integration regulation, but no information has been published for the final items in the scale. The items will be listed as answers to the stem: “I put effort into my work”.

Table 10: Survey items for motivation

EXTRIN1	To get others' approval (e.g., supervisor, colleagues, family, clients...)	Gagné et al. (2014)
EXTRIN2	Because others will respect me more (e.g., supervisor, colleagues, family, clients...)	”
EXTRIN3	To avoid being criticized by others (e.g., supervisor, colleagues, family, clients...)	”
EXTRIN4	Because others will reward me financially only if I put enough effort in my job (e.g., investors, clients...)	”
EXTRIN5	Because others offer me greater job security if I put enough effort in my job (e.g., investors, clients ...)	”

EXTRIN6	Because I risk losing my job if I don't put enough effort in it.	"
INTRO1	Because I have to prove to myself that I can	"
INTRO2	Because it makes me feel proud of myself	"
INTRO3	Because otherwise I will feel ashamed of myself	"
INTRO4	Because otherwise I will feel bad about myself	"
IDENT1	Because I personally consider it important to put efforts in this job	"
IDENT2	Because putting efforts in this job aligns with my personal values	"
IDENT3	Because putting efforts in this job has personal significance to me	"
INTEG1	Because it has become a well-established habit/routine to me	Olafsen and
INTEG2	Because it has been incorporated as my particular goal at work	Westbye (2010)
INTEG3	Because it has become a natural habit to me	"
INTEG4	Because it has become a natural part of my life	"
INTRIN1	Because I have fun doing my job	Gagné et al.
INTRIN2	Because what I do in my work is exciting	(2014)
INTRIN3	Because the work I do is interesting	"
AMOT1	I don't, because I really feel that I'm wasting my time at work	"
AMOT2	I do little because I don't think this work is worth putting efforts into	"
AMOT3	I don't know why I'm doing this job, it's pointless work	"

Vitality

The first of the well-being variables, vitality, will be measured by a scale developed by Ryan and Frederick (1997). This seven-item scale has, with one revision, been the main vitality measure used in the field since then. The one revision was made by Bostic, Rubio, and Hood (2000), when they removed one item to show better internal consistency at $\alpha = .85$. This six-item version of the scale will be used in this study.

Table 11: Survey items for vitality

VITAL1	I feel alive and vital	Ryan and
VITAL2	Sometimes I feel so alive I just want to burst	Frederick (1997)
VITAL3	I have energy and spirit	"
VITAL4	I look forward to each new day	"
VITAL5	I nearly always feel alert and awake	"
VITAL6	I feel energized	"

Life satisfaction

A very widely used measure of life satisfaction was developed by Diener, Emmons, Larsen, and Griffin (1985). It includes five items describing overall happiness with life and has an internal consistency of $\alpha = .87$. This scale will be used in the present study.

Table 12: Survey items for life satisfaction

L_SAT1	In most ways my life is close to my ideal	Diener et al.
L_SAT2	The conditions of my life are excellent	(1985)
L_SAT3	I am satisfied with my life	"
L_SAT4	So far I have gotten the important things I want in life	"
L_SAT5	If I could live my life over, I would change almost nothing	"

Affect

The other dimension of the subjective well-being variable to be used in the study, affect, will be measured by a scale developed by Watson, Clark, and Tellegen (1988). The scale called "Positive and negative affect scale", consists of a total of 20 items, ten positive and ten negative. Thompson (2007) created a short-form version, which showed an internal consistency of $\alpha = .75$, by removing five positive and five negative items. This study will use the short-form version.

Table 13: Survey items for affect

POS1	I generally feel active	Thompson (2007)
POS2	I generally feel alert	"
POS3	I generally feel attentive	"
POS4	I generally feel determined	"
POS5	I generally feel inspired	"
NEG1	I generally feel afraid	"
NEG2	I generally feel ashamed	"
NEG3	I generally feel hostile	"
NEG4	I generally feel nervous	"
NEG5	I generally feel upset	"

3.2.2. Control variables

A potential problem in the study is the possibility that the answers are influenced by other factors, such as gender or nationality. This is of course the reason that the population was limited to specific nationalities earlier in this chapter. In an effort to ensure that no one from outside of the selected population somehow answers the questionnaire, and to an even higher degree, in order to control for various factors during analysis, the study will include a variety of control variables. These will now be presented and their relevance explained.

Gender, age, and nationality are all very common control variables and will all be included in the present study. As already indicated, gender differences can influence the way respondents perceive something in their life and how they react to it. The age of the respondents is natural to include as things like aspirations or vitality can vary with age. Nationality can be used to control for cultural differences, like previously discussed. Many entrepreneurs work alone, and as such do not receive any social support at the workplace. Therefore, a social support at home variable will be added. Further, in order to control for this, as well as general well-being and happiness, relationship status is included as well. Another factor which can have an effect on various variables is level of education, which has also been included. Previous experience, with work in general and entrepreneurship specifically, can be imagined to have an effect on various variables, which is why it has also been included. Previous research has found different conclusions regarding the impact of income on motivation and well-being, but it will be included in this study, to allow for the potential use as a control variable. The final personal control variable is subjective health, as well-being variables, especially vitality, can be expected to be higher for healthy people, than for unhealthy ones. Finally, a couple of control variables will relate to the company or venture of the respondent, as characteristics may vary. The first will be a classification of the industry in which the venture primarily operates. The second will be the age of the entrepreneurial venture. The third will be the number of employees in the venture. The fourth, and final, control variable for the company will be the annual turnover. These four factors can potentially influence the responses on several variables.

3.3. Construction and pretest

Having chosen the measures and control variables to be included in the survey, the next step is the actual construction of the questionnaire. This will be followed by a pretest to ensure that there are no problems with the questionnaire and that the respondents understand the questions. This subchapter will cover all of this, in the mentioned order.

3.3.1. Construction of the questionnaire

The questionnaire will be constructed using the SurveyXact software. The order in which the questions are presented can be important to the questionnaire, as it can either be confusing or help to ensure a logical flow. In addition, there are theories about the order in which items are presented in a questionnaire. Mitchell and Jolley (2012) argue that a questionnaire should start with easy questions, and that demographic questions should be placed at the end. In addition, they state that similar questions should be kept together. The order in which the measures were presented earlier in chapter 3.2 seems to satisfy these requirements, and also ensure a logical progression. The various variables will be grouped into a total of seven parts, including the demographic questions. This will hopefully aid the respondents in understanding the relation between questions, as well as their relevance.

Another important choice to make is what options the respondents will be presented for when answering. The various items presented for the variables earlier in this chapter had different options, with most being presented with either a five-point or a seven-point Likert scale. The present study will use the seven-point Likert scale for all variables, in an effort to provide the respondents with some consistency in presentation and options. Due to the wording of the various questions, three different seven-point scales will be included. The first will go from 1 (Strongly disagree) to 7 (Strongly agree), the second from 1 (Not at all Important) to 7 (Very Important), and the third will range from 1 (Not at all for this reason) to 7 (Exactly for this reason). It is given, then, that 4 will be a neutral response. A final consideration is whether to make answering the items optional or compulsory. As missing answers make the process of analyzing the data much more complicated, and the various scales may obviously lose reliability if not all items are answered, the

questions in the questionnaire will be compulsory. There will be two exceptions in the control variables, namely the questions regarding income and company turnover, as these can be seen as confidential.

In a further effort to inform respondents of the relevance of the questionnaire itself, as well as the various parts, there will be a one-page intro text in the very beginning of the questionnaire, in addition to a small intro text before each part of the questionnaire. As well as informing about the goals and relevance of the study, the various intro texts will also function as a guide to answering the questionnaire correctly, ensuring that the respondents will not be left in doubt. Finally, the intro text will guarantee the confidential treatment of all data, to ensure that respondents will not feel that intimate information will be published or can be traced back to them. The final version of the questionnaire, which consists of 142 questions divided into seven parts, can be found in appendix 1.

3.3.2. Pretest

When developing a questionnaire, pretesting is a method to ensure that data collection will be successful, that there are no problems with the items and scales, and that the respondents understand the questions they are asked. Given the fact that the vast majority of the questions in the survey have been used, pretested, and validated before, it seems unnecessary to devote a significant amount of time and effort to do a very thorough pretest. As such, the pretest will primarily serve the purpose of ensuring that the questions were understandable and that there was no confusion regarding the questionnaire. In order to perform the pretest, the questionnaire was distributed directly to a few entrepreneurs who had agreed to answer the survey and offer their feedback. They generally reported that they understood everything, had no problems, and that they thought the questionnaire had a logical progression. They also reported the time they spent answering the questionnaire, which could then be presented in the intro text. After these comments the questionnaire was ready for distribution.

3.4. Population, sample, and distribution

With the questionnaire completed, the population that is of interest to this study should be defined, and the survey should be distributed. This subchapter will first choose the population and sample in chapter 3.4.1, before discussing the distribution in chapter 3.4.2.

3.4.1. Population and sample

Given the fact that the main topic of the thesis is well-being in entrepreneurs, it is somewhat straight-forward that the population should be entrepreneurs. However, as mentioned in the introduction, the levels of well-being for entrepreneurs were particularly high only in innovation-driven economies, meaning that a focus on these countries makes sense. The innovation-driven economies are primarily defined as the countries in Northern Europe, Western Europe and North America, with the exceptions including a few countries in Southern Europe, Eastern Europe, Asia and the Caribbean. In order to minimize the possibility of cultural differences impacting the study, the population will be limited to culturally similar countries. As such, this study will define the final population as entrepreneurs from Scandinavia, Canada, and USA.

It is obviously not very probable that the entire population will be exposed to the survey, let alone answers it. The sample is defined as the part of the population that is exposed to the survey, and is as such closely linked to the choices regarding distribution. Had the study had a population of salaried workers in the banking sector, the survey could be distributed to a few banks and the sample would hence be the employees in these banks. Unfortunately, having the population consist of entrepreneurs makes the distribution, and the definition of the sample, a bit more difficult. As entrepreneurs often work alone or in very small teams, it is not as simple as contacting a few companies and asking them to distribute the questionnaire. In order to secure that the number of respondents is satisfactory in order to conduct statistical analyses, a minimum requirement for the number of respondents should be set. According to Field (2007), the number depends on the number of predictor variables in the study, denoted k . The minimum in order to reliably calculate the model explanatory power is $50+8k$, while the minimum to ensure reliable analysis on the individual relations is $104+k$. The present study has 7 predictor variables and the

numbers are hence 106 and 111. As this study will both include analysis on explanatory power and individual relations, the higher number is used, and a minimum requirement of 111 respondents is set.

3.4.2. Distribution

The questionnaire was distributed in two separate ways, with very different results. First, it was distributed in various social network groups for entrepreneurs on Facebook and LinkedIn, as well as online discussion forums for entrepreneurs. The total number of members of these groups and forums is very difficult to measure, but a low estimate is 225,000 members, while a high estimate is 1,500,000 members. The actual number will most likely be somewhere in between. Of these, there are probably some duplicates and not every member is necessarily active in the group or forum. Regardless of the exact amount of members, only 30 people answered the questionnaire, yielding a very, very low response rate of between 0.002 % and 0.013 %.

The failure of the first approach prompted a second, more direct, way of distributing the questionnaire. Through the portfolios of various Scandinavian incubators and accelerators, entrepreneurial companies could be identified and their founders contacted directly via email. This proved to be a much better way of gathering data. An email was sent to a total of 446 entrepreneurs (188 Danish, 178 Swedish and 80 Norwegian) identified this way. This yielded 131 answered questionnaires, a response rate of 29.37 %, and brought the total number of respondents to 161. It would probably have been possible to find more companies and, hence, more founders to send the questionnaire to, but after picking the low-hanging fruits, it became a matter of time, effort and payoff.

