Drive your project team's engagement

A mixed-methods study of engagement drivers
beyond rewards and punishment

by

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Abstract

Project teams lack the ability to incentivize engagement. To cope with increasingly dynamic environments businesses adopt temporary organizational forms, such as project teams, that promise more adaptability but not seldom lack clear structures of power and authority. Given that research has repeatedly underlined the importance of engagement for the economic thriving of businesses, project teams seek methods to drive engagement that are within their application scope. This study aims to identify the most effective engagement drivers and to understand what their effectiveness depends on, mainly focusing on individuals' career orientations. Building on existing work on engagement it asks: What factors engage project members the most and does their career orientation and career self-awareness interplay with the effectiveness of the engagement factors? In this context engagement is defined as being fully involved, characterized by the three states of vigor, dedication, and absorption, across the physical, cognitive, emotional, and social dimension.

Based on a review of the literature on engagement, a survey was distributed to the team members of a student project. Afterwards, the participants' career orientations were identified with an online test. Lastly, a randomly selected group of the participants was interviewed to follow up on survey responses. Analysis of the data suggest: The most effective drivers of engagement address the social dimension of teamwork. The results indicate that it can be distinguished between universal engagement drivers that motivate nearly anybody to engage and conditional engagement drivers which effectiveness depends on the career orientation but not career self-awareness of the individual. Moreover, this study discovered additional characteristics, such as assertiveness, egocentricity, and team- or task-focus that seem to affect the effectiveness of engagement factors. However, more research is needed to further validate the findings and hypotheses by considering a representative sample.

Keywords: *engagement, project team, temporary organizations, career model, career motive, engagement drivers*

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1. Introduction

The importance of employee engagement for the economic thriving of businesses is indisputable and has vastly been studied by numerous scholars (Maslach & Leiter, 1997; Sorenson, 2013; Kumar & Pansari, 2015; Anand, 2017). Likewise advanced is the research around what motivates and demotivates employees to engage (Larsson & Kling, 2017a). Engagement, putting yourself into what you do by fully involving yourself (Imperatori, 2017), can according to recent research be influenced through numerous factors such as organizational support, rewards, and the characteristics of the job (Saks, 2006). But what if these measures are out of the application scope of the practitioner?

As societies undergo a deep paradigm shift from industrial to knowledge and information societies new organizational forms find their way even into the most conservative industries (Edmonson, 2012). Aspiring the new maxims - e.g. collaboration, interdisciplinarity, and agility - often creates temporary project teams without clear hierarchies or power structures (Tyssen, Wald, & Spieth, 2014). As these teams or individual designated leaders lack the necessary authority to reward or punish (Hodgetts, 1968; Tyssen, Wald, & Spieth, 2014), different methods to increase engagement among team members are needed.

1.1. Background

In many projects of our academic as well as our professional careers, we encountered disengaged fellow team members. Lacking authority and resources to incentivize engagement, we felt like we did not have the tools to motivate them to engage. These experiences inspired us to learn how the engagement of team members can be increased when engagement driving factors such as rewards or punishment are out of scope.

Beginning our research, we discovered that previous studies explored several ways to increase the engagement of team members, besides rewards or punishments (Bakker & Demerouti, 2007; Imperatori, 2017; Larsson & Kling, 2017a; Maslach, Schaufeli, & Leiter, 2001; Saks, 2006; Turner, 2020). In the following, we will refer to these methods as engagement driving factors or engagement drivers. On the contrary, previous researchers have also discovered factors that demotivate team members to engage (Larsson & Kling, 2017a). In this research, we will refer to those as engagement killers.

Previous research on engagement primarily focused on engagement driving factors that motivate the vast majority of people to engage. Some scholars, however, have studied specific factors that are only driving the engagement of people who share similar characteristics (Larsson, Brousseau,

Driver, Holmqvist, & Tarnovskaya, 2003). Based on these different approaches towards engagement factors, we will distinguish between universal and conditional engagement driving factors. While universal engagement driving factors motivate most people to engage, conditional factors are only effective for specific groups. These groups can be formed based on numerous characteristics. The members of such a group can for example idealize the same career orientation. Larsson and Kling's (2017a) paper offers four different career types that people tend to desire. These career types differ in their direction and frequency of movement. As one person might idealize a Linear career orientation, which is one of the four types, this person is motivated by different factors than someone who idealizes a different career orientation. Empirical data has shown that for example being confronted with many challenges is primarily motivating Linears (Larsson et al., 2003), and therefore, this can be considered a conditional engagement driver.

In their career study, Larsson and Kling (2017a) also introduce another term - *career self-awareness*. While career orientation describes the type of career that a person idealizes, career self-awareness describes whether this career orientation is also the most engaging for that person. Larsson and Kling (2017a) show that people sharing the same career orientation are engaged by the same factors. However, the same has not been shown for people sharing a similar level of career self-awareness. Therefore, the relationship between career self-awareness and conditional engagement factors remains unknown.

1.2. Problem

Employees engage differently in their workplace. Studies have shown that more than 50% of employees are disengaged in their jobs (Seijts & Crim, 2006). As engagement relates positively to several crucial business factors such as profitability, revenue, employee productivity and retention, customer satisfaction, as well as innovative capabilities (CIPD, 2017 cited in Turner, 2020) it is highly desirable to maintain a high level of engagement across all employees. Multiple measures to increase engagement are known such as financial rewards (Turner, 2020) and many of these engagement drivers require resources and authority to be employed. But what if the necessary resources or authority are out of your application scope?

As organizations try to cope with the growing uncertainty in their dynamic environments, they increasingly rely on temporary organizational forms that are highly adaptable (Hitt, Ireland, & Hoskisson, 2007 cited in Tyssen, Wald, & Spieth, 2013). Temporary teams, projects, or task forces are examples of these forms of organizing (Tyssen, Wald, & Spieth, 2013). They are characterized by a limited duration, a specific task and outcome, a lack of hierarchies, diverse team compositions, and an increased level of uncertainty (Bakker, 2010; Lundin & