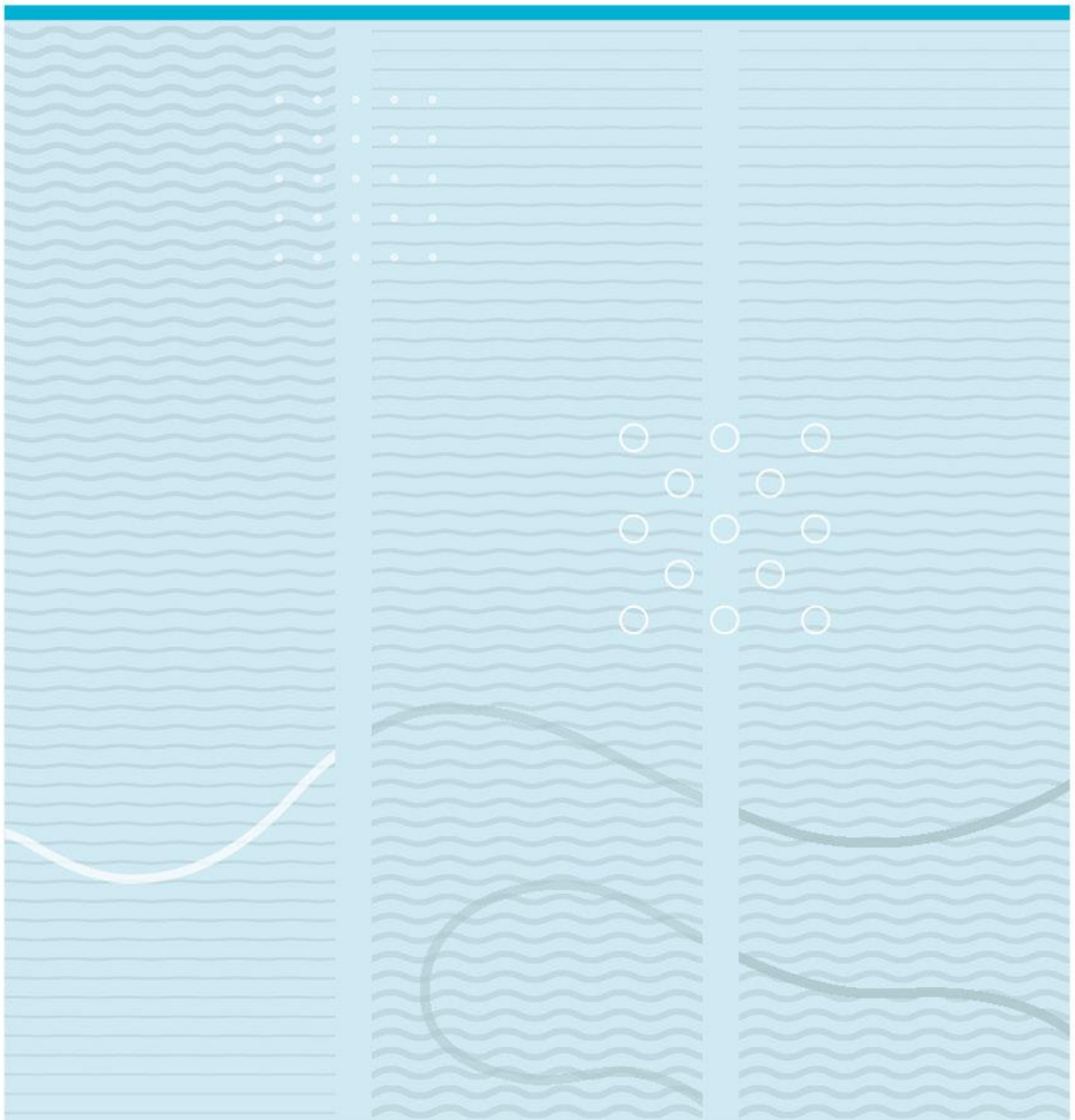


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# Motivation and rock climbing

A quantitative study examining differences in motivation among rock climbers in the light of Self-Determination Theory



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This thesis is worth 60 study points

## **Abstract**

This thesis was designed to investigate, in the light of Self-Determination Theory (Deci & Ryan, 2004), the differences in motivation between different climbing subgroups. Climbers were categorized by the preferred type of climbing (rope climbing or bouldering) and preferred climbing environment (outdoor or indoor). Three hundred and sixty-six questionnaires, with BREQ-3 questionnaire (Wilson et al., 2006) as a base, were collected among climbers in Norway.

The results demonstrated that environmental preference is a factor that influences the motivation of a climber. Outdoor subgroup was generally more intrinsically motivated, than the indoor subgroup, together with a higher level of self-regulated forms of the extrinsic motivation. The comparison of motivation between rope climbers and boulderers didn't show any significant difference. The findings supports also the conclusion that frequency of climbing activity is influenced by type of climbing, environment, intrinsic motivation, integrated regulation, identified regulation, years of climbing experience and membership in a climbing group.

The findings provide a guideline for understanding the motivation in the climbing world and can be applicable in designing new climbing venues and climbing events.

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# **1 Introduction**

In this chapter the aims of the thesis, objectives, background of the research, significance of the research and some important definitions will be presented. At the end of the chapter, a general structure of the paper will be disclosed.

## **1.1 Aims of the thesis**

With this research project, I aim to measure the motivations of rock climbers to participate in rock climbing, considering it being a leisure time activity and a lifestyle sport. The goal is to achieve knowledge on what are the determinants of regular participation in rock climbing and what is the relationship between preferable style of rock climbing and motivation type, centering the results in Self- Determination Theory (Deci & Ryan, 2000)

## **1.2 Motivations behind the research**

Rock climbing became notably popular in the past years. The Norges Klatreforbund counted only 2800 members in 1994 and 20500 in 2017 and the numbers are constantly growing (Kvande, 2017). This discipline evolved throughout the history and from outdoor activity such as mountaineering emerged into other sub-disciplines like sport climbing, bouldering, deep water solo etc. (Woollings, McKay, Emery, 2015; Hazelrigs & Kidd, 2009; Bell & Håkonsen, 2017). Nowadays climbing communities grow and establish indoor climbing venues, organize competitions and social events. Rock climbing was planned to be for the first time an event on the Summer Olympics 2020 (INTERNATIONAL OLYMPIC COMMITTEE, 2016). Because of the Covid- 19 pandemic, the Summer Olympics will be postponed most likely until Summer 2021 (Burgman, 2020). Climbing is considered an extreme sport and requires the knowledge of the climbing equipment, climbing techniques, great strength and flexibility. Some climbers devote their life to this activity, while some treat it as a fun, daily workout. Some remain involved in the climbing activity as long as their physical health will allow while some drop out after days or even years of climbing.

In my adolescence I tried indoor climbing a couple of times, yet I was not passionate enough about it to continue the practice. I remember that it required the strength that I didn't have and patience that was not my advantage either. When I moved to Norway in 2017, I tried outdoor climbing for the first time. I couldn't exactly explain why, but I wanted to come back to the crag and try again and again. After practicing for some time I became stronger and was able to climb harder routes. The more I climbed, the more joy and satisfaction was I getting. Starting to climb lead was a whole new dimension. I was discovering new qualities in myself and was learning about how to trust my partners, what to do to overcome the fear and that I can do much more when I believe in it and have a clear focus. It is interesting to me, that the same activity performed outdoor and indoor had such a different impact on my motivation. Of course, there might be also other factors, such as my age, that had impact on the motivation. However I still prefer to outdoor climb than indoor, and I feel it brings more meaning to the activity.

There was also something else that made me like climbing trips beside the activity itself. The closeness to nature, exposure, approach to the climbing spot, making fire at the crag, figuring out new beta with fellow climbers and whole days spent at a crag made the experience even more meaningful. There was never a term like "competition" in my climbing dictionary. It seems also like none of my fellow climbers do it to win something external. There is no price waiting for you at the end of the route, yet so many people do it. There must be something more to it, something that make you push even when your fingers are bleeding, your muscles shaking and your mind telling you it is a dangerous and irrational to undertake such an activity of your own will.

Besides my own experience a big inspiration to this research were also movies on climbing like "The Dawn Wall" or "Free solo", where climbers do unbelievable things that make one reflect on what is so captivating in such a seemingly pointless and dangerous activity.

I am curious to explore what are the motives behind choosing climbing as a leisure activity and what are the major differences between motivations of people who choose to boulder, rope climb and indoor or outdoor walls.

### **1.3 Objectives of the thesis**

Motivation in sports has been widely discussed under many different theoretical perspectives. Specifically in lifestyle sports it is argued that participants are driven by the risk factor

(Weber, 2001). Simultaneously many adventure sport participants declare their intrinsic motivations behind participation (Kiewa, 2002; Taylor, 2010). In addition some climbers can describe their experiences as ecstatic and as a spiritual experience, what explains the theory of flow (Csikszentmihalyi, 1990). In lifestyle sports, it is argued that the commercialization and what's associated with it- making the sport more accessible by creating indoor alternatives for sport such as climbing, was decreasing the level of participation (Salome & van Bottenburg, 2012). On the contrary, there has been recorded cases, in which, the interest for a lifestyle sport increased together with commercialization and higher attention of the medias to the sport (Edensor & Richards, 2007; Waitt, 2008; Wheaton, 2005). Nowadays, over a half of the climbing population climbs indoor (State of Climbing Record 2019). Investigating climbing as a lifestyle sport, it is interesting to look how it developed throughout the years. It partially moved to the indoor venues. Do such climbers still identify themselves as a part of the climbing community and a lifestyle sport practitioners? Palmer (2002) claims, that climbers who started their trainings indoor, even though they might have some knowledge about belaying and climbing equipment, are not necessarily prepared to climb outdoor and are not aware of the risks coming from their efforts on an outdoor rock face. Coming straight out from a climbing gym to the natural environment can result in fatal accidents. This contradictories make it interesting to research the motives to participate in climbing, among outdoor and indoor climbers, as well as other climbing subgroups that may differ in their motives.

To analyze the motivations of rock climbers and discover its association with the preferences of the climbers I intend to:

- Conduct a survey among rock climbers to solicit responses on the motivation of leisure time climbers, using Behavioral Regulation in Exercise Questionnaire (BREQ-3).
- Analyze the quantitative data using Microsoft Excel and SPSS (Statistical Package for the Social Sciences).
- Assess the relationship between motivation, style of climbing and preferable venue, grounding the data in Self- Determination Theory.



## **1.4 Research Questions**

The main focus of this research is to explore the motives of different climbing subgroups to participate in climbing. The motives to participate in a given activity may be different among different subgroups, and can change throughout the lifespan (de Francisco et.al., 2018).

It is important to understand people's motivation in order to increase their commitment towards physical activity and simultaneously, enhance their well-being. Knowing the determinants of regular participation will give us a tool for increasing the level of dedication and determination to the sport. Moreover, identifying the differences between climbers will help us better understand their identity with the lifestyle sport and their needs. The goal is to get a better apprehension of the climbing community and climbing as a lifestyle sport. From these focal points, the study puts forward the following research questions:

- What are the determinants of regular participation in rock climbing?
- What are the differences in motivations between boulderers and rope climbers?
- What are the differences in motivations between those who prefer to climb indoor and those who prefer to climb outdoor?
- What is the relationship between intrinsic motivation and regular climbing activity?

## **1.5 Significance of the research, justification of the study**

The popularity of rock climbing has been growing rapidly throughout the last decades. According to *State of Climbing Record 2019*, there are 9.7 millions (2 millions more, comparing to the previous year) of climbers in United States alone. The climbing industry was reported also a big improvement to the economy. Only in 2017 this discipline contributed with \$12,450,000,000 to the USA economy.

Indoor climbing walls made this sport much more available for both professional athletes and new beginners. Idea of indoor climbing is relatively new but grows in popularity. One of the first artificial climbing walls opened to public was built in Seattle in 1987 (Vertical World history, retrieved 04, 2020). The indoor climbers make nowadays 52 % of the whole climbing community in USA (State of Climbing Record, 2019). Regarding presented above statistics,

it is intriguing and seems logical to examine the motives of those who climb outdoor and those who choose to climb indoor, along with the differences in motivation among people who prefer bouldering from rope climbing.

Previous studies on motivation in climbing intended to gather information whether climbers were intrinsically motivated or there was any manifestation of extrinsic motivation (Gonzales, 2019; Lee , 2013; Lee and Ewert, 2019). There is however lack of research papers that would acknowledge the differences based on types of climbing, environment and preferred venue regarding recreational climbers. Moreover, the data on the relationship between regular participation and preferred environment and style of climbing are also limited.

This study will broaden the knowledge of leisure motivation and will provide information on the motives behind climbing and will aim to distinguish the differences between outdoor and indoor climbers and between boulderers and rope climbers. The findings will enable understanding the needs of climbers and their preferences, which can be useful in creating new climbing spaces and improve the existing ones. The gathered data will also help to design training guides and plans that will be beneficial to the level of motivation, persistence and enjoyment.

## **1.6 Definitions**

The most popular type of climbing nowadays is free climbing (the opposite of aid climbing), which means that no extra props are used to support the bodyweight of the climber, thus only the physical ability to ascend the rock is required. The climbing equipment is used only in order to avoid injuries in case of a fall. Free climbing is classified into diverse styles and they include: bouldering, top- rope climbing, traditional lead climbing and sport lead climbing (Hazelrigs & Kidd, 2009). In this research I will focus especially on bouldering and widely understood rope climbing. To fully embrace the research purpose and its findings, it is vital to understand the meaning of underlying phenomenon and expressions related to it. Below I will present short definitions of important for the research terms.

Bouldering- the name comes from an English word “boulder” which in a free translation means a large rock. Bouldering imply climbing on relatively low routes, so that a probable

fall would not consequence in an acute injury or death, thus the rope is not used in this style of climbing. Often crash pads (soft, foam mats) are used to cushion the fall and climbing partners usually stand behind the climber, ready to spot a fall (accompany the climber to secure landing) (Hazelrigs & Kidd, 2009; Bell & Håkonsen, 2017).

Rope climbing- this style encompasses all other styles that assumes the use of a rope and requires a partner who will belay the climber. To rope climbing belong:

- Top- rope Climbing- rope passes through an anchor above the climber, this style is considered the safest among all other rope climbing styles.
- Traditional Lead Climbing- climber installs himself all the gear required to ascend the route safely.
- Sport Lead Climbing- while ascending the route climber connects the rope to metal bolts preplaced in the rock (Hazelrigs & Kidd, 2009).

Leisure- Commonly leisure is defined as an autonomy regarding choice of activity, lack of pressure and free time after all obligatory tasks have been fulfilled. However, an absolute definition of leisure is difficult to obtain because of the cultural, social, economic and personal factors that influence the understanding of the phenomenon (Torkildsen, 2005). For the purpose of the following research I will adapt the definition of leisure as an occupation that a person chooses of his own free will in order to relax, entertain, educate, develop skills or take part in voluntary work without favor to any obligatory tasks (Dumazedier 1960 in Torkildsen, 2005).

Lifestyle Sport- Climbing can be classified as a lifestyle sport, often called also “alternative”, “extreme”, “post-industrial” and so on. This means that the activity is not considered mainstream in the western society. In many cases the idea of achievement doesn’t fit in the ideology of a lifestyle sport. The term lifestyle encloses the identity and socio-historical background that the sport emerged in and its socio-cultural importance. It is a sport that gives a social identity and defines ones’ life. (Wheaton, 2004). There is even a term “dirtbag” that defines a climber that sacrifices his life to climbing and traveling in order to practice in different locations (Rickly, 2012). In a recent study, the importance of lifestyle sport as a mean, which would increase the interest for participating in sports in natural environment, in a healthy and active way, was highlighted (King & Church, 2015).

## **1.7 Organization of the thesis**

This dissertation consists of 6 main chapters, where the introduction together with research problems has been already presented.

In chapter 2 theoretical background for the thesis, “Self Determination Theory” (Deci & Ryan, 2002) and related research papers are presented.

Chapter 3 discusses possible research methods and describes the chosen research method design (survey), where research instruments (BREQ-3) and statistical analysis methods are presented.

Chapter 4 shows the results with implication of descriptive and inferential statistics, produced with help of SPSS and Excel.

Chapter 5 discusses the results accordingly to the research problems and theoretical background. Afterwards, the conclusion over the overall work and collected results is given. There are suggested some future implications and directions in order to explore more in depth the research topic.

At the end there is a literature list and full questionnaire, as well as some tables that are relevant to the research results.

## 2 Theory

In this chapter I will introduce and justify the choice of theory for my research. Motivation is an ultimatum for a good performance and persistence. Many people struggle at some point with the motivation. There can be many reasons for the lack of motivation. Some of them are not obvious and sometimes even practitioners are unconscious of the rationale for low motivation. In order to avoid drop outs and keep the activity pleasurable and valuable, it is important to understand why climbers climb and specify their motives and needs.

Climbing is without a doubt an activity associated with risk. One could say that undergoing such activities voluntarily isn't sane. Nonetheless, there are many climbers who have a need for a thrill and feeling of mastery. The answer of the question, why climbers climb, could be approached from many angles. There is no ultimate answer to this question, however some theories came closer to the understanding of the motivation phenomena in sports and those are used most frequently in sport research.

The achievement goal theory was used previously to make a distinction between ego and task orientation among athletes. In both ego and task orientations the athlete may be seeking success or avoiding failure. This theory shows that ego oriented participants are prone to martial arts and generally aggressive sports, while task oriented participants have positive association with team sports. The most profitable for the performance is a balanced volume of task and ego orientation (Peters & Stefanek, 2011).

Self-efficacy Theory concerns a belief on an individual, that he or she is able to achieve a certain goal. Such a belief affects determination and perseverance, highly associated with motivation. Two people could have the same skill, but the one that has lower self-efficacy level will most likely perform worse, will persist less longer in the activity and will put less effort than the one with a high self-efficacy (Bandura, 1977).

Another theory widely used in sport contexts is Expectancy-value Theory, which claims that in order to be fully motivated, one needs to believe in his or hers competence and ability to succeed and secondly, needs to see a value in the performed activity (Eccles, 1983; Peters & Stefanek, 2011).

All these theories supply with a knowledge related to sports and motivation. Especially self-efficacy theory could give important insights in this research. Since climbing is a risk activity, the importance of self-confidence and belief in own abilities is crucial. However, in this research the aim is to compare levels of motivations between climbing subgroups and see

which one is more motivated. For this purpose I found the Self-Determination Theory most relevant. It gives an opportunity to measure the level of motivation with a high accuracy. Most of the times, the lifestyle sports and leisure time activities are done on voluntary basis, thus there should be a relatively high level of motivation. SDT is a convenient measure, that will allow us to note a difference on the level of extrinsic motivation and give a clear result on the differences between the climbing subgroups.

Because the aim is to assess the motivation levels in rock climbing among Norwegian climbers I chose to ground my research in the Self-Determination Theory.

The term motivation is widely used in research in the field of sports and leisure and the SDT was used previously in order to assess the levels of motivations among athletes and leisure time activity participants. The Self- Determination Theory focuses mostly on the intrinsic motivation and its importance in persistence in an activity.

## **2.1 Self-Determination Theory**

SDT is a theory established by Edward Deci and subsequently broadened with Richard Ryan (Miner, 2011, p.69). Instead of addressing the problem whether motivation is or is not present, authors direct attention to what kind of motivation is being manifested (Ryan, Deci, 2000). Their concept assumes that people are driven by two types of motivation: intrinsic and extrinsic. Intrinsic motivation applies to any action undertaken for its own sake, because it gives one enjoyment. On the contrary extrinsic motivation emerges from awaiting an outward reward or punishment. Thanks to acknowledging these types of motivation Ryan and Deci were able to elicit three intrinsic needs, that all human has, which are essential to self-motivation: competence, autonomy and relatedness.

SDT is a meta theory that consists of 5 mini theories: CET (Cognitive Evaluation Theory), OIT (Organismic Integration Theory), COT (Causality Orientations Theory), BPNT (Basic Psychological Need Theory) and GCT (Goal Contents Theory) (Vansteenkiste, Niemiec, Soenens, 2010). I will not describe those mini theories in detail considering that the complete SDT will be used as an overall support for this thesis.

Climbers can have many different reasons to climb. Those reasons we can divide into intrinsic and extrinsic. Even if in both cases the volume of motivation is comparable, according to Deci and Ryan dropouts are more likely if the motives for

undertaking an activity are extrinsic. In order to examine the differences in motivation among climbers with different preferences and relationship between their level of intrinsic motivation with persistence the Behavioral Regulation in Exercise Questionnaire-3 (BREQ-3) that draws on SDT will be used. SDT will give rationale for information about different kinds of motivation among climbers and will explain the persistence and regularity of climbing activity. Considering the research purpose, employing SDT in this study will be relevant and advantageous to achieve answer to the research question.

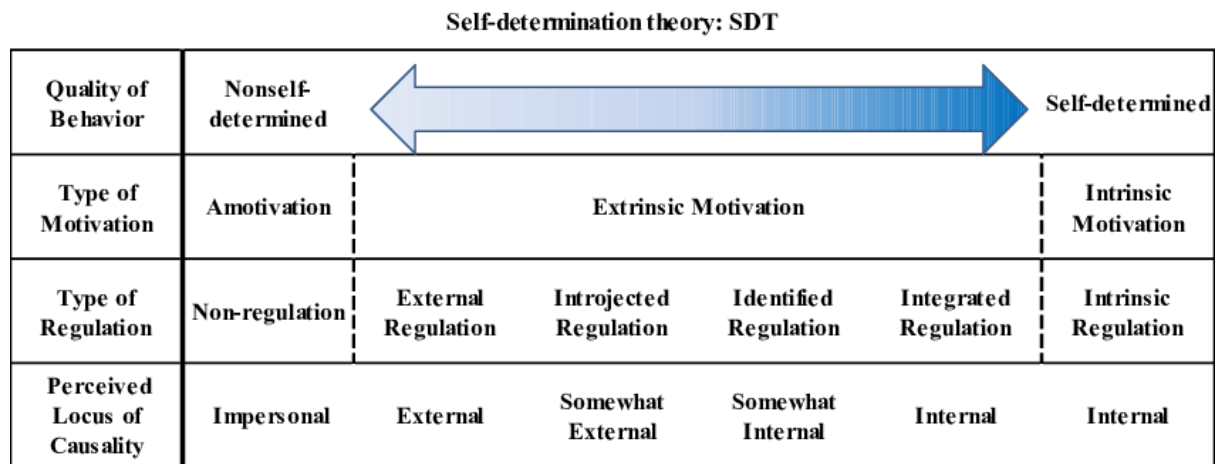


Figure 1 The self-determination continuum with types of motivation, types of regulation, and locus of causality. Retrieved from Agawa, Toshie & Takeuchi, Osamu (2016).

### 2.1.1 Forms of Motivation

According to SDT people are driven by different types of motivation. Deci and Ryan have grouped those types: intrinsic motivation, various types of extrinsic motivation and amotivation.

#### **Intrinsic motivation**

Humans from the early age are curious, playful, seeking challenges and are capable of undertaking an activity even when there is no reward awaiting (Harter, 1978). However, the environment and other external influences can perturb this inherent spontaneous interest. Originated on the grounds of this knowledge Deci and Ryan (2004) intend to seek for the supportive condition that will sustain this natural tendency.

The idea of intrinsic motivation (IM) specifies the conducts enacted out of pleasure, satisfaction and interest (Deci 1971., Deci & Ryan, 1985). According to Deci and Ryan (2004) nothing can appraise the capability of human being more than the intrinsic motivation, which is a proneness to pursue innovation and new calls to complete.

To really understand the whole concept of IM we need to look closer to the unitary IM construct, that has been endorsed by other scientists (Deci & Ryan, 2004). There has been unfolded a categorization that was assuming 3 segments of IM: *to know* (where the enjoyment arrives from acquiring knowledge, discovering and understanding new issues), *to accomplish* (here enjoyment derives from achieving a goal, creating something or doing the best that one ever has done at a given activity) and *to experience stimulation* (enjoyment is gained through exciting, sensory feelings that accompany the activity) (Deci & Ryan 2004). Embracing stated above information, conclusion may arise that an intrinsically motivated climber pursues climbing activity for the pure enjoyment of it. The motivation emerges from within of an individual and no external rewards (nor punishment for not undertaking the activity) are needed.

### **Extrinsic motivation**

Extrinsic motivation (EM) in contrast to IM is present when actions are tackled in order to gain an external reward or avoid punishment. EM has been classified into four categories by Deci & Ryan (2004). They also encompass self-determination and choice:

*External regulation-* is characterized by the lowest level of autonomy and internalization. In case where external regulation is present, actions are performed in order to gain a positive end status (e.g., to get a high grade at school) or to avoid a negative end status (e.g., to avoid staying at extra classes). This regulation lies on the bottom of the hierarchy of the self-determined external motivation.

*Introjected motivation-* it is the second type of the extrinsic motivation. It occurs when an individual starts to be aware of the reason for motivation, however in this case the individual doesn't accept it as his own choice. The decision comes out of the internal obligation to act in accordance with moral principles, to avoid guilt and seek



approval. For example, a climber could show up to a voluntary “cleaning day” at a boulder room because he thinks that it is a right thing to do and he treats it as a responsibility of everyone that uses the facility. In this way he avoids a bad conscience.

*Identified Regulation*- here the level of self-motivation is higher and is caused by the belief that this particular action is important and is consistent with values and goals of the individual. This regulation is considered a form accompanied by a high level of self-determination. It is followed by a sense of choice and an identification with the activity (Deci & Ryan, 2004). For example, a climber goes for a climbing session because he feels it is valuable for him and personally important.

*Integrated regulation*- is the most self-determined type of extrinsic motivation, which follows when an individual's action becomes a part of his identity. When integrated regulation is the drive power, a feeling of free will is present. Even though there are many similarities to the intrinsic motivation, integrated regulation is still considered external motivation because such actions are done in order to gain a separate outcome, not just for the sake of activity itself. In a climbing community some climbers resign from drinking alcohol in order to keep a good performance. Such a behavior is driven by integrated regulation, because beside of being coherent with some values it is also congruent with other self-structures (such as a need for a healthy lifestyle).

## **Amotivation**

Finally, amotivation lies at the very end to the left of the spectrum. A state of amotivation characterizes a total lack of motivation. Amotivated climbers don't see a meaning in climbing anymore, don't enjoy the activity, experience a feeling of helplessness and don't intend to obtain a specific result. Such factors will most likely result in a dropout. Here I would like to note that usually leisure time activity such as climbing, is performed with at least some level of intrinsic motivation, since it is in most cases a voluntary activity. It can happen that some parents put pressure on the kid to climb and it is only their decision that their child participate in climbing activity. In such case the climber is forced to undertake the activity, thus is not doing it with his own will (Deci & Ryan 2004).

### **2.1.2 Three basic psychological needs**

In SDT the concept of three psychological needs plays a big role and thus is featured in one of the mini theories (BPNT). What is a need and what is a difference between a need and a desire? According to Merriam-Webster online dictionary, a need is a *“physiological or psychological requirement for the well-being of an organism”* and desire is a *“conscious impulse toward something that promises enjoyment or satisfaction in its attainment”*. Analyzing presented above definitions, we can see that a need has a direct association with well-being. Consequently, satisfied needs give rise to health, prosperity and happiness. According to SDT all needs are universal to human beings, however there may be some differences caused by age, gender and culture (Deci & Ryan 2004). Understanding those three basic needs will help to establish an optimal environment for climbers and promote their growth and persistence.

#### **Competence**

According to Deci and Ryan *“Competence is the accumulated result of one’s interactions with the environment, of one’s exploration, learning and adaptation.”* (Deci & Ryan, 1985, p.26). The need for competence supports the drive power for constant growth. Mostly, people thrive when they can solve problems and face new challenges. As human beings we have a tendency to strive to master the tasks we meet in our surroundings. In this way we can experience constant development and progress. However, such challenges must be optimal for our abilities (Deci, 1975). Competence is not something gained thanks to regular practice and overcoming challenges, but it is rather a feeling of efficiency and mastery (Deci & Ryan, 2004).

In structured settings it is more likely to provide the feeling of competence, yet it does not necessarily enhance autonomy. It is because structure and autonomy support are unconnected, freestanding factors (Connell & Wellborn, 1991). Being a member of a local climbing group can be here considered as structure implemented to the climbing activity.

Feeling of competence will not improve the intrinsic motivation if not supplemented by the feeling of autonomy due to the fact that some behaviors can be done with a great level of competence and yet the external control (rewards, punishment, etc.) will eliminate the intrinsic motivation (Deci & Ryan, 2000; Deci & Ryan 1985). A climbing group can be considered as an organization that has some structures, like for example: board members, organized events, mandatory tuition etc. At the same time, it is quite informal, and it gives freedom of choice in many different dimensions, thus providing the feeling of autonomy. Norges Klatreforbund is an organization that enhance the development of local climbing clubs, promote eco-friendly behavior, support equality among climbers and give information to the new beginners and experienced climbers about safety, climbing venues, competitions etc. The activity of NKF is also sustained by volunteers.

### **Autonomy**

Another psychological need according to SDT is autonomy (Deci & Ryan, 2004). It refers to necessity of having influence over one's life and act in congruity with one's values and beliefs. It is important to understand that independence is not required in order to satisfy the need for autonomy. One act still autonomously, even if relies on external sources, when has a choice and act out of one's own initiative.

Many research papers underline that external rewards, deadlines and other restrictions and controlling strategies undermine autonomy and thus intrinsic motivation (Deci, 1971; Amabile, DeJong, Lepper,1976).

In climbing involvement, autonomy is about experiencing a variety of options and not feeling a pressure from the outside environment. Participation should be encouraged but not in an interfering manner. Good performance should be given a positive feedback rather than rewarded with some external goods.

### **Relatedness**

The need of relatedness encompasses the will to interact with others, caring and being cared by others. The connection between people, experiencing mutual reliance and having a common goal is the base of relatedness (Deci & Ryan, 2004).

People are known to be social beings. The social context plays an important role in human development. In order to thrive, feel safe and experience a progress in sports one need to satisfy the need of belonging. Since all human beings have a need to connect it seems like it should be easy to satisfy it, unfortunately, this is not always the case. The reason for many dropouts in the sport context is among others the inability to connect with others (García Calvo, Tomás & Cervelló, Eduardo & Jimenez, Ruth & Iglesias, Damián & Murcia, Juan, 2010).

Individuals seek a group connection because other people can give a feeling of belonging and security. The ability of feeling oneself in a relation with others is important factor for feeling safe in a group. Acceptance and trust are here crucial. If a climber doesn't trust his belayer or another climber make fun of him because of his lack of skills, the need of being oneself wouldn't be here met.

Deci & Ryan (2004) point out that the need for relatedness is not as important as the needs for autonomy and competence. It is rather a tool to create a holistic environment that will enhance intrinsic motivation. Especially in accordance to physical activity social motives are important in creating an intrinsic motivation supportive environment. However, there is not much data collected about the influence of social participation motives in sport context (Ryan & Deci, 2004). Nevertheless, Vallerand & Losier (1999) point out that variety of research agree on the fact that behavior of others toward us have a great influence on our feelings, thoughts and actions. Also in the study “A self-determination approach to the understanding of motivation in physical education”, the author indicates that the motivation toward activities may be dependent on the level support and acceptance in the group, for example that cooperation enhances the self- determined ways of behaving (Ntoumanis 2001). He also emphasizes that more and more research “*identified the need to be with friends or make new friends as one of the major motives for sport participation*” (p.227-228).

Climbing is highly social activity, where partners need to trust and feel comfortable with each other. The risk factor, which is also highly present in climbing, makes it even more important to have a trust in the climbing partner. Sometimes the life of a climber relays completely on his/her partner. Such activities can bring strong bounds between people, but first one need to have a reason to develop such a big trust. Here raises the need for support from other

members of the community to which we feel belonging. In a social setting of sport and leisure activity like for example an open common climbing event, where climbers have the opportunity to meet and participate in the activity together, could possibly raise the feeling of relatedness and develop confidence in the fellow climbers.

### 2.1.3 Contextual Level of generality

Vallerand (1997) postulated three levels of generality in accordance with IM, EM and AM: the global, contextual and situational. I will focus only on the contextual level, since it reflects best the field of my thesis.

The concept of “context” concerns a specific domain of human activity (Emmons, 1995 in Deci & Ryan, 2002). The research with young adults found that the most significant contexts are education, leisure and impersonal relationships (Blais, Vallerand, Gagnon, Briere, & Pelletier, 1990 in Deci & Ryan, 2002).

Accordingly, to these levels, special motivation scales has been constructed in order to measure different types of motivation in different contexts. Two of these scales are: Leisure Motivation Scale (Pelletier, Vallerand, Blais, Briere, Green- Demers, 1996 in Deci & Ryan, 2002) and Sport Motivation Scale (Briere, Vallerand, Blais, & Pelletier, 1995 in Deci & Ryan, 2002). Later, there were more scales developed, that would comply with SDT. For my research I found the BREQ-3 model most relevant and convenient to conduct. This scale I have adjusted, so it would apply especially to rock climbing.

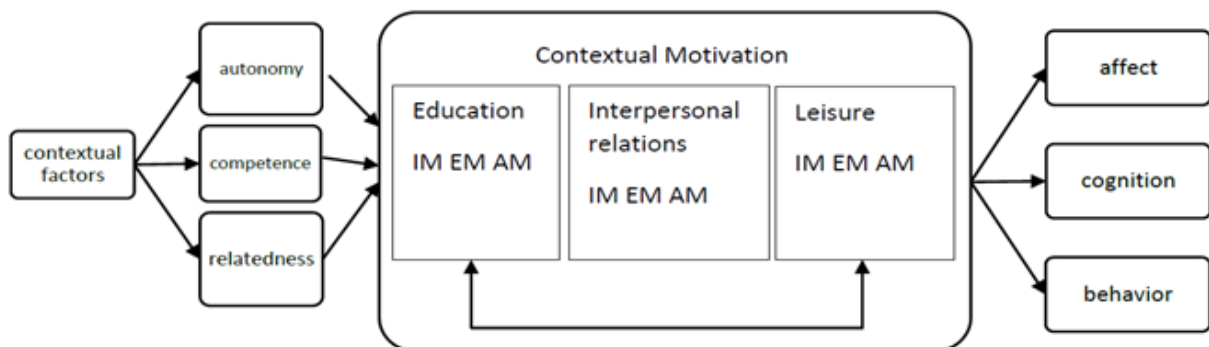


Figure 2 Contextual Model of generality (adapted form Vallerand, 1997).

In presented above model Vallerand shows how different types of motivation are influenced by social factors. Here the term “social factors” is understood dualistically:1) as a human (for example oral advice from another climber), 2) nonhuman (such as written rules of bouldering

room). Contextual factors specify parameters that are regularly met within a specific life context, but not in others (Deci & Ryan, 2004). For example, the level of experience in use of climbing equipment will be a factor in the context of climbing but not anymore in the context of, for instance, higher education. With the change of contextual factors, the motivation can become more (or less) intrinsic (Vallerand, 1997).

## **2.2 Previous studies in the area**

There is a large body of literature exploring the motivational climate in sports and leisure activities, especially in professional sport performance. Some research papers focus also on the motivational aspect of participation in physical activity classes at school around children and adolescent. Self-determination Theory has been used previously to seek the motives for retaining in the sport activity and eventual dropouts. Multiple studies agree that in order to remain in the activity long term and sustain the well-being, intrinsic motivation must be present (Teixeira, Carraça, Markland, Silva, and Ryan, 2012).

There has been however less research conducted on the topic of motivation in lifestyle sports, such as climbing. Some papers focus just on the outdoor recreation or on all forms of climbing in general. There is even less research that would focus on the role of the type of climbing and preferences on environment. Thus, there is a deficiency of research that would address the differences in motivation among climbers, especially addressing their climbing styles preferences.