The process of distributing the questionnaire gave some clear conclusions on the right and wrong ways to do so. The response rates very clearly indicate that contacting the target population directly, for example through email, will give a much higher probability of success than simply posting the link in a social networking group and hoping that they will notice and take action.

4.0. Analysis

This chapter will contain the various analyses of the collected data. First, the data has to be cleaned and the various indicators and variables will have to be validated. Second, the hypotheses presented in chapter 2.4 will be tested by regression analysis. This means that the data meet some standard prerequisites, which will also be tested. Chapter 4.1 will address the cleaning data. Chapter 4.2 will be used to analyze the validity and reliability of the data. Chapter 4.3 will be used to determine whether the prerequisites for regression are met. Finally, in chapter 4.4 the regression analysis will be done, in order to test the hypotheses. All analyses will be performed in the SPSS software.

4.1. Cleaning the data

Before analyzing the collected data, the dataset must be cleaned. Cleaning refers to the task of preparing the data for analysis. The questionnaire was designed to eliminate the need for too much cleaning, but a few things are necessary. First of all, some of the data has to be recoded. This is the case for some of the control variables, where the answer was in text-form, which has to be recoded into numbers representing the categorical answers. This is because the software cannot perform statistical analyses using text strings. An example is gender, where “Male” is recoded into “1” and “Female” is recoded into “2”. Aside from gender, this process is done on nationality, relationship status, education, previous entrepreneurial experience, subjective health, and industry of the venture. The other necessary recoding is for the few cases with negatively worded questions. This is only relevant for the three need satisfaction dimensions, where a total of eight questions were negatively phrased. These are reversed, so that an answer of “1” results in a score of “7”, “2” becomes “6” and so on.

The second part of the cleaning is to check for extreme values and outliers. First, descriptive statistics are used to identify the minimum and maximum values. For all regular variables these are between 1 and 7. Some of the demographic variables, however, show irregular numbers. One has indicated an extreme amount of employees, while two have reported negative turnover,

which is obviously impossible. These three values are deleted. In addition, one respondent has clearly faked the questionnaire, as all scaled answers are the same, and the demographic variables are extreme. This respondent is deleted, leaving 160 respondents in the dataset.

In order to check for univariate outliers the variables are standardized. If a respondent has a standardized score above 3.29 for a variable, it is a univariate outlier (Field, 2007). Statistical analysis shows that there are five cases of univariate outliers, with scores just above the cutoff point. Chi-Square is calculated in order to check for multivariate outliers using the Mahalanobis test, with significant scores, $p < .001$, being outliers (Tabachnick & Fidell, 2007). The analysis shows three multivariate outliers. Given the fact that the outliers are not consistent, and that a visual inspection of the box-plots confirms that none were extreme as well, no outliers are deleted at this point.

This leaves a sample of 160 entrepreneurs (124 male, 33 female, 3 unanswered). The respondents were aged between 21 and 73 years, with a mean of 39.82 years old. A total of 89.3 % identified themselves as Scandinavian (70 Danish, 42 Swedish, 30 Norwegian, 1 Finnish). The percentage of respondents in a relationship or marriage came to 78.7 %. Of the respondents, 10 % indicated that they do not have a higher education, while 53.8 % indicated that they have previous entrepreneurial experience, averaging 6.99 years. The average entrepreneurial company represented was a 4 year old technology firm with 6 employees, excluding the entrepreneur, and a yearly turnover of € 515,000.

4.2. Validity and reliability

This subchapter regards the validity and reliability of the indicators and variables. Validity refers to the indicators and variables measuring what they are supposed to measure, while reliability on the item level refers to the items measuring the same thing. There are several different ways to test for validity, which will follow. In general, validity tests can be either theoretical or empirical. As all indicators and variables used in this thesis are well-established and have been used in previous research, with the exception of the worry indicators which were created in line with theoretical

recommendations, the theoretical validity should be established and the following will focus on the empirical tests alone, namely the tests for convergent validity, divergent validity and discriminant validity. All three tests will be done with factor analysis in SPSS, using the Maximum Likelihood estimation method where possible, and otherwise using the more lenient Principal Component method of estimation. While convergent and divergent validity take place on the indicator level, discriminant validity uses the compound variables, meaning that the variables will be created after the reliability analysis, but before the tests for discriminant validity.

4.2.1. Normal distribution

The first part of the testing will be looking at the normal distribution of the data on the indicator level. Many statistical tests assume or require that the data is normally distributed. In order to determine whether the data is normally distributed, one would look at the skewness and kurtosis for each item. A perfect normal distribution, with both skewness and kurtosis equaling zero, will be a bell curve. If the data is skewed, the bell curve will be asymmetric to either side, while kurtosis describes the degree to which the center is peaked or not, that is, the degree to which the respondents have used the entire scale. A general rule of thumb is that skewness should be less than two and kurtosis less than four, positive or negative (Field, 2007).

Descriptive statistics in SPSS shows that the data is generally normally distributed, as can be seen in appendix 2. For the main variables included in the research model only two items, skill utilization item 3 and negative affect item 2, were outside the limits, but just barely so. For the demographic variables, three items had very high scores on both skewness and kurtosis, namely income, number of employees and company turnover. The kurtosis will most likely be a result of many of the respondents being at a similar point in their entrepreneurial venture, given that most respondents were found through incubators. This will also mean that the companies are relatively small. With many of the respondents reporting zero or very few employees, and zero or very little turnover, it is impossible to see a perfect bell curve, as there cannot be a negative number of employees or negative turnover. This again means that a few respondents with large ventures will lead to skewness. All in all, it can be concluded that all items in the research model are normally

distributed, or at least very close to being so. Some control variables are not normally distributed, but this is to be expected with such a specific population. As such, all variables can be used in the statistical analyses.

4.2.2. Convergent validity

The first type of validity to test for will be convergent validity, which indicates the degree to which the indicators measure the concept that they are supposed to measure, by looking at their correlation. The indicators should load on a single factor for each variable, and the higher the correlation the better, but as a rule of thumb, it should at the very least be above .40 (Mitchell & Jolley, 2012). All variables, except for the demographic ones, will be tested. Due to space limitations, only the ones that do not meet the requirements will be mentioned and it will be explained what action, if any, will be taken.

Social support – Work

The eight indicators split evenly into two factors, indicating that four of the variables measure a slightly different thing than the other four. When taking the questions for the indicators into consideration, it would seem that the split is due to four indicators relating to other people offering practical information or advice, while the other four regard support for more personal and emotional problems. This appears to be the reason for the two factors, but as both of these interpretations of social support are relevant to the thesis, it is possible to force the analysis to use only one factor and look at the scores. Doing that reveals that all scores are above .60, with most above .80, establishing convergent validity as a single variable. For this reason, all eight indicators will be used for the variable.

Basic need satisfaction, autonomy

The six indicators load on two separate factors. The division is between the positively and negatively phrased questions and has previously been seen in the literature, leading to a proposed theoretical division between positive need satisfaction and negative need frustration. When forcing the analysis to use only one factor, all indicators are above .40, meaning that convergent

validity is acceptable. As such, all indicators will be kept for now, but this might have to be revised after the other validity tests.

Motivation, extrinsic

An even split is seen, with three indicators loading on one factor and three on another. The division seems to be between social and materialistic reasons. This has been seen before and makes sense theoretically. When forcing the six indicators to load on a single factor, two items fall out and one scores below the cutoff point. Another way to handle the issue is to create a variable for each factor and look at their correlation. Doing this shows a weak, but significant correlation between the two dimensions. With this result, and the fact that the indicators are tried and tested many times, both of the two dimensions will be used in the compound variable.

Motivation, introjected

The four indicators load on a single factor, but two have weak scores, one being below the cutoff point. The divisions between the two weak and two strong scores, is because the indicators belong to the approach and avoidance dimensions, respectively. As with the extrinsic motivation, this has been seen before and makes theoretical sense. The same procedure of creating two variables and look at their correlation is used, showing a moderate significant correlation. As such, the same conclusion as earlier is used; both dimensions will be used to make up the variable.

4.2.3. Divergent validity

The next test will be for divergent validity, which investigates whether the indicators only measure the concept it was intended to measure and does not load for other variables. Again, indicators for each variable should load on one separate factor and in case of cross-loading, the cross-loading itself should be less than .40 and the difference between the factor loading and the cross-loading should be at least .10 (Mitchell & Jolley, 2012). With the relatively few respondents and many indicators, it is unlikely that running all indicators in a single factor analysis will work. As such, the factor analysis will be divided, with all job characteristics together, all aspirations together, all

basic need satisfaction together, all motivation together and all hedonic well-being together. Again, due to space restraints, only the issues will be mentioned here.

Job characteristics

The factor analysis shows that the indicators for the seven variables load on nine factors, with some cross-loading. Forcing the analysis to only use seven factors makes the social support at work split, as in the convergent validity analysis, while workload and cognitive demands cross-load. As the social support has been established to work as a single variable, forcing the software to eight factors to allow the division into two dimensions for the sake of analysis is reasonable. Doing this results in no cross-loading and all other indicators loading on the correct factors. As such, divergent validity can be established with all indicators.

Aspirations

The indicators load on four factors as supposed, but there is cross-loading between the financial and recognition indicators. Running a factor analysis on these indicators alone shows that EX_FIN3 seems to be the problem. The theoretical reason for the cross-loading is most likely that the phrasing of the questions regards a job with a high social status, which is closely linked to the recognition dimension. Removing this indicator makes the rest of the indicators load on four factors without cross-loading. As such, EX_FIN3 will not be used from this point on, to ensure divergent validity.

Basic need satisfaction

The indicators for autonomy need satisfaction split again, into the positively phrased and those that originally were negatively phrased, resulting in four factors, without cross-loadings. When forcing to three factors, a couple of the indicators are weak. Given that the reversed indicators have caused trouble in both the convergent and divergent validity analyses, they will be removed to see if the results are better. With all reversed indicators for each need excluded, the factor analysis shows a split on three factors with very high factor loadings and no cross-loading. This means that NA4, NA5, NA6, NC5, NC6, NR4, NR5, and NR6 will not be used, in order to ensure a high degree of convergent and divergent validity. This is not in conflict with newer research, as

previously mentioned. Several studies have found support for a division between the positively phrased items and the negative ones (Vansteenkiste & Ryan, 2013). The reason is that the positively worded items seem to represent one dimension, need satisfaction, while the negatively phrased questions do not represent the lack of need satisfaction, but a separate dimension called need frustration. As such, removing this latter dimension should not be a problem for the measure of need satisfaction, it should in fact strengthen it, as it is no longer combined with a separate dimension.

Motivation

Amotivation will not be included in the analysis, for two reasons. First, the goal is to investigate the effects of motivation, not amotivation. Second, very few entrepreneurs should be expected to show amotivation, a complete lack of putting an effort into their job. As such, there should be five factors. Running the factor analysis for all motivation indicators, however, extracts six factors, as extrinsic motivation again splits into the approach and avoidance dimensions. In addition, one introjected motivation indicator has a very weak loading. Following the ideas from the convergent validity analysis, forcing to seven factors should allow both extrinsic and introjected motivation to split into their approach and avoidance dimensions, which have been established as correlating. This results in all indicators loading where they should, with no cross-loading and high factor scores for most indicators, meaning that divergent validity has been established.

4.2.4. Reliability

The reliability test will give the Cronbach's alpha of each set of indicators, the internal consistency, allowing for conclusions on the reliability of the indicators. The indicators removed in the previous tests for validity will not be included. The analysis will also show whether the reliability will be improved by removing any indicators. The minimum value for Cronbach's alpha is .60, but .70 and higher is preferred (Mitchell & Jolley, 2012). The analysis shows that all sets of indicators less one, the financial dimension of extrinsic aspirations, had scores above .70. The last one was at .69, which is still acceptable. No sets would experience a significant improvement after removing any indicators. Appendix 3 shows a table with all Cronbach's alphas.

4.2.5. Indexation

Having all indicators tested for convergent validity, divergent validity and reliability allows for the creation of the variables. All main dimensions were made into variables by adding the indicators and dividing by their amount. Furthermore, some first-level constructs were then combined into variables representing their categories. For example, the variable “Job resources” consists of the “Task autonomy”, “Skill utilization”, and “Social support at work” dimensions, which again consist of nine, four and eight indicators respectively. This leaves five independent variables, namely “Job resources”, “Job challenges”, “Job hindrances”, “Intrinsic aspirations”, and “Extrinsic aspirations”. In the same way, the three dimensions for basic need satisfaction were created and combined into a “Basic need satisfaction” variable.

As for the motivation dimensions, previous literature have used a relative scale, using a correlational analysis to determine whether the various dimensions interact as they are theorized to do. Each of the five regulations is supposed to correlate the strongest with the two regulations immediately next to it on the motivation continuum. The test shows that the integration regulation is not correlating with the intrinsic regulation as it should, resulting in intrinsic regulation correlating more with the identification regulation. This is exactly the same issue that previous literature has encountered, and as such, the integration regulation will be removed. This leaves four regulations to create a variable for “Relative autonomy orientation”, as proposed by Deci, Connell, and Ryan (1989). This is done by weighing the regulations in the following equation: $((\text{Intrinsic} * 2) + (\text{Identified} * 1) + (\text{Introjected} * -1) + (\text{Extrinsic} * -2))$. Finally, a variable called “Subjective well-being” will be created from the dimensions of “Life satisfaction”, “Positive affect”, and “Negative affect”, while the dimension of “Vitality” will be a standalone variable. A list of each variable and their dimensions and indicators is located in appendix 4.

4.2.6. Discriminant validity

The final validity analysis will test for the discriminant validity of the variables. As opposed to convergent and divergent validity, which operates on an indicator level, the analysis of discriminant validity will take place on the variable level. It is intended to test whether the various

variables in fact measure different things. This is tested by running a correlation analysis with all the variables that were just created. In terms of discriminant validity, the lower the correlation the better. The values should preferably be lower than 0.60 and have to be less than .80 (Mitchell & Jolley, 2012). The correlation matrix, which is included in appendix 5, shows that only two correlations are above .60. Basic need satisfaction correlates with subjective well-being at .61, which is just barely above the preferred value. Given the structure of the process model of self-determination theory, it makes sense that the outcomes correlate with basic need satisfaction, as the latter explains the outcomes through motivation. Vitality and subjective well-being, the two outcome variables in the model, correlate at .74, which is still below the maximum value. Having two positive outcomes correlate is also logical, given that the theory expects the same factors to influence them. As such, all variables show discriminant validity.

4.3. Prerequisites for regression

As the testing of the hypotheses will be done through regression analyses, it is important to ensure that the quality of the data is sufficient. This was in part done through the tests for validity and reliability in the previous subchapter, but there are more specific prerequisites for regression analysis which will be tested now. Specifically, the prerequisites regard normality, linearity, homoscedasticity, and multicollinearity (Tabachnick & Fidell, 2007). In order to draw reliable conclusions from the regression analyses, these prerequisites should be met.

4.3.1. Normality

The first prerequisite regards the normality of the variables, in other words, a normal distribution. As in the general analysis of normal distribution on an indicator level, this will be done through descriptive statistics in SPSS. The difference is that this time the variables will be analyzed, not the indicators. The same requirements, that skewness should be less than two and kurtosis less than four, are valid this time (Field, 2007). The analysis, which can be found in appendix 7, shows that all variables show very good values on both skewness and kurtosis, meaning that the demand for normality is met.

4.3.2. Linearity

The second prerequisite demands linearity, that is, linear relations between variables. If the relations are nonlinear, the regression will underestimate the strength of the relation. A widely used method of determining linearity is to simply look at bivariate scatterplots and see if the distribution is linear or not (Field, 2007). While the perfect case is a thin straight line, or an oval shape, this is not necessary to establish linearity, as long as the distribution is not obviously nonlinear. This method is not as exact as more complicated statistical analyses, but for this thesis, it should be fine, given the fact that all the relations are theoretically assumed to be linear. The scatterplots can be found in appendix 8. All of the scatterplots show acceptable distributions which are not obviously nonlinear, meaning that the prerequisite for linearity is met.

4.3.3. Homoscedasticity

The third prerequisite demands homoscedasticity, which means that the variance of a variable is equal across all values of the predictor variable. The opposite, heteroscedasticity, is when the variance differs at various values of the predictor variable. If the assumption for homoscedasticity is not met, there will be bias in the linear regression analysis, making the conclusions less reliable. Testing for homoscedasticity is often done visually through the same bivariate scatterplots used for linearity (Field, 2007). A cone shape will indicate heteroscedasticity, while a straight line is a perfect example of homoscedasticity. As such, the analysis is done by looking at the scatterplots and watching the shape of the distribution. The scatterplots are located in appendix 8, and while they do not show perfect lines, most of them show roughly the same variance across the values. The relation between job hindrances and basic need satisfaction is the only one that shows a resemblance of a cone shape, with more variance at higher levels of job hindrances. While this is not optimal, the logical explanation is that basic need satisfaction also depends on other variables. As such, two respondents with high levels of job hindrances may experience very different amounts of job resources, as an example, which will impact the basic need satisfaction. As such, the cone shape will most likely be due to the model of the study, and not due to true heteroscedasticity. As such, the third prerequisite is met.

4.3.4. Multicollinearity

The last prerequisite demands the absence of perfect multicollinearity, that is, there cannot be perfectly linear relation between two or more independent variables. Such a situation would render it impossible to determine which effect the independent variables have on the dependent variable, making a regression analysis unreliable. Two variables can be related without having a perfect linear relation, in which case it would be a case of “less-than-perfect” multicollinearity. This is less of a critical issue than the perfect type, but the optimal dataset would have no degree of multicollinearity at all. When testing for perfect multicollinearity in SPSS, there are a few demands. The variance inflation factor (VIF) should average approximately 1 and no single VIF value should be above 10. No tolerance value should be below 0.2. The condition index should be below 30. Finally, there should not be multiple variance proportions above 0.5 on the same dimension (Field, 2007). Performing this test with job resources, job challenges, job hindrances, intrinsic aspirations and extrinsic aspirations, upon their dependent variable of basic need satisfaction, shows that all the values are acceptable and as such, there is no perfect multicollinearity. As basic need satisfaction is the only independent variable for relative autonomous motivation, which is again the only independent variable for vitality and subjective well-being, there is no reason for further tests for multicollinearity. The results of the analysis can be found in appendix 9.

4.4. Testing of hypotheses

This subchapter will contain the analyses that will be used to answer the hypotheses created in chapter 2.4. These analyses will consist of a correlation analysis of all the variables in the research model, as well as regression analyses of the hypotheses. This should enable clear answers on the hypotheses, and hence allow for conclusions on the research question.

4.4.1. Correlation analysis

Before doing regression analyses, a correlation analysis will help determine whether the variables are indeed significantly correlated. These correlations will show whether the various variables are

related, but a correlation analysis alone is not enough to uncover the nature of the relation. As can be seen in appendix 5, the results show that all the expected relations are indeed significantly correlated. In fact, all correlations, except for the one between job challenges and basic need satisfaction, is significant at the 0.01 level, while the mentioned correlation is significant at the 0.05 level. The results of the correlation analysis are promising in regards to the hypotheses, but regression analyses will allow for more conclusive answers.

A second correlation analysis including the control variables is performed. By looking at which control variables correlate with both the independent and dependent variables for each hypotheses, the control variables to be used in the regression analyses can be chosen. The results can be found in appendix 6, and show that social support at home is significantly correlated with job resources and intrinsic aspirations, as well as basic need satisfaction. As such, it might explain part of the relation and will be used as a control variable. Likewise, previous entrepreneurial experience is significantly correlated with basic need satisfaction and relative autonomous motivation, as well as vitality and subjective well-being. Finally, subjective health is significantly correlated with both relative autonomous motivation and vitality and subjective well-being. In addition to the statistically chosen control variables, age and gender will be used for all regression analyses, and relationship status will be used as a control variable predicting basic need satisfaction.

4.4.2. Regression analysis

The main tool that will be used to conclude on the hypotheses will be the regression analyses. While the correlation analysis showed the relations between variables, the regression analyses can be used to predict one variable from another. This does not prove causation, but it does show to what degree one variable predicts another in the dataset. Additionally, where the correlation analysis looks at the variables in independent pairs, a regression analysis allows the use of several variables predicting an outcome, as well as the use of control variables. There will be four regression analyses, one for each step of the relations in the research model, including two separate outcomes from relative autonomous motivation. The interesting values of the regression

analyses will be the explanation power, R^2 , which shows the percentage of the dependent variable that can be explained by the independent variable or variables. The standardized beta-value tells how many standard deviations the dependent variable will change, when an independent variable changes by one standard deviation. Finally, the significance level indicates whether the findings are random or significant.

Regression analysis 1 – Predicting basic need satisfaction

The first regression analysis will be a multivariate regression on the relation from job characteristics and aspirations to basic need satisfaction. As such, it will test hypotheses H1 through H5. Two separate regression analyses will be performed. The first will include job resources, job challenges, job hindrances, intrinsic aspirations, and extrinsic aspirations, to look at their relation to basic need satisfaction. The second will additionally include age, gender, relationship status, and social support at home as control variables. All findings will be presented in table 14 and commented below.

Table 14: Regression analysis 1

<i>Dependent variable</i>	<i>Independent variable</i>	<i>Explanation power</i>	<i>Explanation power with control</i>	<i>Beta</i>	<i>Beta with control</i>
Basic need satisfaction	Job resources	.459***	.484***	.493***	.446***
Basic need satisfaction	Job challenges			.095	.104
Basic need satisfaction	Job hindrances			-.218**	-.209**
Basic need satisfaction	Intrinsic aspirations			.142*	.142*
Basic need satisfaction	Extrinsic aspirations			.184**	.181**

*** $p < .001$, ** $p < .01$, * $p < .05$

With an explanation power of 45.9 %, the results show that the five independent variables explain nearly half of the basic need satisfaction. At $p < .001$, this finding is very significant, and hence not random. While an even higher explanation power would have strengthened the model, the result

clearly shows that the five independent variables can predict basic need satisfaction, and 45.9 % is generally considered high within social sciences.

The role of each separate job characteristic or aspiration type can be judged from the beta-values. As expected, job resources show the highest beta-value, with an increase of one standard deviation leading to an increase of almost 0.5 standard deviations in basic need satisfaction. This supports hypothesis H1. In reverse, job hindrances lower basic need satisfaction at a significant beta-value of -.22, supporting hypothesis H3. Both types of aspirations have a positive impact on basic need satisfaction, which is in conflict with the hypothesis stating an expected negative impact of extrinsic aspirations. As such, hypothesis H4 is supported, while H5 is discarded. The model shows that job challenges do not have a significant impact on basic need satisfaction, as was hypothesized. This might be an effect of merging the three basic needs into one variable, as job challenges might relate differently to each of the three needs. In order to check for this, three univariate regressions are run, looking at the relation between job challenges and the three needs separately. As seen in table 15, this shows significant positive relations between job challenges and the needs for autonomy and competence, but no relation with the need for relatedness. As such, hypothesis H2 is partly supported, even though the relation is hidden by the merging of the basic need satisfactions.