A recent study, “Motivation and Goal Orientation in Rock Climbers” (Gonzales, 2019) used Sport Motivation Scale and Task and Ego Orientation Questionnaire to examine the goal orientation and motivation among a sample of 92 climbers that participated in the study. The author grounds the research not only in SDT, but also uses the goal perspective theory, justifying the choice with the influence of goal and task orientation on persistence and performance in sports. Brunei (1999) found that task orientation promotes autonomous actions and thus, has been identified with intrinsic form of motivation, and goal orientation was linked to external forms of regulation. Gonzales (2019) intended to verify whether there is any disparity of motivation based on age, gender, experience and present engagement in the activity. She found that younger climbers had a higher level of identified regulation and that climbers who participated in the sport during long period of time (over 5

years) had lower level of introjected regulation than the newer climbers (from 1 to 5 years of practice). However, no significant difference was found in task and ego orientation regarding any climbing traits. This article acknowledges the intrinsic motivation that prevails in climbing, but it focuses mostly on the goal and task orientation with respect to motivation, not specifically on the relations between intrinsic motivation and participation. It does point out the lack of difference in goal and task involvement based on gender, age, experience level, type of climbing and years being active in the sport and competitive climate. Nonetheless it doesn't present regular participation determinants and the identification of the participant regarding type of climbing was missing as well as the environment preference. In the study "Application of Self-Determination Theory to Study of the Determinants of Regular Participation in Leisure-Time Physical Activity" (Craike, 2008) regular participation in leisure activities was found to be influenced mostly by the behavior regulators that directly impact the intrinsic motivation. This article confirms stated in SDT idea, that the autonomy is crucial for intrinsic motivation and it has a great influence on the regular participation. A distinct connection was reported between identified regulation and intrinsic motivation and concluded that these concepts in leisure circumstances are almost identical. Moreover, both introjected (e.g. motivation from feeling of guilt for not being enough physically active) and identified regulations were reported to have more positive influence on regular participation in leisure activities than the feeling of enjoyment. This article is highly valuable and relevant to my research topic, yet it aims attention at a large sample of population, which is all kind of leisure time activities, which is great generalization. There is an abundance of leisure time activities that differs on many levels. Therefore, it is needed to examine those findings in more specific cases.

Lee (2013) has demonstrated on an example of a group of climbers, that among serious leisure participants both extrinsic and intrinsic motivation was present. Some climbers were driven by the internalization of the climbing subculture and its social field, while some mostly by the personal passion for the sport. In this research quantitative data were collected via survey and the analysis confirmed mentioned in SDT positive relationship between commitment and intrinsic motivation and a form of extrinsic motivation (integrated regulation) as a form of learning and integrating the subculture. In other words, more satisfaction and pleasure may arise from climbing if the practitioners incorporate the climbing subculture into their life and perceive themselves as its members. In addition, a more external



regulation- introjected regulation, such as avoidance of the guilt of not being physically active and performing for approval of others was reported having a positive impact on commitment. However, the author points out that conducting a longitudinal examination in order to exclude probable negative effects of introjected regulation is needed. This study focused on the serious leisure participants (extraction was based on 2 criteria: regularity of participation and level of experience) which limits the findings to a narrow group with specific skills. Simultaneously, it is difficult to attain a direct answer where “serious” leisure begins. This may result in a confusion in formation of a target group. Further, the study was conducted in an area where indoor and sport climbing are prevalent, which hinders generalization of the findings among for example boulderers and outdoor climbers.

In the research of Lee and Ewert (2019), “Understanding the motivations of serious leisure participation: a self-determination approach”, the SDT was used to investigate in what degree the motivations with different degree of self- determination promote or interfere serious leisure (a sample of climbers was chosen for this research as a representation of serious leisure participants). Authors focused on the concepts of commitment, identity development, personal rewards, social rewards, and financial return. The study shows that internalization is an important factor in participation in serious leisure. They point out also that future research should take into consideration the social factors which enhances the level of internalization and should also represent in the sample a wider variety of types of climbing and climbing practices.

Another interesting research in the topic of motivation, “Sports participation in sport clubs, gyms or public spaces: How users of different sports settings differ in their motivations, goals, and sports frequency”, conducted by Deelen, Ettema and Kamphuis (2018) examines how the motivation and self- determination may differ between users profiting from various settings. Study used a quantitative design, collecting data through an online survey. Based on these data a conclusion was made that connection between motivational variables and sport participation varies in accordance to the environment. Because people can have different motivations and goals in participating in sports, there should be specific spaces created, that would fit the needs of the target groups. This applies to both commercial spaces and informal groups. Variables that were taken into consideration were: frequency, setting, motivations, goals, and type of sport. Motivation variable was measured via SDT based questionnaire. Results show also that sport club participants were more often oriented toward social affiliation, skill development and social recognition. Moreover, social connection goals

were positively identified with a regular participation in both club-organized and non-club-organized settings. Also, the satisfaction of skill development goals had positive effect on the attendance regardless of the setting. In addition, clubs with informal settings were reported to attract athletes that were little competition oriented.

Mirna Mandic and Anne Tjønndal (2015) in their research “Motivasjon i klatring” and also Mandic (2018) in her Master thesis titled “Motivasjon blant knokkurrerende og ikke konkurrerende utøvere i klatring” has investigated the differences in the motivation between competing and non-competing climbers. Theoretical background for both studies was SDT. The results reveal that age and gender are factors in becoming a competitor and that intrinsic motivation is as much important for competitors as for non-competitors. Mandic and Tjønndal (2015) looked for what different forms of motivation are present in climbing as a lifestyle sport. In their questionnaire, 931 climbers from Norway answered the questions regarding their motivation to participate in climbing. The main found of this research was that most of the climbers are intrinsically motivated and that there is no significant difference in the level of intrinsic motivation between men and woman. However, men were more drawn into competition than women from which one could conclude that men are more extrinsically motivated than women. Age was also a factor in competing. The older one got the less chance there was to become a competitor.

SDT was used also in the context of communities. All climbers contribute in some ways to the widely seen, unofficial climbing community. By participating in climbing activities, buying climbing equipment, watching climbing videos and sharing pictures, climbers consciously and unconsciously are part of and create climbing community. Organized climbing groups give a structure to such community and provide a specific group that climbers can relate to and develop a feeling of belonging. Being a member in a local climbing group could be a mean which helps to fulfil the need of relatedness, competence and autonomy. An example of such phenomenon pictures Cynthia M. Webster (2008) in her research paper. The author draws attention to the importance of community associations in well-being on example of seniors. She investigated three senior groups in order to identify the influence of relatedness, autonomy and competence on their well-being. Observation and qualitative interview were conducted, and results show that the three basic psychological needs of SDT enhanced the enjoyment of participation in the

activities and are seen as the main reason for the participants' involvement in the community. Members of the group were carrying for each other and appreciated the time spent together, socializing and being accepted (the need for relatedness was satisfied). Moreover, while they felt strong belonging to the group, they didn't feel obliged to any of the activities. They were aware of their choice of time and form of activity, which was fulfilling their need for autonomy. The need for competence was also met. Members of the group could take a formal role such as secretary, president, treasurer and in this way gain affirmation and the feeling of self-confidence. Besides the formal roles, members were taking also more informal helpful actions such as cleaning, driving home other members etc. Such voluntary behaviour was empowering and giving the feeling of importance and being a valuable member of the community. All investigated groups were declared to give an environment that was providing various choice of activities, giving the opportunity to engage in those that were fitting best the preferences of members. Finally, winning and achievement were not reported to play a significant role in the general enjoyment of participation. This research can give the basis for establishing venues that would enhance seniors' engagement in social communities and subsequently increase their well-being. In the light of these findings it is visible that a community can have an impact on enjoyment, thus intrinsic motivation of members. In my study I would like to see if there is a difference in motivation between members and non-members of local climbing groups.

Presented above research papers are indeed in the field of this study. However, the topic of motivation is broad and rich in different insights. Many factors can regulate the motivation and thus it is important to examine all possible variables in different domains. Every research brought so far a new insight in the field, thus I believe there can be discovered much more and new information, which can bring us closer to understanding the motivations of climbers, can be revealed.

## 3 Method

### 3.1 Qualitative or Quantitative Method

A method is not a goal in itself, rather a procedure for attaining an objective, a pathway to knowledge. A researcher should choose it with care, reflection and treat it as a specified tool useful to obtain relevant data. Taking this into consideration one need to see which method will help to illustrate the stated thesis with the collected data.

In qualitative methods the aim is to achieve a deep insight and holistic understanding of a studied phenomenon, while in quantitative methods the diameters, overviews over many units and statistic contexts are the targets (Kvarv, 2010, Thornquist, 2003, p. 202). The qualitative interview could give me a deeper understanding of the process of motivation, socialization, feelings and needs connected to it, however for such a method it would be difficult to locate appropriate people for the sample. Answers would vary from person to person and interviewing just a couple of group members could give a variety of not overlapping answers, which would be impossible to make a conclusion out of. Reason of different outcomes from interview could lie in gender, nationality, age, experience, personality etc. Such research would lack generalizability. That is why it is important to collect data from most members possible and generalize the outcome (de Vaus, 2014). Even though observation is a highly ignored method in sport research it does have many benefits. Surveys and interviews are self-reported, which may prompt an error in data. Using observation, the researcher sees the behavior of a participant with his own eyes, and without any bias from the inaccuracy of the speech, can collect data and make conclusions (Gratton & Jones, 2004). With observing climbers in outdoor and indoor venues I could see their training patterns, their enjoyment and time they spend on climbing. Unfortunately the period of my research was situated mostly in the winter months, which makes it impossible to conduct an observation in an outdoor venue. Moreover, the Covid-19 pandemic prevented me from the observation in both indoor and outdoor climbing spots. Perhaps the best option would be to use a triangulation of the quantitative and qualitative methods. However, the time, size of the research and other factors wouldn't allow this. In this case, the most convenient method for this research will be a quantitative one.

A quantitative design is used for examining an existing, objective theory by investigating the correlation between variables. Such approach includes surveys, experimental design, correlational and causal-comparative research. The research questions of this current study indicate the purpose of testing the Self-determination Theory, which is a rationale for a quantitative design. Between mentioned above quantitative methods the survey design seems most relevant. Through devaluation and strict regulation of variables through statistical analysis, it provides measures for testing a theory and objective data can be gathered from such empirical research (Creswell, 2014).

A survey design serves to collect a numeric characterization of tendencies, beliefs or points of view of society by examining a specimen of a studied population. From such a sample it is possible to elicit a generalization. The purpose of my research will be to draw inferences about the motives and the relationship between the intrinsic motivation and regular participation in climbing activity. Collecting data from a large population, which is a characteristic of a survey design, will be thus an advantage for this research (Creswell, 2014).

Moreover, a survey conducted through internet is completely anonymous, which gives an advantage when intimate questions are asked, like for example: “Do you feel under pressure from friends or family to climb?”. Such a question could possibly bring a feeling of anxiety or shame to a respondent and thus the answer could be untrue while interviewing face to face.

Answering a questionnaire, respondents have more time to think about the question and answer without stress and time pressure, which can improve the reliability of the answer. Such web-based surveys help also to process data. Usually the software transfers automatically the responses to the file, which can be used in any statistical program. This allows to reduce the amount of human error that could appear during data entry. Finally, for practical reasons such as: lack of time and the economy of the design, conducting a survey seems to be the most rational choice. Simultaneously it is important to remember the drawbacks behind an internet survey, which can include: difficulties with finding a representative sample and getting many incomplete responses, since respondents can jump over a questions as they please (Fowler, 2009 in Creswell, 2014, Denscombe, 2017).

According to Olav Dalland (2012) the research problem predisposes the most fitting method. The nature of my thesis is closer to determining the relationship between variables and measuring the level of intrinsic motivation, than getting a deep, individual understanding of social phenomenon. Moreover, other circumstances that interfered with conducting an observation make it more clear which method should be chosen. Under these circumstances, as well as the problematic of the research, I will choose the quantitative method design for conducting this study.

### **3.2 The survey design**

Survey is a highly structured instrument that allows obtaining a large set of data. Designing a survey is vital for conducting a valid research. There are many different aspects that one should take into consideration while designing a survey. In this subchapter I will describe all these aspect, that are contributing to the survey design used for this research.

#### *Population*

The study population could be represented by the worldwide body of climbers. Nonetheless, taking into consideration size of the research and cultural and demographical contrasts, this study focuses specifically on the climbers in Norway.

#### *Sample*

The sample for this study was chosen in virtue of non-probability. The questionnaire was published on Norwegian climbing related groups on social media (Facebook) and on NKF fan page. All climbing groups in Norway were contacted via mail, asked to share the questionnaire with their members. Even though a big effort was taken to contact as many climbers as possible, the total number of contacted population representatives is not known, thus a convenience sample was employed in this study. Normally, such a sample should be avoided, since it doesn't provide a high validity, but considering the circumstances the research was run in, it was the only one that could be adopted (Denscombe, 2017).