Table 15: Regression analysis 1.1

<i>Dependent variable</i>	<i>Independent variable</i>	<i>Beta</i>
Autonomy satisfaction	Job challenges	.228**
Competence satisfaction	Job challenges	.225**
Relatedness satisfaction	Job challenges	.008

***p < .001, **p < .01, *p < .05

In an effort to ensure that the findings are valid and not impacted by hidden variables, the control variables chosen in chapter 4.4.1 are added to the model. The explanation power only increases slightly to 48.4 %, still at p < .001, and the individual beta-values remain close to their original values and retain their significance levels. As such, the analysis shows that the findings can be trusted.

Regression analysis 2 – Predicting relative autonomous motivation

The second regression analysis makes basic need satisfaction predict relative autonomous motivation, as per hypothesis H6. The control variables included will be age, gender, and previous entrepreneurial experience. The findings are summarized in table 16.

Table 16: Regression analysis 2

Dependent variable	Independent variable	Explanation power	Explanation power with control	Beta	Beta with control
Relative autonomous motivation	Basic need satisfaction	.175***	.172***	.418***	.393***

***p < .001, **p < .01, *p < .05

As can be seen, basic need satisfaction offers 17.5 % explanation power on relative autonomous motivation, which is a somewhat low figure, but the relation still exists, and is significant at $p < .001$. The beta-value, however, shows a strong relation, where an increase of one standard deviation on basic need satisfaction will lead to an increase of .42 standard deviations on relative autonomous motivation, at significance level $p < .001$. Adding the control variables does not lead to any real changes in the model, meaning that the analysis supports hypothesis H6.

Regression analysis 3 – Predicting vitality

The third regression analysis will investigate the relation between relative autonomous motivation and vitality, to test hypothesis H7. The regression analysis will include age, gender, subjective health, and entrepreneurial experience as control variables. The results are found in table 17.

Table 17: Regression analysis 3

Dependent variable	Independent variable	Explanation power	Explanation power with control	Beta	Beta with control
Vitality	Relative autonomous motivation	.189***	.240***	.435***	.352***

***p < .001, **p < .01, *p < .05

The results show that relative autonomous motivation explains 18.9 % of vitality, at $p < .001$. In addition, the beta-value shows a clear relation, with .44 standard deviations increase in vitality, per increase of one standard deviation in relative autonomous motivation, also at $p < .001$. Adding the control variables increases the explanation power of the model by 5.1 %, meaning that the control variables definitely play a role. The beta-value is also lower, but the relation is still clear and as such, there is support for hypothesis H7.

Regression analysis 4 – Predicting subjective well-being

The fourth and final regression analysis looks at the relation between relative autonomous motivation and subjective well-being, testing hypothesis H8. Age, gender, subjective health and previous entrepreneurial experience will be included as control variables in the regression. Table 18 summarizes the results.

Table 18: Regression analysis 4

Dependent variable	Independent variable	Explanation power	Explanation power with control	Beta	Beta with control
Subjective well-being	Relative autonomous motivation	.177***	.307***	.421***	.362***

*** $p < .001$, ** $p < .01$, * $p < .05$

The analysis shows that relative autonomous motivation explains 17.7 % of subjective well-being, at $p < .001$. The beta-value shows that an increase of one standard deviation in relative autonomous motivation gives an increase of .42 standard deviations in subjective well-being, also at $p < .001$. This shows a significant relation, which is weakened a bit by the addition of the control variables, but is still significant. As such, hypothesis H8 finds support in the data.

4.4.3. Analysis of indirect effects

As both the theoretical model and the research model show some indirect links, it would make sense to analyze whether these actually hold, or if they should be skipped and the effects made

direct instead. This can be done through a bootstrapping analysis, where the variables on one level of the model are used as the independent variable, the next level used as a mediator and the third level as the dependent variable. Doing this gives the results shown in table 19.

Table 19: Indirect effects

Independent variable (IV)	Mediator variable (MV)	Dependent variable (DV)	a-path (IV-MV)	b-path (MV-DV)	c-path (direct effect)	c'-path (direct effect)	Indirect effect (ab)	SE (ab)	Bootstrapping BC 95 % CI	
									Lower	Upper
Job resources	Basic need satisfaction	Relative autonomous motivation	.62*	2.06*	1.23*	-.04	1.27*	.30	.681	2.001
Job challenges	Basic need satisfaction	Relative autonomous motivation	.19*	1.97*	.79	.42	.37*	.18	.063	.754
Job hindrances	Basic need satisfaction	Relative autonomous motivation	-.15*	2.01*	-.39	-.09	-.30*	.11	-.587	-.094
Intrinsic aspirations	Basic need satisfaction	Relative autonomous motivation	.37*	2.04*	.77	.01	.76*	.22	.404	1.216
Extrinsic aspirations	Basic need satisfaction	Relative autonomous motivation	.18*	2.42*	-.63*	-1.08*	.44*	.15	.200	.771
Basic need satisfaction	Relative autonomous motivation	Vitality	2.04*	.06*	.79*	.67*	.12*	.04	.045	.235
Basic need satisfaction	Relative autonomous motivation	Subjective well-being	2.04*	.12*	1.77*	1.53*	.24*	.09	.083	.468

The a-path describes the strength of the relation between the independent variable and the mediator variable. These are the relations tested in the regression analyses and all show significant results that support the findings of the regressions. The b-path describes the link between the mediator variable and the dependent variable. These were also tested in the regression analysis and supported here. The c-path describes the total effect of the independent variable on the dependent variable. This total effect is shared between the c-prime-path which shows the direct effect of the independent variable on the dependent variable, and the ab-path showing the indirect effects. The results show that the outcomes of vitality and subjective well-

being are related both directly to basic need satisfaction, and indirectly through relative autonomous motivation. All three types of job characteristics show only indirect effects on relative autonomous motivation, through basic need satisfaction, and the same is the case for intrinsic aspirations. Extrinsic aspirations, on the other hand, show a significant, positive indirect effect through basic need satisfaction, but a significant and strong negative direct effect on relative autonomous motivation. This finding is surprising and somewhat contradicting. It is possible that extrinsic aspirations should be linked directly to relative autonomous motivation, with a negative effect, rather than to basic need satisfaction, but more analyses are needed to make that conclusion.

4.4.4. Summary of analysis

This chapter started with a collection of preliminary analyses to confirm the validity and reliability of the data, as well as to make sure that it met the requirements for regression analysis. This resulted in the indexation of the final variables of the study. The hypotheses were tested through a correlation analysis and regression analyses. These confirmed all hypotheses except for two. H2, the hypothesis regarding job challenges being positively related to basic need satisfaction was only partially supported. H4b proposing a negative relation between extrinsic aspirations and basic need satisfaction was discarded, as a positive relation was found. Finally, an indirect effects analysis supported the findings.

5.0. Discussion

This chapter will discuss the findings of the analysis presented in the previous chapter. The thesis has identified a theoretical framework which has proven promising, in terms of explaining the underlying processes behind the finding of high degrees of well-being in entrepreneurs. The results of the analysis show that there is a clear link between factors in the job as an entrepreneur, and well-being. This link is explained through the process model of self-determination theory. The analysis shows that the job characteristics and aspirations impact the satisfaction of the basic psychological needs. The level of basic need satisfaction decides the degree of autonomous motivation, which, in turn, impacts the well-being of the individual.

This chapter will first discuss the theoretical implications within self-determination theory and the job demands-resources model. A discussion of practical implications for the job as an entrepreneur, as well as society in general, will follow. Finally, the limitations of the present study, as well as possible future research directions, will be covered.

5.1. Theoretical implications

The study was built around the theoretical framework offered by self-determination theory, as well as the supplementary job demands-resources model. The results of the analysis were largely in line with the theories, but not entirely. As such, the theoretical implications of the present study are mostly supportive, but also offer some contrasting findings, which beg more research. The following implications are judged to be the most significant ones, and, hence, the ones which will be explained in-depth.

The most notable supportive implication is based on the relations between job characteristics and basic need satisfaction. The job demands-resources model originally operated with two dimensions, job resources, which were positive, and job demands which were negative. Recent research on the model have led to the proposed division of job demands into job challenges, which are positive in their own way, and job hindrances which are negative (Van den Broeck, De

Cuyper, et al., 2010). One of the aims of the present study was to add to the body of research on this proposed modification, as it is a very new concept which has barely been studied. The results clearly showed that job challenges and job hindrances operate in different ways, as their hypothesized positive and negative influences on basic need satisfaction, respectively, were confirmed. It would seem that even though job challenges require energy, in the same way that job hindrances do, they have a stimulating and challenging function as well. It appears that the stimulation provided by job challenges more than outweigh their energy drain, resulting in a net positive effect on the satisfaction of individual needs. The reason that only the individual needs were satisfied, and not the compound variable, is most likely that the specific job challenges chosen, workload and cognitive demands, are unrelated to the need for relatedness. Other job challenges might relate to a different combination of the basic psychological needs, or even to all three of them. The stimulation would seem to be a result of the fact that the job challenges, while requiring energy, also contain potential gains. As such, it would seem that this stimulating factor is what makes job challenges positive and hence separates them from job hindrances.

The difference between job resources and job challenges, both of which have a positive effect on well-being, then, is that job challenges use energy, while job resources rather provide energy. In previous studies, this has meant that while both are positively related to well-being, only job resources are negatively related to ill-being. It is impossible for the present study to confirm this difference, as both job resources and job challenges were linked to basic need satisfaction and not directly to outcomes of well-being and ill-being, the latter which was not included in the research model at all. The results did show, however, that job resources had a stronger and more significant relation with basic need satisfaction, than job challenges. This could be an indication of the double-positive effect of job resources, supporting the division into three dimensions of job characteristics.

On the other hand, the results of the analysis did not fully support the goal content mini-theory within the self-determination theory framework. The theory states that intrinsic aspirations are positively related to basic need satisfaction, and hence autonomous motivation and well-being, while extrinsic aspirations may have a negatively related to the same things. The findings,

however, showed that extrinsic aspirations were positively related to basic need satisfaction, which is in direct contrast with the theory. The theory does, however, mention the idea that the reason for pursuing a goal may play a role, regardless of the goal content (Deci & Ryan, 2000). This could mean that entrepreneurs in general have more autonomous reasons for the pursuit of extrinsic goals, than others. However, surprisingly a regression from the aspirations to relative autonomous motivation showed that the extrinsic aspirations were, in fact, negatively related to. While this is in line with the theory, it should not be possible for any variable to be positively related to basic need satisfaction, while negatively related to relative autonomous motivation, given how they are positively related themselves. While it is outside of the scope of this thesis, a path analysis might have provided some insight, as to where the present data would suggest that extrinsic aspirations belong in the model.

5.2. Practical implications

The results of the analysis and, hence, the findings in this thesis also offer some practical implications. These are basically the answers to the research question and, hence, the problem statement. By shedding light on which factors in the job and life as an entrepreneur support and thwart basic need satisfaction, and hence influence autonomous motivation and, in turn, well-being, the study provides some implications for individual entrepreneurs, and society as a whole.

In line with the theoretical implication related to job challenges, the notion that energy-draining challenges are not negative, but rather positive is important. Being busy and working on a lot of different tasks, demanding concentration, actually seems to satisfy the basic psychological needs and, hence, provide autonomous motivation. This is not only related to well-being, as seen in the present study, but has also previously been linked to performance, as mentioned earlier. As such, the strain of a high workload and difficult tasks should not be feared, but rather approached. Keeping busy and engaged, as an entrepreneur, is apparently a good thing, not only for oneself, but for the company too, it would seem. All this, of course, is given that the higher workload does not mean, that too much time will be spent working. This could create work/home inference, which is a job hindrance, and thus negatively relates to basic need satisfaction.

While not analyzed specifically in this thesis, the correlations showed that work/home inference correlates negatively with social support at home. A preliminary and superficial analysis supported this correlation, indicating that social support at home could be a moderator for the negative relation between work/home inference and basic need satisfaction. This suggests that a supportive partner, family, or friends will diminish the negative effect of work/home inference, and potentially other job hindrances. As such, it would seem that if entrepreneurs have someone in their life to rely on for support, it would aid not only their well-being, but also the performance of the venture. This is significant, and shows that entrepreneurs should definitely not isolate themselves in their pursuit of success. If a society or community wanted to aid entrepreneurs and incentivize new business ventures, offering support and advice would seem a plausible possibility. Business incubators, accelerators, venture capitalists, or even local governments could offer psychologists and advisors, to be used not only for business, but for life in general as well.

The other job hindrance, worry, also negatively relates to basic need satisfaction. While everybody can have worries, it is more common in some groups than others. Entrepreneurial research often operates with the notion of necessity-driven entrepreneurs, as opposed to opportunity-driven entrepreneurs. As the names indicate, the first type is driven into entrepreneurship by necessity, while it is an active choice based on an opportunity for the second type. While the present study does not look at this, logic would indicate that necessity-driven entrepreneurs have more to worry about than opportunity-driven, given that they have been forced into entrepreneurship. The word necessity in itself indicates that their venture is essential for their life, something which is most likely the cause of a lot of worry. As such, it could be expected to find lower degrees of basic need satisfaction, and hence motivation and well-being in necessity-driven entrepreneurs on general. The Global Entrepreneurship Monitor report on which this thesis is based, actually found well-being to be lower in necessity-driven entrepreneurs, than in opportunity-driven ones, even within the same societies (Amorós & Bosma, 2014). There can obviously be other reasons for this, but it is an interesting possible explanation. This is another area where the community or society can aid the entrepreneurs. The presence of a safety-net could ease the financial worries of entrepreneurs, as failure would not necessarily result in empty stomachs. Providing this kind of safety-net,

whether in terms of unemployment benefits or accessible healthcare, could as such improve basic need satisfaction in entrepreneurs, leading to not only higher well-being, but also to higher performance, something which benefits the entire economy.

5.3. Limitations

The findings of a given study are only as strong as the methodology it is based on, and the present study is no exception. The choices made in regards to methodology will have pros and cons, and this subchapter will try to discuss some of the limitations of the present study, which should be kept in mind when interpreting the results.

The basis of the study was the research from the Global Entrepreneurship Monitor, stating that entrepreneurs show very high degrees of well-being. The present study has explained some of the factors and processes which might cause this, but it was done only within the population of entrepreneurs. A comparative study of entrepreneurs and regular employees would have allowed for conclusions on whether entrepreneurs in fact experience higher degrees of these contextual factors, in the form of positive job characteristics, than the regular employees do. This would have strengthened the notion that the job characteristics are the cause of the relatively higher well-being seen in entrepreneurs. This present study was not constructed as a comparative study, as that would require a lot more respondents and thorough analysis. Instead, it was deemed sensible to only include entrepreneurs and examine the hypothesized relations on them.

The concept of generalizability is always relevant when discussing the limitations of a study. The present study limited the population to Scandinavians, Americans and Canadians, but it can be argued that these are not representative for the entirety of the innovation-driven countries, and as such, the conclusions of this study might not be generalizable to those other countries. There can be made arguments both for and against the potential for generalizability of the present study outside the population, but for entrepreneurs within the population, especially those in Scandinavia, the findings should be representative.

Another limitation of the overall research design can be credited to the scope and timeframe of the thesis. The fact that the study was cross-sectional, as opposed to longitudinal, meant that it is harder to prove causal effects. In a longitudinal design, it is possible to see how the various variables change over time relative to each other, allowing for conclusions of temporal precedence, that is, does the cause indeed happen before the effect. A cross-sectional design does not allow for this. However, as the hypotheses of the study were based on well-established theories, which have previously proven causality, there is a basis for claiming causality, even though it is not empirically proven in the present study. Another issue with the cross-sectional design is the conclusions on mediators. Some researchers suggest that mediation, like causality, can only be proven in longitudinal designs, as mediation does in fact consist of causal processes (Maxwell & Cole, 2007).

Finally, the use of compound variables, such as using a single variable for job resources or basic need satisfaction, has put limitations on the level of detail of the study. The use of compound variables was due to the small number of respondents, relative to the complexity of the research model without compound variables. Combining the variables simplified the research model, which ensured reliability in the analysis of the general relations. Not using compound variables would have allowed for more in-depth analysis on how the individual job characteristics relate to the individual basic psychological needs, for example. Such insight could have proven valuable, but it was a deliberate decision to use compound variables, as reliability of the conclusions on the general relations was deemed more important.

5.4. Future research

The present study has been useful by explaining the processes relating to well-being in entrepreneurs, contributing to the body of research within self-determination theory, as well as the various implications already discussed in this chapter. There are, however, still several interesting directions for future research.

In order to confirm the findings of the present study, a larger study would be interesting. Testing the hypotheses in a longitudinal research design would allow for more concluding analyses of causality. Adding a comparative element to this longitudinal study would provide information on whether entrepreneurs do in fact experience higher degrees of job resources than regular employees. Additionally, it would potentially add to the research suggesting higher well-being in entrepreneurs. Such a study would go a long way to confirm the processes investigated in the present study, and the whole idea behind.

The single area in the present study where the findings did not match the theory was for extrinsic aspirations. More empirical research is needed on aspirations and their relation with basic need satisfaction, motivation and well-being. Research in this area could include not only the valued importance of the various aspirations, as in the present study, but also the attainment of the aspirations. The goal content mini-theory has very promising utility and could prove very interesting, but more empirical research is needed to completely understand the processes involved.

Building on the present study, it would be very interesting to add a measure of performance and entrepreneurial success. This would allow researchers to analyze the relation between the satisfaction of the basic psychological needs and more economic outcomes, as opposed to the personal well-being investigated in this thesis. The relations have already been investigated in other contexts, but confirming that they hold true in an entrepreneurial setting would be useful. Establishing that the context plays a major role in both the well-being, but also the performance of an entrepreneur, would allow for more theories and research on how to best shape the entrepreneurial context. Additionally, some of the characteristics of the job as an entrepreneur might be possible to replicate in a regular work setting, if it is shown that these characteristics improve both well-being and performance.

Given that the role of social support at home, or outside of the workplace, was only barely scratched in this thesis, it would be interesting to see further research on this topic. As explained in the subchapter on implications, it seems that social support at home moderates the negative

relation between some job hindrances and basic need satisfaction. It would be interesting to see a more thorough analysis of these processes, and whether it matters if the support is from a partner, family member, friend, or acquaintance.

This discussion shows that there are several directions that future research can take, in order to contribute to the research on entrepreneurs, using self-determination theory. Those presented are probably just a fraction of the interesting and useful things to look at, but they can hopefully contribute to inspire.

6.0. Conclusion

This thesis has looked at various factors in the job of an entrepreneur and uncovered the relation these have to well-being. This was done through the framework of self-determination theory, in an effort to answer the following problem statement:

- How can characteristics linked to the job as an entrepreneur explain well-being through a self-determination theory perspective?

The problem statement was then studied through the three following research questions.

- What role will job characteristics play in determining well-being among entrepreneurs?
- What role will personal aspirations play in determining well-being among entrepreneurs?
- How can the concepts of basic need satisfaction and work motivation be used to explain these relations?

It has been clearly shown that the context of the entrepreneur, measured through various job characteristics by using the job demands-resources model, relates to the experienced degree of well-being. This has been explained through the process model of self-determination theory, where various job characteristics are either positively or negatively related to the satisfaction of the basic psychological needs. The satisfaction of the basic psychological needs, in turn, was found to be positively related to the level of relative autonomous motivation in the individual, which has finally shown to relate to well-being. Like the job characteristics, the personal aspirations of an individual also relate to the satisfaction of the basic needs, and hence the entire process. The findings on aspirations were somewhat in conflict with the theory, as the extrinsic aspirations showed a positive effect, as opposed to the expected negative one.

The present study has shown that entrepreneurs should be aware of their context, as it shows a clear relation to their well-being. In addition, communities and societies can use these processes to incentivize entrepreneurial ventures, benefiting the economy.

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Appendix 1 – Questionnaire



Hi. I am studying for a Master's degree in economics and business administration at Copenhagen Business School, with a specialization in innovation, business development, and entrepreneurship. I am currently working on my Master's thesis, which has the overall theme of motivation and well-being among entrepreneurs. In order to obtain the data needed for the study, I have made this questionnaire. Participation is of course voluntary, but I would highly appreciate you taking the time to answer it, as your answers would be very important to the study.

The questionnaire is divided into seven parts, which all have instructions for answering. It is very important that the answers are based on your own, honest opinions. Given the varying nature of entrepreneurs and ventures, the exact wording of the text may not seem fitting to your personal situation. For example, the words "my job" or "my work", will refer to your entrepreneurial venture, no matter if you have another job or not. The questions should be fairly straightforward though, so please do try to answer as accurate as possible. Some of the questions may also seem out of place or irrelevant, but I guarantee that all questions have a purpose in the study, which is why it is crucial that all questions are answered. Answering the questionnaire should take around 10-15 minutes.

I guarantee that all answers will be treated confidentially and that no answers will be used or published individually, only as part of the total group of respondents. If you are interested in the final thesis, please feel free to contact me.

Thank you for participating!

Claus Frølund

Email: [REDACTED]

Part I – Job characteristics

The first part of this questionnaire will contain a series of statements regarding various characteristics of your job tasks and general work situation. Please indicate how these statements correspond with your situation, using the following scale:

1 2 3 4 5 6 7
 Strongly disagree Neutral Strongly agree

	1	2	3	4	5	6	7
1. I can determine the order of my tasks	€	€	€	€	€	€	€
2. I can increase or decrease my workload	€	€	€	€	€	€	€
3. I can choose my own work goals	€	€	€	€	€	€	€
4. I can take a break when I want	€	€	€	€	€	€	€
5. I can choose the way in which the work is carried out	€	€	€	€	€	€	€
6. I can leave my working space when I want	€	€	€	€	€	€	€
7. I can determine which task I do	€	€	€	€	€	€	€
8. I can decide myself how much work I do within a particular period of time	€	€	€	€	€	€	€
9. I can determine my own working hours	€	€	€	€	€	€	€
10. My work requires me to be creative	€	€	€	€	€	€	€
11. My work offers me the possibilities to extend my skills	€	€	€	€	€	€	€
12. My work allows me to learn new things	€	€	€	€	€	€	€
13. My work allows me to show my capacities	€	€	€	€	€	€	€
14. I have a lot of work to do	€	€	€	€	€	€	€
15. Often I have to work extra hard to get things done	€	€	€	€	€	€	€
16. I have to work fast	€	€	€	€	€	€	€
17. My work demands a lot of concentration	€	€	€	€	€	€	€
18. I have to work with a lot of precision	€	€	€	€	€	€	€

19. I have to be attentive to many things at the same time	€	€	€	€	€	€	€
20. My work requires continual thought	€	€	€	€	€	€	€
21. I have to give continuous attention to my work	€	€	€	€	€	€	€
22. I have to remember many things in my work	€	€	€	€	€	€	€
23. My work requires a great deal of carefulness	€	€	€	€	€	€	€
24. I have difficulty completing my other obligations because I keep on thinking about my job	€	€	€	€	€	€	€
25. My work schedule makes it difficult for me to fulfill my domestic obligations	€	€	€	€	€	€	€
26. I have so much work to do I don't have time for my hobbies	€	€	€	€	€	€	€
27. The requirements of my job make it difficult to feel relaxed at home	€	€	€	€	€	€	€
28. I worry about my personal financial situation	€	€	€	€	€	€	€
29. I worry about my venture failing	€	€	€	€	€	€	€
30. I worry about decisions I have to make at work	€	€	€	€	€	€	€
31. I worry about my responsibility for the venture	€	€	€	€	€	€	€