#### *Variables in the Study*

The independent variables for this study are climbing type and environment preferences (indoor/ outdoor, rope climbing/bouldering), age, gender, belonging to a climbing group and climbing experience. The last variable

was represented by a question “How long have you been climbing?” The response was measured in months and years). The inspected dependent variables were multiple types of motivation and frequency of climbing sessions. A dependent variable is a variable that is considered to be an “effect” in a “cause-effect” association. This means that the independent variables, such as climbing type, are assumed to have influence on the dependent variable (motivation) (de Vaus, 2014).

There were 2 open-ended questions asked in the questionnaire, to understand the reasons for which participants were choosing their climbing environment and type of climbing most often. It is because some climbers climb most often indoor, even though they prefer the outdoor environment. Adding an open-ended question gives more freedom to the person answering the questionnaire. There may be multiple reasons why climbers choose a particular type of climbing and a particular venue. In this way, the participant can give a correct, precise answer. The questions were straight-forward and didn't require an elaborate answer. All other questions were closed. Such a design helps with data analysis and reduce time spent on the survey, thus encourage completion.

### *Socio-demographics*

The age and gender were included in the survey as the socio-demographic variables. For the age variable participants were asked to mark an age range that applied to their age (under 18, 18-24, 25-34, 45-54, 55-64 and 65+). The age band was used in order to allow comparison in the population despite the wide range of age. In previous research the gender was a factor in having different type of motivation, therefore this item was also implied in the study.

### *Instrumentation: Behavioral Regulation in Exercise Questionnaire-3 (BREQ-3)*

BREQ-3 is a modified version behavioral Regulation in Exercise Questionnaire-2 (Markland and Tobin, 2004). BREQ-2 was characterized by a 5-factor format, containing: amotivation, external, introjected, identified and intrinsic motivation, and was used to determine the behavioral regulations in exercise domain. The scale has been validated with a sample of 194 exercising entities, consequently, psychometric properties were declared as follows: Cronbach's alpha, which is “a measure of internal reliability used in the evaluation of Likert scales” (de Vaus, 2014, p.354)- amotivation 0.83, external regulation 0.79,

introjected regulation 0.80, identified regulation 0.73, intrinsic regulation 0.86 (Markland and Tobin, 2004). This aspect will be explained further in the reliability paragraph.

The main issue with BREQ-2 was that it didn't include integrated regulation, which is the most autonomous form of external regulation. Wilson et al. (2006) proposed an extended version, BREQ-3, which included all of the suggested by SDT behavioral regulations. A new subscale was created, and 5 extra questions were added to BREQ-2 scale to assess the level of integrated regulation. BREQ-3 consists of 24 questions that pertain to all mentioned in SDT motivation category. All the questions are calculated on 5-point Likert-scale from 0 "Not true for me" (2 "Sometimes true for me") to 4 "Very true to me". According to Wilson et al. (2006) the new components characterizing integrated regulation do not undermine the validity of the BREQ scale.

For this research I found it important to incorporate this specific form of motivational internalization because climbing is usually recognized as an activity that people choose voluntarily as their leisure time activity, thus the level of intrinsic motivation and integrated regulation is supposedly high. Therefore, it is meaningful to differentiate between all types of motivational regulations.

The regular version of BREQ-3 was adapted specifically to the activity of rock climbing by replacing the word "exercise" with "climb". For example, the statement "I enjoy my exercise sessions" was replaced with "I enjoy my climbing sessions". This implication created more precise measure for motivations in rock climbing realm. This adaptation was used also in another research, where BREQ-2 was used as an instrument to measure the motivation among competitive and non-competitive climbers (Mandic, 2018).

The scoring for BREQ-3 was reported on the official webpage (<http://exercise-motivation.bangor.ac.uk/breq/brqscore.php>). Each question corresponds to a particular motivation type. There are four questions that are designated for each type of motivation. The items are shown in the table below. All the numerated questions can be found in the Appendix 1.



Motivation type	Question number			
	Amotivation	2	8	14
External regulation	6	12	18	24
Introjected regulation	4	10	16	22
Identified regulation	1	7	13	19
Integrated regulation	5	11	17	23
Intrinsic regulation	3	9	15	21

### *Data Collection*

Respondents of the online survey were reached through Facebook climbing groups in Norway and Norges Klatreforbund Facebook fan page. The NKF was also asked to send the survey to all the members, however their response was negative. Requests to share the survey with the club members were sent via e-mail to all climbing clubs in Norway which were listed on NKF webpage. The survey was open for 22 days, from 02.03.2020 to 24.03.2020. Such a design where all observations are collected at a specific point of time is called a cross-sectional design and it allows collecting data with a little or no expense (de Vaus, 2014). A total of 402 responses was gathered, from which 366 was usable for the study. Typical time spent answering each survey was around 4 minutes.

### *Data Coding*

Before data analysis one needs to code and categorize the data from a questionnaire. In this process raw data are assigned different numbers, so the statistical program could analyze collected information (de Vaus, 2014). Closed-ended responses were automatically coded by the Survey Monkey platform. Gender was allocated number 1 to female and 2 to male, age groups ascending from 1 (youngest) to 7 (oldest), frequency from 1 (every day) to 6 (less than once a month), experience ascending from 1 (less than 2 months) to 4 (more than 3

years), preferred type of climbing (1 rope, 2 boulder, 3 both the same, 4 I don't know), environment preferences (1 outdoor, 2 indoor, 3 both the same, 4 I don't know) and membership in NKF (1 yes, 2 no).

### *Data Analysis*

SPSS 19 (Statistical package for social sciences) and Microsoft Excel were used to analyze the data. The questionnaires were coded, so that the further analysis and comparison of data sets were possible. In order to analyze the statistical data it is important to test these data for statistical significance. Patterns emerged from the study will be generalizable only if a properly chosen statistical test of significance will confirm that these patterns didn't arise by chance (de Vaus, 2014).

In statistical research the p-value is used to measure the probability of the results. The smaller the p-value, the higher probability that the results will be the same in a different time and with different participants. With a use of null hypothesis in the social sciences it is usual to set p-value lower than 0.05, which means that the investigated pattern can be considered evident when the probability that the result arose by chance is lower than 5%. In other words, if  $p < 0.05$ , the null hypothesis can be rejected (Denscombe, 2017). For this research the  $p < 0.05$  is used to determine the statistical significance among the variables.

In order to compare two independent variables (climbing subgroups) the Mann Whitney U test was performed for the environmental (outdoor, indoor), preferred type of climbing (rope, boulder), gender and membership of NKF factors. Mann Whitney test doesn't require interval data (where transmission of the variable displays numerically identical distances) and works with ordinal scales (there is no numeric distance between categories), moreover the independent variable must be nominal (with no numerical value), thus it was a good fit for the collected type of data (de Vaus, 2014; Kraska-Miller, 2013).

Spearman's rank-order correlation coefficient ( $\rho$ ) is a nonparametric test that can be used for a non-normal distribution of data and for ordinal variables. The values spectrum rank from minus1 to plus 1. A perfect correlation is observed when results are close to  $\pm 1$ . In a situation when there is a + sign in the correlation, both variables raise simultaneously. If there is - sign, then one variable increases, while the other decreases. Looking at the value of correlation coefficient we can interpret the result as

follows:  $\geq 0.8$  as very strong,  $\leq 0.3$  as weak and from 0.3 to 0.8 as moderate (de Vaus, 2014, Kraska-Miller, 2013). For this research Spearman's rho was run to find associations between different possible factors (gender, age, frequency of climbing, experience) and levels of motivational regulations.

#### *Reliability (dependability)*

Reliability specifies if the instrument of the research is indifferent in its outcomes on different occasions applied to the same person, while all other factors are not changed (Denscombe, 2017). The reliability of the research instrument used in this study (BREQ-3), as mentioned before, was validated, based on test-retest approach, where Cronbach alpha was ranged from .73 to .86 (Markland & Tobin, 2004). The value of Cronbach's alpha is normally approved from the value of 0.70. The higher the value, the more reliable result is. Best results are expected with the value above 0.90 (Osborne & Banjanovic, 2016).

#### *Validity (credibility)*

The data must be precisely applicable to the problems being inspected. In the quantitative research design, there are 2 types of factors that are usually taken into consideration estimating validity, internal and external (Denscombe, 2017). I will here mostly focus on the internal elements.

To prove the accuracy of the asked questions to the investigated issue, a researcher can depend on *face validity*, where the justification arises from the common sense, and what appears to be legitimate and self-evident (Denscombe, 2017). Another approach is *construct validity*, in which indications from previous research and existing theories are used to support the relevance of the findings.

The questions contained in BREQ-3 were based on SDT and were validated previously. This instrument was translated to many languages and is commonly used to measure the motivation, thus I can assume the validity of used instrument.

It can be discussed whether the validity is decreasing when BREQ-3 is used for lifestyle sport, which climbing is considered to be, rather than exercise. However, this scale had been used previously specifically in research linked to climbing and because it is impossible to cover all the motivational factors for each and every participant, I assume that the BREQ-3 scale is valid for this research.

Another issue with validity in my research could be the sample that is not specifically known. The link to the questionnaire was posted on social media and was practically open to answer to anybody. This creates a higher possibility that unwanted person that has in the interest to influence the results of the research answers the questionnaire. Nonetheless, it was possible to answer the survey only once from each device, so possibility that someone could purposively influence the results is lower.

## 4 Results

### 4.1 Descriptive Statistics

Four hundred and two questionnaires were answered, from which three hundred and sixty-six were usable for the analysis. There was 132 women (36.16%) and 233 men (63.84%) that participated in the study. The age varied from under 18 years old to over 65 years old, where over 42% were in the age between 25 and 34. Over a half of the respondents has been climbing for over 3 years and takes part in the climbing activity few times a week. Around 49% of the participants climbs most often with the use rope and over 59% prefers to rope climb. Although over half of the investigated climbers (56%) prefer to climb outdoor, around 71% most often choose to climb indoor. The open-ended questions provide with a possible explanation, that the relatively short outdoor climbing season and the easy and quick accessibility of indoor venues are the factors for the choices compared with the actual preferences. In addition, over 78% of respondents reported to be a member of a local climbing group. Finally, participants scored highest on Intrinsic regulation (average 3.7 out of 4) and lowest on Amotivation (0.19 out of 4). This indicates that the majority of the respondents scored over 3 points in the questions which concern the intrinsic motivation, thus this indicates that the participants in this study are essentially driven by intrinsic motivation.

With a help of graphs some important findings will be presented, in order to illustrate in a transparent way, results concerning motivation and differences between the climbing subgroups.

Figure 3 presents average scores, of all climbers, for all types of motivation. Here we can clearly see, that amotivation and external regulation are not types of motivation which are commonly present in climbing activity. Intrinsic regulation however had a relatively high average score, which points to the high level of self-regulation among climbers.