Part 2 – Social support

This part will first present a series of questions regarding social support at work, and then a series of identical questions about social support in life in general will follow. Please indicate how these statements correspond with your situation, using the following scale:

1 2 3 4 5 6 7
 Strongly disagree Neutral Strongly agree

	At work...	1	2	3	4	5	6	7
1. I have someone I can count on to listen to me when I need		€	€	€	€	€	€	€

Part 4 – Basic need satisfaction

The following statements regard your personal situation at your job. Please indicate how these statements correspond with your situation, using the following scale:

1 2 3 4 5 6 7
Strongly disagree Neutral Strongly agree

	1	2	3	4	5	6	7
1. I feel like I can be myself at my job	€	€	€	€	€	€	€
2. At work, I often feel like I have to follow other people's commands	€	€	€	€	€	€	€
3. If I could choose, I would do things at work differently	€	€	€	€	€	€	€
4. The tasks I have to do at work are in line with what I really want to do	€	€	€	€	€	€	€
5. I feel free to do my job the way I think it could best be done	€	€	€	€	€	€	€
6. In my job, I feel forced to do things I do not want to do	€	€	€	€	€	€	€
7. I do not really feel competent in my job	€	€	€	€	€	€	€
8. I really master my tasks at my job	€	€	€	€	€	€	€
9. I feel competent at my job	€	€	€	€	€	€	€
10. I doubt whether I am able to execute my job properly	€	€	€	€	€	€	€
11. I am good at things I do in my job	€	€	€	€	€	€	€
12. I have a feeling that I can accomplish even the most difficult tasks in my work	€	€	€	€	€	€	€
13. I do not really feel connected with other people at my job	€	€	€	€	€	€	€
14. At work, I feel part of a group	€	€	€	€	€	€	€
15. I do not really mix with other people at my job	€	€	€	€	€	€	€
16. At work, I can talk with people about things that really matter to me	€	€	€	€	€	€	€
17. I often feel alone when I am with my colleagues	€	€	€	€	€	€	€
18. Some people I work with are close friends of mine	€	€	€	€	€	€	€

15. Because it has been incorporated as my particular goal at work	€	€	€	€	€	€	€
16. Because it has become a natural habit to me	€	€	€	€	€	€	€
17. Because it has become a natural part of my life	€	€	€	€	€	€	€
18. Because I have fun doing my job.	€	€	€	€	€	€	€
19. Because what I do in my work is exciting.	€	€	€	€	€	€	€
20. Because the work I do is interesting.	€	€	€	€	€	€	€
21. I don't, because I really feel that I'm wasting my time at work	€	€	€	€	€	€	€
22. I do little because I don't think this work is worth putting efforts into.	€	€	€	€	€	€	€
23. I don't know why I'm doing this job, it's pointless work.	€	€	€	€	€	€	€

Part 6 – Well-being

This part looks at your general well-being, happiness, and satisfaction with your current situation. Please indicate how the statements below correspond with your situation, using the following scale:

1 2 3 4 5 6 7
 Strongly disagree Neutral Strongly agree

	1	2	3	4	5	6	7
1. I feel alive and vital	€	€	€	€	€	€	€
2. Sometimes I feel so alive I just want to burst	€	€	€	€	€	€	€
3. I have energy and spirit	€	€	€	€	€	€	€
4. I look forward to each new day	€	€	€	€	€	€	€
5. I nearly always feel alert and awake	€	€	€	€	€	€	€
6. I feel energized	€	€	€	€	€	€	€
7. In most ways my life is close to my ideal	€	€	€	€	€	€	€

8. The conditions of my life are excellent	€	€	€	€	€	€	€
9. I am satisfied with my life	€	€	€	€	€	€	€
10. So far I have gotten the important things I want in life	€	€	€	€	€	€	€
11. If I could live my life over, I would change almost nothing	€	€	€	€	€	€	€
12. I am generally very satisfied with my job	€	€	€	€	€	€	€
13. I am generally content with the type of work I do in my job	€	€	€	€	€	€	€
14. I generally feel active	€	€	€	€	€	€	€
15. I generally feel alert	€	€	€	€	€	€	€
16. I generally feel attentive	€	€	€	€	€	€	€
17. I generally feel determined	€	€	€	€	€	€	€
18. I generally feel inspired	€	€	€	€	€	€	€
19. I generally feel afraid	€	€	€	€	€	€	€
20. I generally feel ashamed	€	€	€	€	€	€	€
21. I generally feel hostile	€	€	€	€	€	€	€
22. I generally feel nervous	€	€	€	€	€	€	€
23. I generally feel upset	€	€	€	€	€	€	€

Part 7 – Demographics

This last part contains questions about you and your entrepreneurial venture. The intended use of these questions is not to identify individuals, but to demographically map the respondents, which is central to the study. I would like to remind you that these answers will remain confidential. For categorized answers, please choose the answer that best corresponds with your personal situation. For open answers, please answer to the best of your knowledge, in the units indicated in each question. Please remember to click ‘Next’ and then ‘Finish’ after answering all questions.

1. What is your gender?

Male

Female

2. What is your age, in years?

Answer: _____

3. What is your nationality?

Danish

Swedish

Norwegian

Finnish

Other _____

4. What is your current marital status?

Unmarried

Partner

Married

Divorced

Widowed

5. What is your highest attained level of education?

Primary school

Secondary school

Bachelor or equivalent

Master or equivalent

Doctoral or equivalent

6. Disregarding your current venture, do you have any previous entrepreneurial experience? yes no If yes, how many years? _____

7. What is your total yearly income in Euro, after taxes, including fixed salary, variable salary and bonus?

Answer: _____

8. How do you consider your overall health?

- € Very poor
- € Somewhat poor
- € Average
- € Somewhat good
- € Very good

9. What industry does your entrepreneurial venture operate in?

- € Technology
- € Telecommunications
- € Financials
- € Consumer Goods
- € Consumer Services
- € Health Care
- € Basic Materials
- € Industrials
- € Oils & Gas
- € Utilities

11. What is the age of your entrepreneurial venture in years?

Answer: _____

12. How many employees does your entrepreneurial venture employ, excluding yourself?

Answer: _____

13. What is the annual turnover of your entrepreneurial venture in Euro?

Answer: _____

Thank you very much for taking the time to answer this questionnaire! Your answers are very important to the study. Please remember to click 'Finish' below.

Appendix 2 – Normal distribution

	N	Mean	Std. Deviation	Variance	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis	Minimum	Maximum
	Valid									
AUT1	160	5.95	1.164	1.356	-1.378	.192	2.272	.381	1	7
AUT2	160	5.19	1.584	2.509	-.852	.192	-.075	.381	1	7
AUT3	160	5.89	1.298	1.685	-1.587	.192	2.609	.381	1	7
AUT4	160	5.73	1.458	2.125	-1.496	.192	2.020	.381	1	7
AUT5	160	6.11	.984	.968	-1.111	.192	1.310	.381	2	7
AUT6	160	5.87	1.360	1.851	-1.490	.192	2.079	.381	1	7
AUT7	160	5.48	1.360	1.849	-.819	.192	.421	.381	1	7
AUT8	160	5.29	1.456	2.121	-.735	.192	-.226	.381	2	7
AUT9	160	5.71	1.366	1.867	-1.234	.192	1.309	.381	1	7
COMP1	160	6.21	1.088	1.184	-1.547	.192	2.298	.381	2	7
COMP2	160	6.24	1.074	1.154	-1.703	.192	3.799	.381	1	7
COMP3	160	6.38	.970	.940	-2.072	.192	6.041	.381	1	7
COMP4	160	6.08	1.093	1.195	-1.509	.192	3.075	.381	1	7
LOAD1	160	6.19	.979	.958	-1.159	.192	.880	.381	3	7
LOAD2	160	5.69	1.208	1.459	-.691	.192	-.184	.381	2	7
LOAD3	160	5.27	1.201	1.443	-.379	.192	-.274	.381	2	7
COG1	160	5.70	1.027	1.054	-.711	.192	.570	.381	2	7
COG2	160	5.15	1.342	1.801	-.483	.192	-.325	.381	2	7
COG3	160	6.06	1.071	1.148	-1.014	.192	.252	.381	3	7
COG4	160	5.98	.951	.905	-.793	.192	.202	.381	3	7
COG5	160	5.73	1.185	1.405	-1.115	.192	1.439	.381	1	7
COG6	160	5.83	1.145	1.311	-.835	.192	.030	.381	2	7
COG7	160	5.21	1.329	1.766	-.626	.192	-.243	.381	2	7
HOME1	160	4.03	1.750	3.062	-.063	.192	-1.027	.381	1	7
HOME2	160	3.89	1.773	3.144	.056	.192	-1.032	.381	1	7

HOME3	160	4.24	1.832	3.355	-.192	.192	-1.119	.381	1	7
HOME4	160	3.82	1.958	3.835	.069	.192	-1.303	.381	1	7
WORRY1	160	3.93	1.970	3.881	.071	.192	-1.180	.381	1	7
WORRY2	160	4.16	1.825	3.332	-.213	.192	-1.084	.381	1	7
WORRY3	160	3.86	1.757	3.088	.142	.192	-1.018	.381	1	7
WORRY4	160	4.22	1.797	3.229	-.215	.192	-.942	.381	1	7
SUPW1	160	5.04	1.778	3.162	-.692	.192	-.546	.381	1	7
SUPW2	160	4.88	1.685	2.840	-.647	.192	-.433	.381	1	7
SUPW3	160	4.79	1.683	2.831	-.520	.192	-.616	.381	1	7
SUPW4	160	4.49	1.839	3.384	-.245	.192	-1.031	.381	1	7
SUPW5	160	4.82	1.787	3.193	-.433	.192	-.821	.381	1	7
SUPW6	160	3.88	2.017	4.068	.053	.192	-1.256	.381	1	7
SUPW7	160	4.09	2.031	4.123	-.079	.192	-1.278	.381	1	7
SUPW8	160	4.43	1.793	3.215	-.291	.192	-.829	.381	1	7
SUPH1	160	5.98	1.274	1.622	-1.285	.192	.814	.381	2	7
SUPH2	160	5.36	1.596	2.547	-.846	.192	-.219	.381	1	7
SUPH3	160	5.45	1.577	2.488	-.920	.192	-.132	.381	1	7
SUPH4	160	5.76	1.564	2.446	-1.336	.192	.984	.381	1	7
SUPH5	160	5.41	1.702	2.897	-.911	.192	-.230	.381	1	7
SUPH6	160	5.67	1.647	2.713	-1.286	.192	.816	.381	1	7
SUPH7	160	5.74	1.559	2.431	-1.239	.192	.701	.381	1	7
SUPH8	160	5.42	1.654	2.735	-.818	.192	-.395	.381	1	7
IN_SA1	160	6.35	.841	.707	-1.381	.192	2.110	.381	3	7
IN_SA2	160	6.34	.823	.678	-1.316	.192	1.746	.381	3	7
IN_SA3	160	5.95	.976	.953	-.638	.192	-.391	.381	3	7
IN_SA4	160	6.21	.954	.911	-1.142	.192	.573	.381	3	7
IN_COM1	160	4.98	1.633	2.666	-.653	.192	-.273	.381	1	7
IN_COM2	160	5.46	1.326	1.760	-.688	.192	.068	.381	1	7
IN_COM3	160	5.61	1.323	1.750	-.893	.192	.495	.381	1	7
IN_COM4	160	5.73	1.191	1.418	-.981	.192	.811	.381	2	7
IN_COM5	160	5.43	1.381	1.906	-.684	.192	-.040	.381	1	7

EX_FIN1	160	3.35	1.664	2.770	.349	.192	-.680	.381	1	7
EX_FIN2	160	4.57	1.620	2.624	-.471	.192	-.374	.381	1	7
EX_FIN3	160	4.33	1.616	2.613	-.615	.192	-.266	.381	1	7
EX_FIN4	160	5.35	1.314	1.726	-.739	.192	.789	.381	1	7
EX_REC1	160	3.73	1.839	3.383	.093	.192	-.991	.381	1	7
EX_REC2	160	2.71	1.580	2.495	.737	.192	-.145	.381	1	7
EX_REC3	160	3.67	1.758	3.091	-.031	.192	-1.004	.381	1	7
EX_REC4	160	2.74	1.664	2.770	.630	.192	-.586	.381	1	7
EX_REC5	160	4.04	1.829	3.344	-.218	.192	-.993	.381	1	7
NA1	160	6.04	1.104	1.219	-1.495	.192	2.324	.381	2	7
NA2	160	5.63	1.278	1.632	-1.172	.192	1.504	.381	1	7
NA3	160	5.92	1.228	1.509	-1.451	.192	2.444	.381	1	7
NA4	160	5.58	1.399	1.957	-.924	.192	.107	.381	2	7
NA5	160	5.22	1.569	2.461	-.883	.192	.137	.381	1	7
NA6	160	4.94	1.776	3.153	-.464	.192	-.974	.381	1	7
NC1	160	5.51	1.082	1.170	-1.105	.192	1.878	.381	1	7
NC2	160	5.81	1.152	1.327	-1.488	.192	2.730	.381	1	7
NC3	160	6.03	.928	.861	-1.068	.192	1.148	.381	3	7
NC4	160	5.72	1.172	1.373	-1.287	.192	2.597	.381	1	7
NC5	160	5.35	1.579	2.493	-.885	.192	-.258	.381	1	7
NC6	160	6.03	1.271	1.615	-1.679	.192	2.467	.381	1	7
NR1	160	4.78	1.933	3.735	-.571	.192	-.835	.381	1	7
NR2	160	4.71	1.821	3.316	-.587	.192	-.685	.381	1	7
NR3	160	4.61	2.083	4.341	-.397	.192	-1.224	.381	1	7
NR4	160	5.31	1.641	2.692	-.676	.192	-.607	.381	1	7
NR5	160	5.59	1.510	2.282	-.979	.192	.170	.381	1	7
NR6	160	5.76	1.529	2.336	-1.100	.192	.080	.381	2	7
EXTRIN1	160	3.87	1.791	3.209	-.252	.192	-1.030	.381	1	7
EXTRIN2	160	3.80	1.655	2.740	-.350	.192	-.828	.381	1	7
EXTRIN3	160	2.71	1.695	2.873	.766	.192	-.443	.381	1	7
EXTRIN4	160	3.84	1.832	3.357	-.105	.192	-1.080	.381	1	7

EXTRIN5	160	3.29	1.869	3.492	.326	.192	-1.137	.381	1	7
EXTRIN6	160	3.31	2.016	4.065	.296	.192	-1.328	.381	1	7
INTRO1	160	4.94	1.953	3.814	-.741	.192	-.561	.381	1	7
INTRO2	160	5.52	1.578	2.490	-1.231	.192	.806	.381	1	7
INTRO3	160	3.74	1.947	3.789	.118	.192	-1.207	.381	1	7
INTRO4	160	4.18	1.970	3.881	-.152	.192	-1.247	.381	1	7
IDENT1	160	5.89	1.223	1.497	-1.640	.192	3.583	.381	1	7
IDENT2	160	5.92	1.203	1.446	-1.402	.192	2.156	.381	1	7
IDENT3	160	6.01	1.141	1.302	-1.427	.192	2.165	.381	2	7
INTEG1	160	4.36	1.753	3.074	-.353	.192	-.721	.381	1	7
INTEG2	160	4.08	1.951	3.806	-.163	.192	-1.193	.381	1	7
INTEG3	160	4.55	1.787	3.192	-.445	.192	-.779	.381	1	7
INTEG4	160	4.93	1.643	2.699	-.732	.192	-.185	.381	1	7
INTRIN1	160	5.86	1.079	1.163	-1.154	.192	1.836	.381	2	7
INTRIN2	160	6.04	1.140	1.300	-1.505	.192	2.747	.381	1	7
INTRIN3	160	6.14	1.061	1.126	-1.399	.192	2.045	.381	2	7
VITAL1	160	5.85	1.199	1.436	-1.171	.192	1.080	.381	2	7
VITAL2	160	4.69	1.679	2.818	-.507	.192	-.520	.381	1	7
VITAL3	160	5.51	1.293	1.673	-1.047	.192	.881	.381	2	7
VITAL4	160	5.52	1.298	1.685	-.775	.192	.087	.381	2	7
VITAL5	160	4.91	1.407	1.980	-.597	.192	.112	.381	1	7
VITAL6	160	5.11	1.298	1.685	-.683	.192	.105	.381	2	7
L_SAT1	160	4.80	1.553	2.413	-.660	.192	-.083	.381	1	7
L_SAT2	160	5.03	1.475	2.175	-.710	.192	-.148	.381	1	7
L_SAT3	160	5.36	1.353	1.830	-.808	.192	.092	.381	2	7
L_SAT4	160	5.18	1.400	1.961	-.662	.192	-.152	.381	1	7
L_SAT5	160	4.81	1.749	3.059	-.702	.192	-.456	.381	1	7
POS1	160	5.57	1.222	1.492	-1.157	.192	1.206	.381	2	7
POS2	160	5.45	1.253	1.570	-.769	.192	.260	.381	2	7
POS3	160	5.54	1.181	1.395	-.845	.192	.460	.381	2	7
POS4	160	5.78	1.233	1.521	-1.456	.192	3.021	.381	1	7

POS5	160	5.70	1.175	1.381	-1.209	.192	2.272	.381	1	7
NEG1	160	2.46	1.601	2.565	1.148	.192	.451	.381	1	7
NEG2	160	1.76	1.200	1.440	2.017	.192	4.148	.381	1	7
NEG3	160	1.69	1.023	1.046	1.838	.192	3.677	.381	1	6
NEG4	160	2.53	1.488	2.213	.809	.192	-.316	.381	1	7
NEG5	160	2.17	1.309	1.713	1.233	.192	1.154	.381	1	7
GENDER	157	1.21	.409	.167	1.436	.194	.064	.385	1	2
AGE	157	39.82	10.903	118.878	.391	.194	-.396	.385	21	73
NATION	157	2.10	1.241	1.541	.965	.194	.115	.385	1	5
STATUS	157	2.59	.892	.795	-.016	.194	.773	.385	1	5
EDUCAT	157	3.61	.860	.739	-.321	.194	-.203	.385	1	5
EXP	157	1.45	.499	.249	.194	.194	-1.988	.385	1	2
EXP_YR	86	6.99	5.407	29.235	1.066	.260	.615	.514	1	24
INCOME	144	56695.44	78998.377	#####	5.387	.202	42.075	.401	0	750000
HEALTH	157	4.17	.921	.848	-1.097	.194	.941	.385	1	5
INDUST	157	2.92	2.499	6.243	.914	.194	-.412	.385	1	10
AGE_VEN	151	4.19	3.847	14.796	2.117	.197	5.043	.392	0	20
EMPLOYEE	155	6.04	13.292	176.674	7.255	.195	68.002	.387	0	140
TURNOVER	139	514949.38	#####	#####	6.278	.206	43.756	.408	0	1400000

Appendix 3 – Reliability

Variable	Cronbach's Alpha	Number of indicators
AUT	.888	9
COMP	.868	4
LOAD	.744	3
COG	.847	7
HOME	.906	4
WORRY	.819	4
SUPW	.940	8
IN_SA	.721	4
IN_COM	.885	5
EX_FIN	.690	3
EX_REC	.904	5
NA	.760	3
NC	.836	4
NR	.765	3
EXTRIN	.766	6
INTRO	.768	4
IDENT	.859	3
INTEG	.898	4
INTRIN	.933	3
VITAL	.896	6
L_SAT	.830	5
POS	.845	5
NEG	.831	5

Appendix 4 – List of variables, dimensions, and indicators

Variable	Dimension	Indicator
Job Resources	Task Autonomy	AUT1 AUT2 AUT3 AUT4 AUT5 AUT6 AUT7 AUT8 AUT9
	Skill Utilization	COMP1 COMP2 COMP3 COMP4
	Social Support at Work	SUPW1 SUPW2 SUPW3 SUPW4 SUPW5 SUPW6 SUPW7 SUPW8
Job Challenges	Workload	LOAD1 LOAD2 LOAD3
	Cognitive Demands	COG1 COG2 COG3 COG4 COG5 COG6 COG7

Variable	Dimension	Indicator
Job Hindrances	Work/Home Inference	HOME1 HOME2 HOME3 HOME4
	Worry	WORRY1 WORRY2 WORRY3 WORRY4
Intrinsic Aspirations	Self- Acceptance	IN_SA1 IN_SA2 IN_SA3 IN_SA4
	Community Feeling	IN_COM1 IN_COM2 IN_COM3 IN_COM4 IN_COM5
Extrinsic Aspirations	Financial Success	EX_FIN1 EX_FIN2 EX_FIN4
	Social Recognition	EX_REC1 EX_REC2 EX_REC3 EX_REC4 EX_REC5

Variable	Dimension	Indicator
Basic Need Satisfaction	Autonomy Satisfaction	NA1 NA2 NA3
	Competence Satisfaction	NC1 NC2 NC3 NC4
	Relatedness Satisfaction	NR1 NR2 NR3
Relative Autonomy Orientation	Extrinsic Regulation	EXTRIN1 EXTRIN2 EXTRIN3 EXTRIN4 EXTRIN5 EXTRIN6
	Introjected Regulation	INTRO1 INTRO2 INTRO3 INTRO4
	Identified Regulation	IDENT1 IDENT2 IDENT3
	Intrinsic Regulation	INTRIN1 INTRIN2 INTRIN3

Variable	Dimension	Indicator
Subjective Well-Being	Life Satisfaction	L_SAT1 L_SAT2 L_SAT3 L_SAT4 L_SAT5
	Positive Affect	POS1 POS2 POS3 POS4 POS5
	Negative Affect	NEG1 NEG2 NEG3 NEG4 NEG5
	Vitality	VITAL1 VITAL2 VITAL3 VITAL4 VITAL5 VITAL6

Appendix 5 – Correlation matrix

	1	2	3	4	5	6	7	8	9
1. RESOURCE	-								
2. CHALLENG	.17*	-							
3. HINDRANC	-.16*	.32**	-						
4. ASP_IN	.31**	.16*	.07	-					
5. ASP_EX	.05	.25**	.07	.26**	-				
6. NS	.60**	.17*	-.24**	.34**	.25**	-			
7. RAI	.25**	.15	-.13	.15	-.18*	.42**	-		
8. VITAL	.49**	.23**	-.17*	.40**	.23**	.60**	.43**	-	
9. SWB	.37**	.08	-.33**	.29**	.03	.61**	.42**	.73**	-