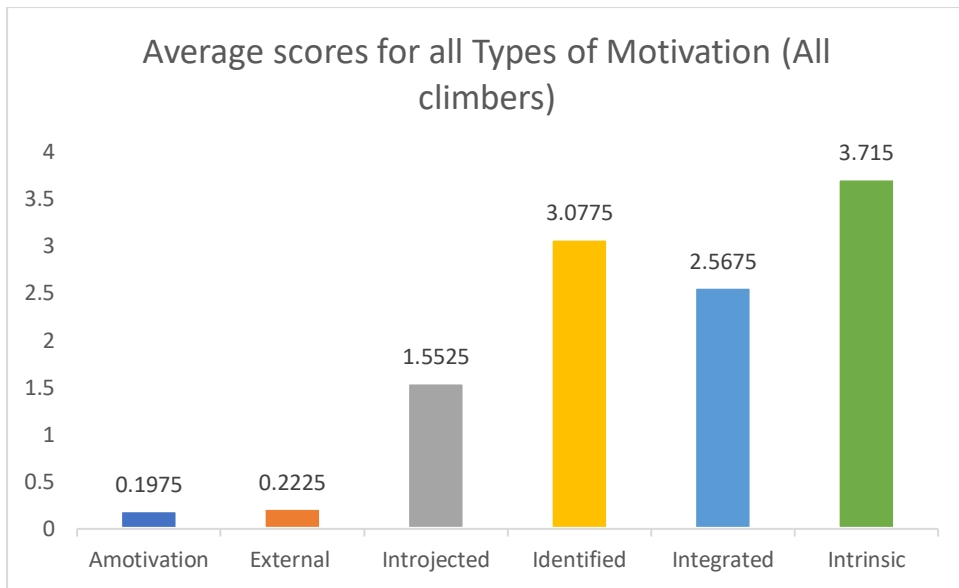


Figure 3 Motivation for all climbers

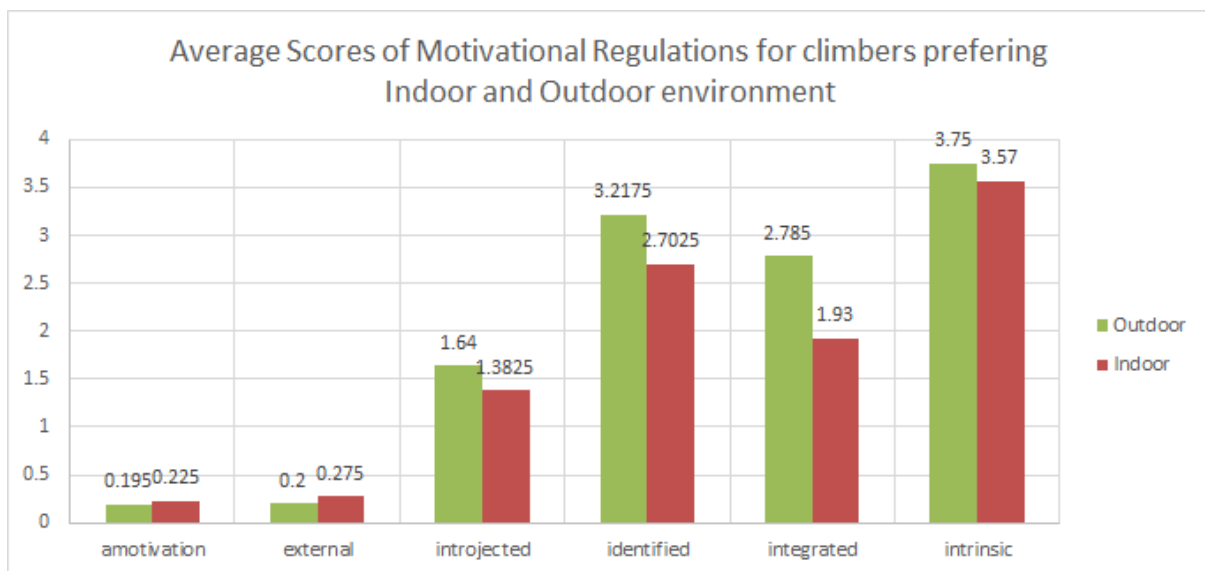


Figure 4 Motivation across outdoor and indoor climbers

Figure 4 presents comparison of motivational level of 2 climbing subgroups- group preferring climbing outdoor and group preferring climbing indoor. Green bars in the graph indicate higher scores for outdoor group within intrinsic, integrated, identified and introjected motivations and slightly lower for external regulation and amotivation

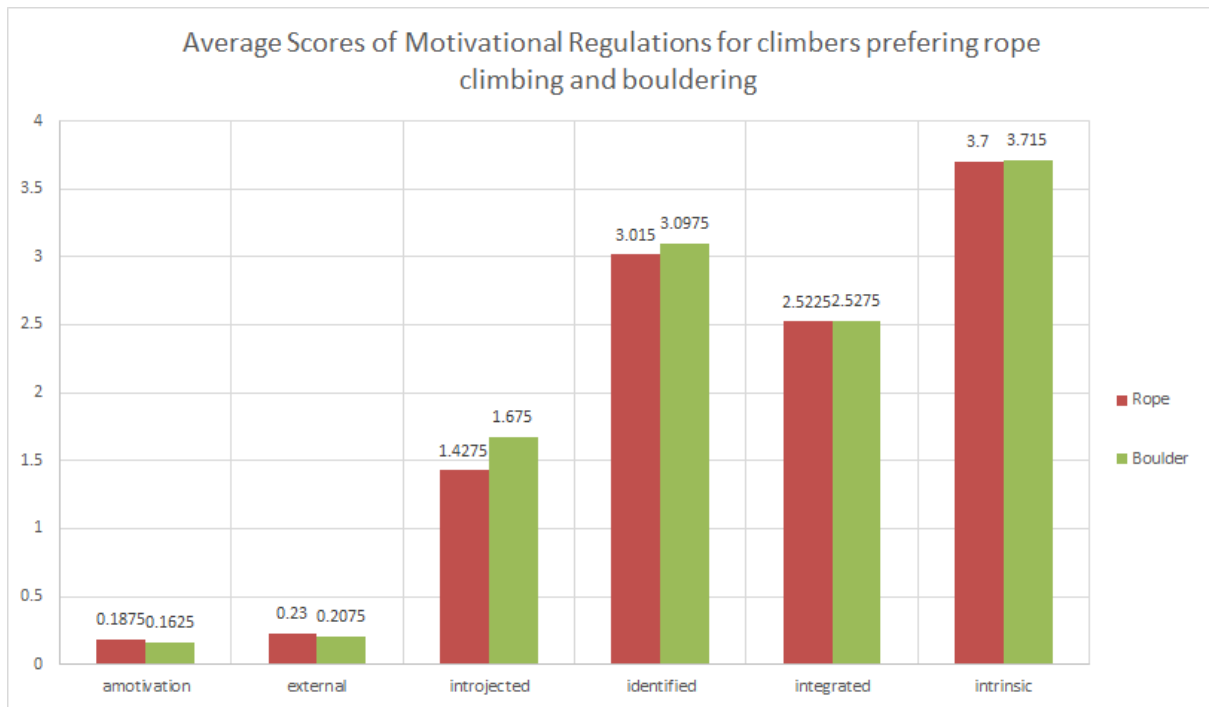


Figure 5 Motivation across boulderers and rope climbers

Figure 5 shows the differences in all kinds of motivational regulations among climbers who prefer to boulder and climbers who prefer to rope climb. The scores of these groups are very similar, although a slightly higher average score can be noted for the introjected and identified regulation in the boulder group. Both groups scored very low on external regulation and amotivation.

## 4.2 Open-ended questions

Two open-ended questions were asked: “Why do you undertake bouldering/ rope climbing most often?” and “Why do you indoor/outdoor climb most often?”. Not everyone gave answer to these open-ended questions. Only 122 out of 366 participants answered these two questions, out of which 70 of them claimed to rope climb most often and only 40 chose outdoor climbing most often. The rest left the answer box blank.

The answers of the first question were categorized into following factors: fun, exploring, social motives, convenience. 77% of people that were most often bouldering said that the convenience (less equipment needed than in rope climbing, lack of partners and closeness to the climbing venue) was the main factor for which they were bouldering most often. 30% claimed bouldering was more fun and 23% think that bouldering is more social than rope climbing. Among the people who were rope climbing most often, 66% said rope climbing was more fun

than bouldering, 22% liked the exploration aspect of rope climbing and 13% rope climbing was more social than bouldering.

The answer for the second questions were categorized into following factors: weather conditions, exploration, fun, convenience, time, experience, training. Over 80% of people who climbed most often indoor said, that the short outdoor season in Norway is the main reason for it. The time and convenience were on the second place. 73% of climbers who choose indoor venues most often, says that the time one needs to spend outdoor climbing is much longer than for indoor climbing session, thus they choose to climb indoor. Indoor climbing centers are also most convenient because of the close approach. 20% chooses indoor climbing because it is the best way to train. Some climbers (9%) were new to climbing and claimed that indoor venues provide a better safety than outdoor ones.

### **4.3 Inferential statistics**

The statistically significant differences in the means between climbing subgroups were found in relation to some types of motivational regulations. The Mann Whitney U- test revealed that the outdoor subgroup had higher scores of identified ( $U=4536$ ,  $p<0.001$ ), integrated ( $U=3902$ ,  $p<0.001$ ) and intrinsic motivation ( $U=5526$ ,  $p=0.001$ ) than the indoor subgroup. As previously explained, these results tell us, that the possibility that they arouse by accident is lower than 0.1 %, meaning they can be generalized to the whole population. Looking at the figure 4, we can see, that the biggest difference is in the integrated regulation and the smallest in the intrinsic motivation (only 0.2 point). There was however no statistically significant difference in amotivation, external regulation and introjected regulation between these subgroups. Even though the figure 4 presents a difference in all motivation types, the results can not be generalized to the whole population, if the test of significance reveal the p- value bigger than 0.05. Outdoor subgroup was also reported to climb more frequently than the indoor subgroup ( $U=4926$ ,  $p<0.001$ ) and had an average longer time of experience ( $U=5092$ ,  $p<0.001$ ). This result is illustrated in the Figure 8.

In the overall score of extrinsic motivation (sum of external-, introjected-, identified- and integrated regulation) the outdoor subgroup had higher values than the indoor subgroup ( $U=4502$ ,  $p<0.001$ ). There was no significant difference between the extrinsic motivation of boulder and rope subgroups, thus the results can not be generalized.



Motivational regulations comparison between rope climbing and bouldering preferring subgroups didn't show any statistical significance. However, rope climbers were climbing more often than boulderers ( $U=5662$ ,  $p=0.01$ ). Gender was either not reported as a significant factor for motivational regulations.

Members of local climbing groups had a higher average score for identified regulation than non-members ( $U=9308$ ,  $p=0.01$ ) and were climbing more frequently ( $U=8742$ ,  $p<0.001$ ). This findings are illustrated with graphs below.

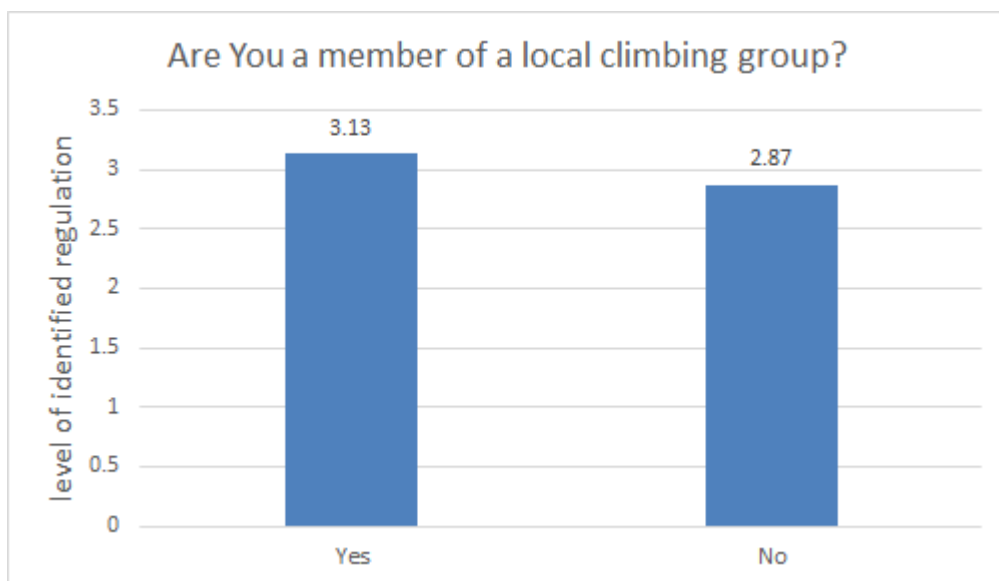


Figure 6 Levels of identified regulations for climbers who are members of a climbing group (yes) and those who are not (no).