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

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

Appendix 6 – Correlation matrix with control variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. RESOURCE	-																			
2. CHALLENG	.17*	-																		
3. HINDRANC	-.16*	.32**	-																	
4. ASP_IN	.31**	.16*	.07	-																
5. ASP_EX	.05	.25**	.07	.26**	-															
6. NS	.60**	.17*	-.24**	.34**	.25**	-														
7. RAI	.25**	.15	-.13	.15	-.18*	.42**	-													
8. VITAL	.49**	.23**	-.17*	.40**	.23**	.60**	.43**	-												
9. SWB	.37**	.08	-.33**	.29**	.03	.61**	.42**	.73**	-											
10. GENDER	.06	.01	-.02	.11	-.05	-.06	-.04	.10	.10	-										
11. AGE	-.13	.08	-.15	-.21**	.06	.00	.03	.14	.16*	-.01	-									
12. NATION	.20*	.10	.28**	.27**	.05	.06	-.01	.11	-.01	.11	-.26**	-								
13. STATUS	.02	-.03	-.13	-.15	.03	.10	.03	.24**	.27**	.01	.56**	-.09	-							
14. EDUCAT	-.19*	.02	-.16*	-.18*	-.02	-.02	.01	-.04	.05	-.09	.20*	-.29**	.16*	-						
15. EXP	-.15	-.15	.02	-.12	-.14	-.22**	-.16*	-.23**	-.18*	.19*	-.16*	.01	-.18*	.04	-					
16. INCOME	-.10	-.05	-.02	-.14	.09	-.01	-.07	-.01	.04	-.13	.11	-.19*	-.02	.12	-.16	-				
17. HEALTH	.11	-.19*	-.29**	.03	-.09	.15	.16*	.28**	.36**	.01	.07	.01	.05	.07	-.04	.06	-			
18. AGE_VEN	-.18*	.11	-.13	-.20*	.07	.06	.00	-.02	.03	-.12	.38**	-.12	.15	-.06	-.08	.12	-.07	-		
19. EMPLOYEE	-.04	.05	-.12	.03	.03	.13	.10	.12	.11	-.11	.06	-.11	.05	-.05	-.19*	.29**	-.02	.33**	-	
20. SUPH	.50**	.04	-.13	.33**	-.08	.38**	.06	.26**	.31**	.05	-.18*	.07	-.05	-.04	-.03	-.06	.07	-.13	.00	-

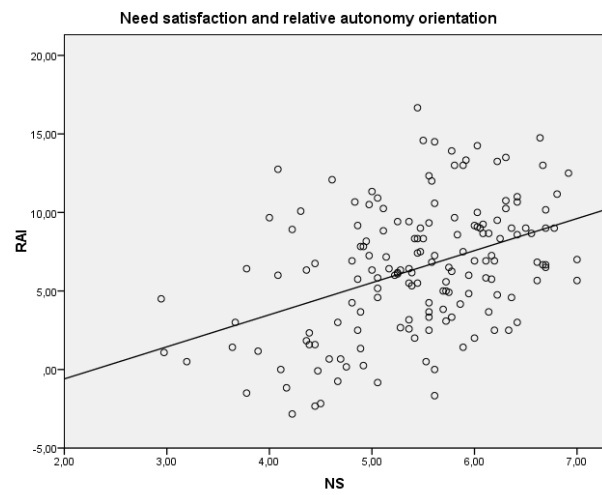
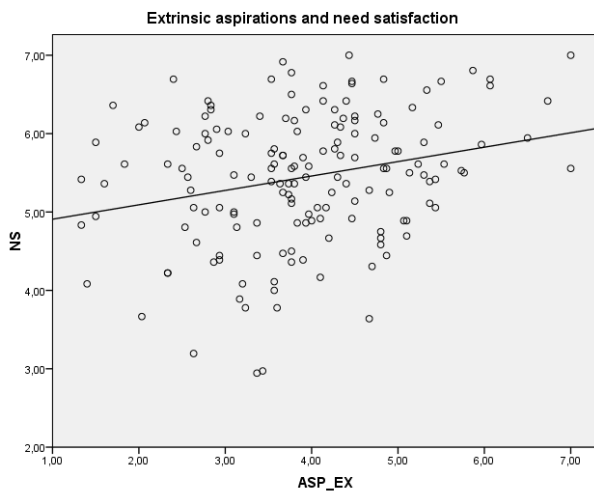
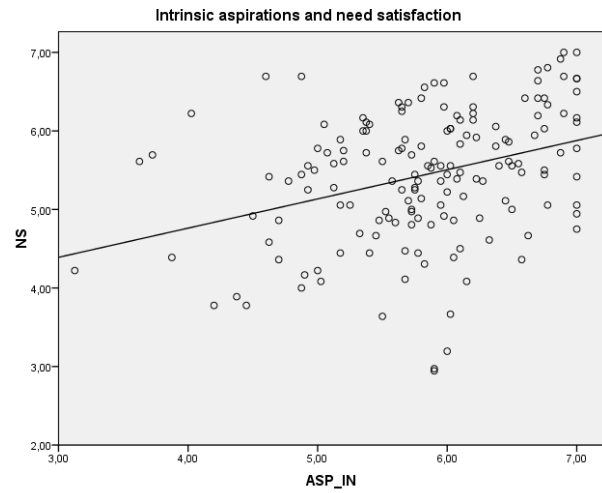
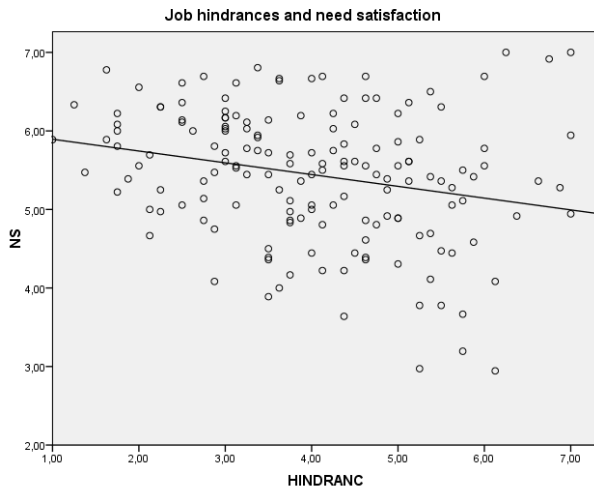
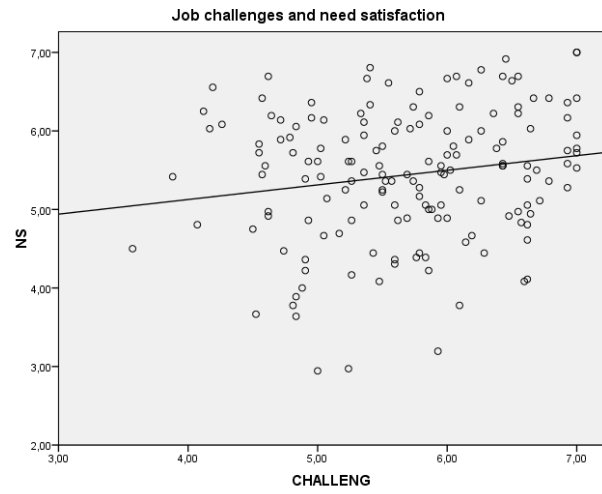
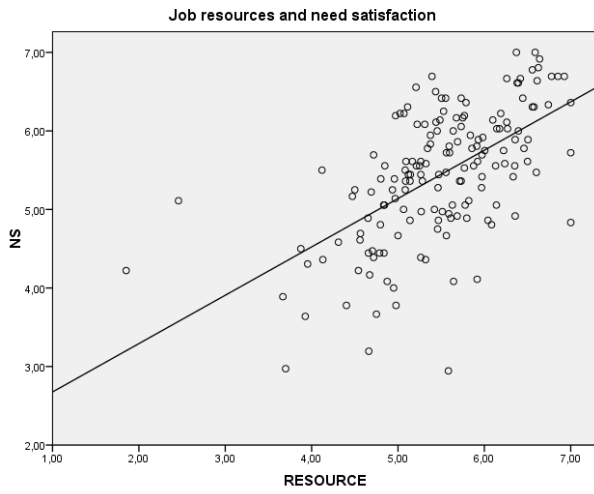
*. Correlation is significant at the 0.05 level (2-tailed).

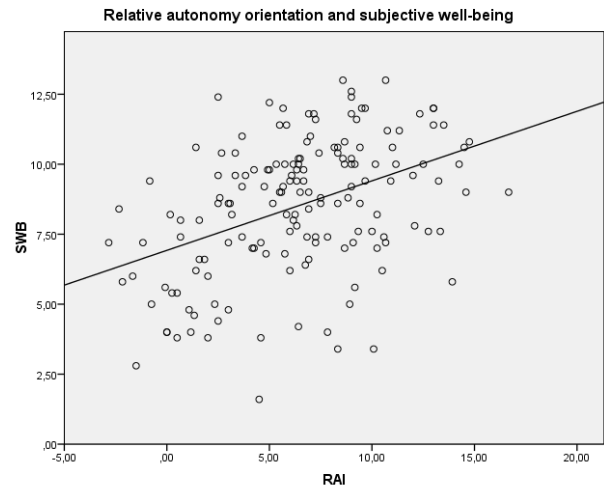
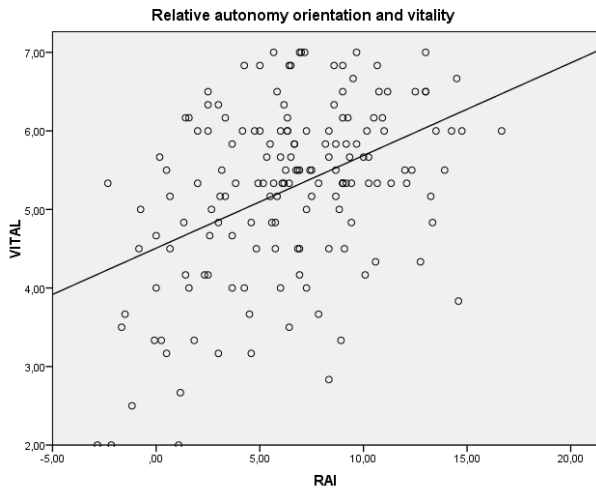
** Correlation is significant at the 0.01 level (2-tailed).

Appendix 7 – Normality

	N	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis
	Valid				
RESOURCE	160	-.883	.192	2.499	.381
CHALLENG	160	-.199	.192	-.678	.381
HINDRANC	160	.069	.192	-.587	.381
ASP_IN	160	-.657	.192	.556	.381
ASP_EX	160	.105	.192	.010	.381
NS	160	-.524	.192	.075	.381
RAI	160	-.037	.192	-.445	.381
VITAL	160	-.775	.192	.367	.381
SWB	160	-.466	.192	-.344	.381

Appendix 8 – Linearity and homoscedasticity





Appendix 9 – Multicollinearity

Coefficients ^a								
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics		
	B	Std. Error	Beta			Tolerance	VIF	
1	(Constant)	1.197	.529		2.261	.025		
	RESOURCE	.509	.067	.493	7.591	.000	.833	1.201
	CHALLENG	.101	.071	.095	1.432	.154	.803	1.246
	HINDRANC	-.135	.040	-.218	-3.371	.001	.841	1.189
	ASP_IN	.154	.071	.142	2.186	.030	.833	1.201
	ASP_EX	.133	.046	.184	2.915	.004	.886	1.129

a. Dependent Variable: NS

Collinearity Diagnostics ^a									
Model	Eigenvalue	Condition Index	Variance Proportions						
			(Constant)	RESOURCE	CHALLENG	HINDRANC	ASP_IN	ASP_EX	
1	1	5.816	1.000	.00	.00	.00	.00	.00	.00
	2	.091	7.999	.00	.01	.00	.72	.00	.12
	3	.060	9.845	.01	.05	.00	.05	.01	.80
	4	.014	20.108	.00	.03	.66	.10	.31	.00
	5	.012	22.108	.03	.84	.06	.12	.39	.07
	6	.007	29.661	.96	.07	.27	.00	.28	.01

a. Dependent Variable: NS