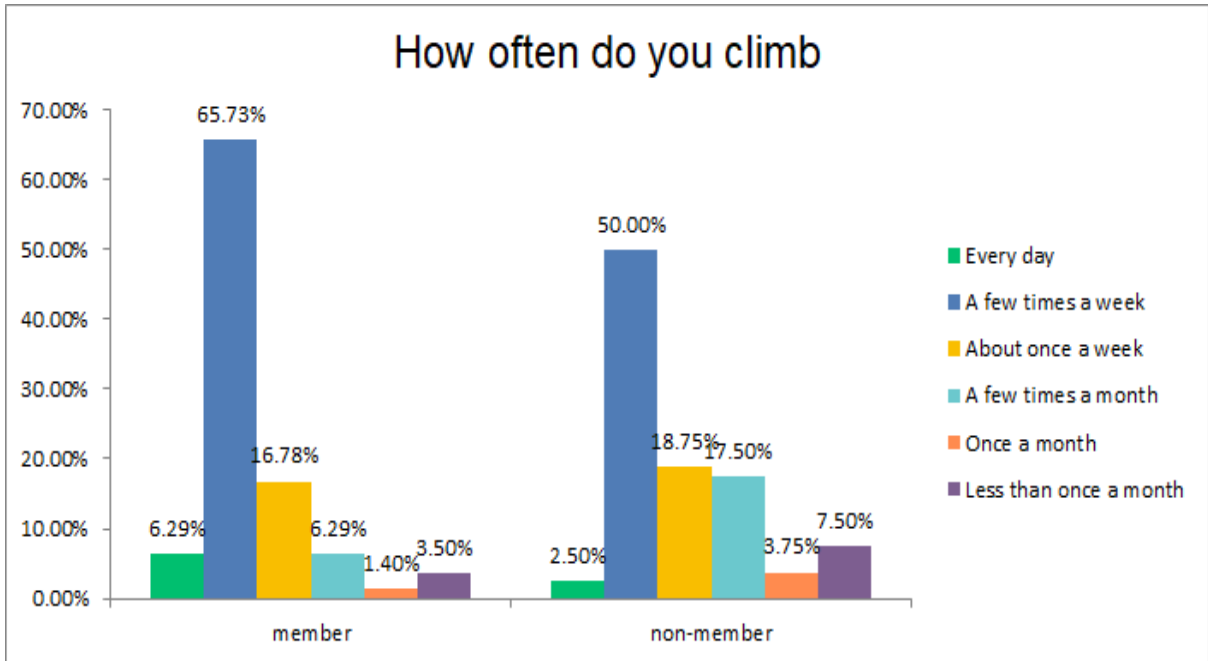


Figure 7 Frequency of climbing sessions for members and non-members of climbing groups

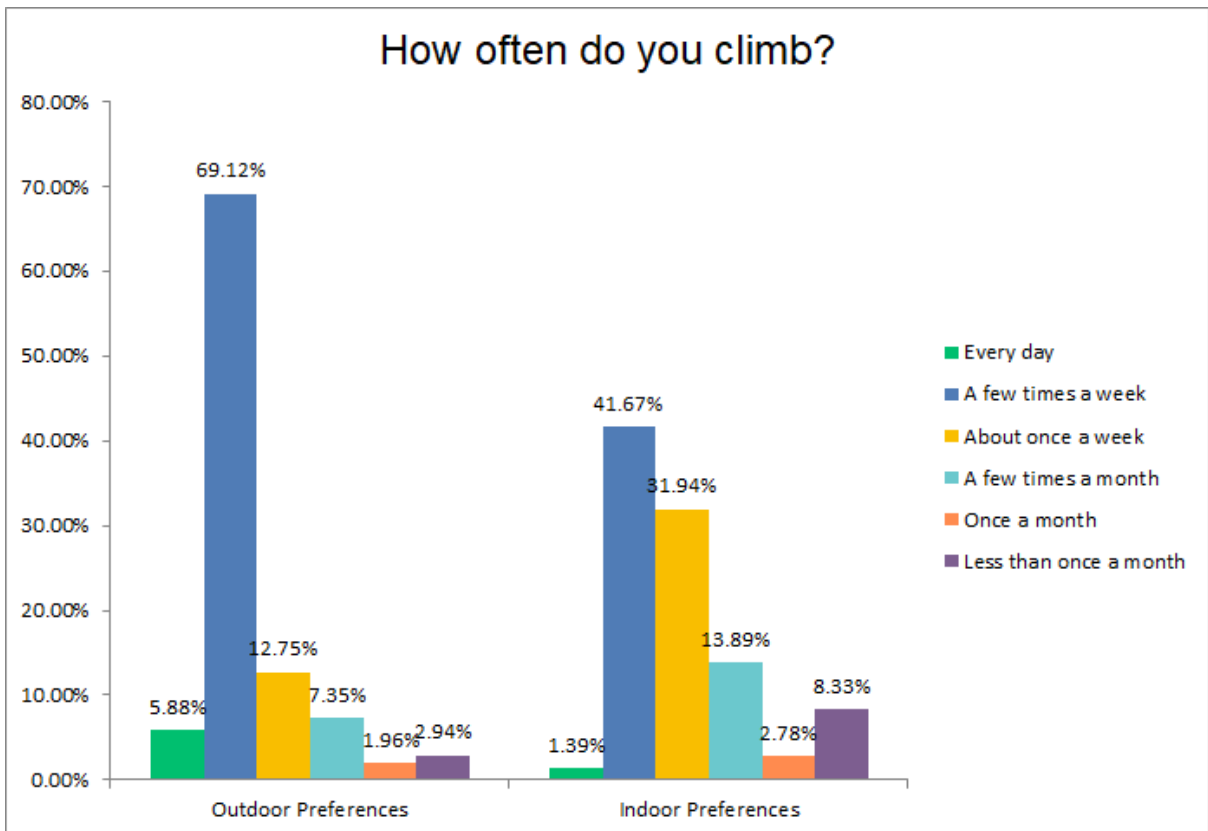


Figure 8 Frequency of climbing sessions for outdoor- and indoor- subgroup

Spearman correlation was conducted for each dependent variable (amotivation, all external regulations and intrinsic motivation) to compare the motivation levels between the age groups, climbing frequency and climbing experience.

The results show a significant, positive, weak correlation between participants ratings of frequency and introjected regulation ( $r_s = -0.24$ ,  $p < 0.001$ ); positive, strong correlation between frequency and identified regulation ( $r_s = -0.55$ ,  $p < 0.001$ ); positive, moderate correlation between frequency and integrated regulation ( $r_s = -0.46$ ,  $p < 0.001$ ); positive, weak correlation between frequency and intrinsic motivation ( $r_s = -0.23$ ,  $p < 0.001$ ). Correlation is considered positive despite the negative correlation coefficient value because of the variable coding. The frequency variable was coded ascending from very frequently (every day) as 1 to “less than once a month” as 6. As explained in the method chapter, a positive correlation means, that while one variable is growing the other variable is growing simultaneously. All above correlations were positive, thus the frequency of climbing activity ascends together with increasing of introjected, identified, integrated and intrinsic motivations. A weak correlation between frequency and introjected regulation means here, that with a high rise of introjected regulation, the frequency will grow relatively little. A strong correlation between frequency and identified regulation will indicate a relatively high growth of frequency of climbing activity with raising of identified regulation.

Correlation between age and motivation was found only for external- and introjected regulations with values respectively: ( $r_s = -0.18$ ,  $p < 0.001$ ); ( $r_s = -0.22$ ,  $p < 0.001$ ). Both correlations are negative and can be considered as weak. This result show that younger climbers have higher levels of external and introjected regulations than older climbers. There was also a significant, positive correlation between experience and identified- as well as integrated regulations with values respectively: ( $r_s = 0.15$ ,  $p < 0.01$ ); ( $r_s = 0.31$ ,  $p < 0.001$ ). This indicate that more experienced climbers have higher levels of integrated and identified regulations.

## **5 Discussion and Conclusion**

### **5.1 Discussion of the results**

The aim of this thesis was to investigate the differences between the motivation among different groups of climbers, dividing them according to their climbing preferences. In addition, the studies' direction was to see whether there is a correlation between frequency of climbing sessions and level of intrinsic regulation.

This chapter will discuss the results presented in the preceding chapter. All the results will be discussed in the light of Self Determination Theory and will be put into context with previous research in order to examine whether my results are matching or contrasting with the previous ones.

#### **5.1.1 Main research question nr 1**

The main research question asked what the differences in motivation between climbers who prefer bouldering and those who prefer rope climbing were.

The results showed no significant difference between these two subgroups regarding their types of motivation. It has been suggested that there exists activity- related differences in goals. In research using a "Motivation for Physical Activities Measure" (MPAM: Frederick, 1991; Frederic & Ryan, 1993 in Deci & Ryan, 2004) it has been proven that type of sport is one of the factors that regulate the motivation of the individual (Frederick, 1991; Frederick & Ryan, 1993 in Deci & Ryan, 2004). This result was however produced by classifying 2 independent groups: fitness activity participants and individual sport participants. It is understandable that people who train weightlifting will have perhaps different motives than tennis players. Boulderers and rope climbers however belong to the same sport group, which makes their motivation more likely to be similar.

A similar result to the current study was attained in a previous research, where motivation of traditional, hybrid and sport rock climbers were compared. The variables that were included in the scale that measured the level of motivation were : competition, control, escape, sensation seeking, and social. The author focused on the differences between traditional and sport climbers, while the focus of this current research was rope climbers and boulderers. In above presented research paper also no significant difference in the motivation was found (Ackerman, 2006).

### **5.1.2 Main research question nr 2**

The second main research question was: “What are the differences in motivation between climbers who prefer to climb indoor and those who prefer to climb outdoor?”.

In the general classification of extrinsic motivation, the outdoor subgroup had a higher average score than the indoor subgroup. This may seem a surprising result at a first sight, since the indoor climbing is perceived as training and exercise oriented, while outdoor climbing as nature oriented and training is considered as an extrinsic form of motivation. However, when we look at the specific forms of internalization of the outdoor subgroup, the outcome is understandable. The identified and integrated forms of motivation had higher scores in the outdoor subgroup than in the indoor subgroup. Although these two regulations belong to the extrinsic motivation, they are recognized as autonomy supportive. According to Deci and Ryan (2004) it can be anticipated that people whose motives are “well-internalized”, meaning, that those motives are identified or integrated, will have higher level of enjoyment and better persistence. Moreover, a study of Chatzisarantis and Biddle (1996 in Deci & Ryan, 2004) revealed that a higher level of the autonomy supportive extrinsic motivational regulations for sport classes among students were positively correlated to the determination in exercising outside school. This finding is also supported by Craike (2008), who revealed that identified and integrated forms of extrinsic motivation can positively influence perseverance in leisure time activities. Another finding, that is consistent with the above one, which is considering the intrinsic motivation, shows that the outdoor subgroup had slightly higher level of intrinsic motivation than the indoor group.

### 5.1.3 Main research question nr 3

The last research aim was to find the possible determinants of the regular participation in rock climbing.

A finding displaying a difference between the environmental preference groups is among others the higher frequency of climbing sessions of the outdoor group compared with the indoor. Mandic (2018) points out that closeness to nature is very important for climbers in Norway and also that climbers who are not very concerned with nature have higher chance to be involved in the competitive climbing. Further, the competitive climbers tend to have higher extrinsic motivation than non-competitive climbers. Those two findings make it easier to understand the higher frequency among the outdoor group. Climbing is a lifestyle sport, where other aspects than only physical performance are important (Wheaton, 2004). In this case the relation to nature is one of the factors that makes it unique.

Moreover, more experienced climbers practice more frequently than the climbers with little experience. It has been previously suggested that length of sport involvement is a positive factor for achieving flow state (Weinberg & Gould, 2019). This could explain the higher frequency among the experienced climbers. State of flow is also identified with intrinsic motivation, thus this finding is also coherent with the self-determination theory, which states that high level of intrinsic motivation will positively influence adherence (Deci & Ryan, 2004).

The current study revealed also a positive correlation between frequency and three types of extrinsic regulations: introjected, identified and integrated and intrinsic motivation. Although the introjected regulation is considered a non-autonomy supportive and ego enhanced regulation, the higher frequency may be explained as being an “obsessive participation”. Such a phenomenon takes place when people obsessively seek social approval or are trying to meet their partners’ desires (Lee & Ewert, 2019). As explained before, identified and integrated regulations are considered self-internalized, which explains the positive correlation with frequency (Deci & Ryan, 2004). No significant difference was found between the level of intrinsic motivation and frequency. This can be caused by the general high level of intrinsic motivation among all the climbers.

Last factor that was found to be influencing frequency was the membership of a local climbing group. Members were climbing more often than non-members. It was previously

found that feeling of belonging provides a better well-being and increase intrinsic motivation. Being a member of a community should fulfill the need for relatedness (Webster, 2008). Such explanations is possible, however the current research doesn't exhibit any significant difference in intrinsic motivation between members and non-members. This problem will be also addressed further in the discussion.

#### **5.1.4 Other findings**

What is interesting, is that the indoor group had lower level of experience than the outdoor group. This means that new climbers prefer to climb indoor and the ones with elongated practice exhibit outdoor preferences. Nowadays many climbers start their journey with this sport at the indoor venues and afterwards, when they gain experience and confidence, they gradually move their practice outdoors. This is understandable, since indoor climbing gyms are usually well equipped, provide a feeling of safety and give opportunity to meet other climbers and/or climbing instructors, thus are a friendly environment for new beginners. Grønhaug (2018) revealed in his research, that outdoor climbers are more prone to injuries than indoor climbers. Outdoor climbing requires knowledge of various rope techniques, equipment, belaying skills and lead climbing. All these abilities are gained with time and are easier to learn indoor, with an instructor or fellow, more experienced climber. Climbers with longer experience had a higher level of identified and integrated regulations. This finding is supported by Ewert (1985). As mentioned before, these regulations are highly autonomy supportive. Such a result can be caused by the fact that people tend to be more externally oriented when they start to participate in a sport and becoming more internally motivated with some practice.

Another founds were considering the motivation across age groups. In the previous research within the sport and exercise uncovered some differences based on age. Some older participants while upholding the intrinsic motivation tend to have more external motives, like fitness level and overall health. At the same time, some studies show a negative correlation between age with social and fitness motives (Deci & Ryan, 2004). This current study shows a negative correlation for age and both, external and introjected forms of extrinsic

motivation. This finding can be explained by the lack of strong desire for social approval among older adults (Deci & Ryan, 2004).

Gender is a common factor to investigate while doing social research. It has been also considered in the research of SDT. Previous studies show quarrelsome results. Both differences between the sexes as well as no differences were discovered (Deci & Ryan, 2004). Fortier et al. (1995) declared that female athletes are more intrinsically motivated and have stronger identified regulation than male athletes. At the same time, Fredrick (1991, in Deci & Ryan, 2004) claimed that woman tend to be more appearance, physical attractiveness and fitness oriented than man.

Results provided from this current research show no difference in motivation between genders. Same results were achieved by Mandic & Tjønndal (2015) where a group of Norwegian climbers was investigated. Such a result may indicate that in climbing female participants don't experience a social stigma of body-related norms. Climbing is not a sport in which participants main goal is to keep good fitness nor good appearance (Zhou, Chlebosz, Tower, Morris, 2020). This suggest that climbing subculture cultivates freedom from gender inequalities and judgements based on appearance or beauty standards.

Further, the results revealed a significant difference between members and non-members of a local climbing group. Climbers that were members of a local climbing group scored higher on identified regulation. The results were however not drastically different and there was no significant difference in intrinsic motivation. I was supposing that perhaps members could have higher levels of intrinsic motivation and/or integrated regulation, because of the supposed better fulfilled need of relatedness among club members than non-members. This didn't turn out to be true. Climbing is a highly social sport anyways, so member or non-member doesn't make a big difference. Slightly higher level of identified regulation could be understood as a stronger identification to the sport, of the participants that were members of a local climbing group. They may see values of the climbing activity based on the whole community of the sport and identify themselves as members of it. Interestingly, the frequency of climbing sessions was higher among the members of local climbing groups. Frederick (1999) found that social motives can increase the regularity of participation in the activity. This discovery corresponds to the above presented result and explains better perseverance among members.



Finally, the open-ended questions provided with a suggestion that practicality, time factor and weather are the main reasons to climb indoor. Simultaneously other aspects like better safety indoor, many routes to choose from, good opportunity for training and feeling scared to climb outside were also, but less frequently mentioned reasons to climb indoor, while outdoor climbing was mentioned to be more adventurous and a general positivity about being in nature was expressed.

Boulderers meant, they don't like to rely on others and the equipment. At the same time, they claimed bouldering was more social than rope climbing and requires more creativity and develops problem solving skills. Bouldering was also mentioned to be an efficient training that requires relatively little time. Rope climbers pointed out that bouldering brings more injuries than rope climbing. Moreover, they prefer rope climbing, because of many alternative ways to climb a route and the teamwork aspect.

The open answers suggest that climbers that prefer indoor climbing are more afraid of falling and often treat indoor climbing as a form of training, while the outdoor climbers like the adventurous mode and appreciate being close to nature. It is important to mention that because of the short summer in Norway, 'climbers are not able to climb in their preferred environment whole year round. Many climbers choose to climb indoor even though it doesn't match their preferences. Both bouldering and rope groups claimed to appreciate the social aspect of climbing. Some answers may indicate that boulderers tend to treat climbing as a workout, however there was not enough responses to test the significance of this data. Here are some quotes from the questionnaire, that represent most frequent answers to this topic:

"Before I was only climbing rope and outdoor, but now I don't have time for it...so indoor bouldering it is."

"Short climbing season in Norway force me to climb indoor."

"I am a beginner and don't feel confident enough to climb outdoor."

"I love the unknown and adventure in multipitch. This can be done only outdoor and with a rope."

"I like being outdoor, don't see a reason to climb indoor"

"Indoor climbing is more effective in term of a training."

"Bouldering is more fun and requires problem-solving skills"

"I like the social part of bouldering, in rope climbing you are just stuck with one partner."

## **5.2 Contributions and implications**

This study contributed to the knowledge of motives of lifestyle sports, specifically among climbers in Norway. All the extrinsic motivational regulations were included in this study, thus a more detailed view on the self-regulated forms of extrinsic motivation among climbers is showed. This gives a clarity on why even though exhibiting some levels of extrinsic regulations people are willing to participate in lifestyle sport.

This information can be used by climbing venues managers in order to better understand their clients' expectations and then imply different climbing opportunities based on the different climbing styles which are most popular in the area. Also, it can give valuable suggestions to coordinators of climbing events and board members of climbing groups.

## **5.3 Limitations of the study**

There exist some methodological and other weaknesses of this study, that must be pointed out. Namely, the sample may exhibit a high sampling error, which could disable the generalization of the findings. It is highly probable that not all climbers had the opportunity to answer the questionnaire. Most likely the youngest and oldest climbers are not active on social media, which excludes them from taking part in the research. Moreover, the study focused only on the Norwegian climbing community, which makes it less likely to be conceivable to make a generalization to all climbers.

Moreover, it is arguable whether SDT is the right one to imply to lifestyle sports. SDT was primarily developed to study sport and exercise motivation. Terms such as performance-goal orientation and task orientation are linked to SDT. Climbing is an activity, where freedom and identity is highly valued, thus it is possible that task orientation does not apply to most of the climbers. The lifestyle sports participants are usually highly intrinsically motivated and there should be no amotivation for participation, since the participation in lifestyle sports is in principle voluntary. In this study all groups scored high on intrinsic motivation and low on amotivation. SDT could be more appropriate while comparing other sports, that are structured, such as football or tennis with lifestyle sports.

Further, the BREQ-3 questionnaire includes many questions that seem very similar to each other and respondents might have questioned the importance of the answer. The BREQ-3 was placed at the end of the survey. Many respondents seeing the high number of questions simply gave up on filling it and left the survey incomplete.

Lastly, the fact that the researcher is involved in climbing herself creates a higher risk for a potential skewed interpretation. Although putting much effort to be objective, having an opinion about the topic may be sometimes a factor for unconscious biased analyses and interpretation of the data.

## **5.4 Future research**

The mixed results for members and non-members of climbing groups require a further exploration. Further research could see if members of climbing groups have better capacity to fulfil the three basic needs of relatedness, competence and autonomy and in such way positively influence persistence.

Additionally, the research topic could be widened to other styles of climbing such as ice climbing, trad climbing, high boulder, free solo etc. Climbing is a relatively new sport, thus new branches and styles are still developing. It would be interesting to see if there are any differences in motivation between the traditional climbers and the climbers who choose newer styles of climbing. Also, considering the socio-demographics of the study, a wider demographical sample, that would include climbers from the whole world would be desired in order to generalize the results, as well as comparing climbers with different socio-demographical backgrounds.

Moreover, a longitudinal design could be implied in further research, to detect shared influences among the climbing subgroups, between experience and motivational regulations, as well as identify eventual dropouts.

Finally, a participant observation and qualitative interview should be conducted among those subgroups, that displayed differences, to get a better understanding of the actual motivations and get a wider explanation of differences between them.

## 5.5 Conclusion

The aim of this study was to investigate motivation types among different climbing subgroups. Based on presented result, in the light of SDT, we can clearly see, that there exist differences in motivation based on the environmental preferences of climbers. Climbers who prefer to climb outdoor tend to be more intrinsically motivated and more self-regulated. The determinants of regular participation were found to be: preferred type of climbing, preferred environment, intrinsic motivation, introjected-, identified-, integrated-regulation, years of climbing experience and membership in a local climbing group. Intrinsic motivation was a dominant one among all climbers, which indicates high enjoyment and self-regulation among participants of lifestyle sports such as climbing. The information collected in this research paper can be useful for the managers of indoor climbing facilities as well as for creators of outdoor climbing venues. Climbing events managers can profit from this research by understanding the motives of specific climbers and implementing the means that would fulfill their needs.

Despite of the contribution, of current research, to the knowledge on motivation in climbing, more research which would investigate a greater sample and explore differences within different population groups is needed.

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## Appendix 1: The questionnaire

### **Motivation for Rock Climbing**

#### **Welcome to Motivation for Climbing Survey**

The purpose of this research is to find out what are the motivations of rock climbers to participate in rock climbing in their leisure time. This information will help to understand the differences in the motivation between climbers and will give a base to improve climbing spaces, climbing groups and will help to create training plans that will be beneficial to the level of motivation, persistence and enjoyment.

#### **Procedures:**

If you agree to take part (by clicking "next") in this research, you will be asked to answer questions concerning your motivation for climbing.

Part one of the questionnaire consists of some background questions and part 2 consists of 19 questions, where you can choose the responses most corresponding with you. 1 mean " Not true for me" and 5 mean "Very true for me".

The information collected through this questionnaire will be used as a part of a master dissertation at University of South-Eastern Norway.

#### **Confidentiality:**

This questionnaire is 100% anonymous. The researcher will not know who has completed each questionnaire, nor your IP address will be visible.

#### **Voluntary nature of study:**

The participation in this study is completely voluntary. You can choose not to take part in this study and withdraw your participation at any time throughout the completion. There will be no penalty, nor loss of any personal benefits attached to it.

#### **Contacts for questions and problems:**

In case of any questions you can contact the researcher via e-mail: 162786@usn.no  
Magdalena Szaynok  
University of South-Eastern Norway

## Motivation for Rock Climbing

### Rock climbing- Regulations questionnaire

Please read the questions carefully and give answer to each statement.

This questionnaire will take you around 3 min.

1. What is your gender?

- Female
- Male

2. How old are you?

- Under 18
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65+

**3. How often do you climb?**

- Every day
- A few times a week
- About once a week
- A few times a month
- Once a month
- Less than once a month

**4. How long have you been climbing?**

- Less than 2 months
- Less than 1 year
- 1 to 3 years
- more than 3 years

**5. Which type of rock climbing do you undertake most often?**

- Rope climbing
- Bouldering
- Both the same

**Justify your choice**

**6. Which type of rock climbing do you prefer?**

- Rope climbing
- Bouldering
- Both the same
- I don't know

**7. Which type of environment you climb in most often?**

- Outdoor
- Indoor
- Both the same

**Justify your answer**

**8. Which environment do you prefer to climb in?**

- Outdoor
- Indoor
- I like both the same
- I don't know

**9. Are you a member of a local climbing group?**

- yes
- no



## Motivation for Rock Climbing Part 2

### 10. Why do you engage in rock climbing?

	0. Not true for me	1.	2. Sometimes True for me	3.	4. Very true for me
1. It's important to me to climb regularly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I don't see why I should have to climb	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I climb because it's fun	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I feel guilty when I don't climb	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I climb because it is consistent with my life goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I climb because other people say I should	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I value the benefits of climbing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I can't see why I should bother climbing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. I enjoy my climbing sessions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I feel ashamed when I miss a climbing session	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. I consider climbing part of my identity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. I take part in climbing because my friends/family/partner say I should	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. I think it is important to make the effort to climb regularly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	0. Not true for me	1.	2. Sometimes True for me	3.	4. Very true for me
14. I don't see the point of climbing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. I find climbing a pleasurable activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. I feel like a failure when I haven't climbed in a while	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. I consider climbing a fundamental part of who I am	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. I climb because others will not be pleased with me if I don't	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. I get restless if I don't climb regularly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. I think climbing is a waste of time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. I get pleasure and satisfaction from participating in climbing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. I would feel bad about myself if I was not making time to climb	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. I consider climbing consistent with my values	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. I feel under pressure from my friends/family to climb	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## **Motivation for Rock Climbing**

**Thank you for your time taking this survey, you rock!**

**Click "done" to record your responses.  
Have a great climb!**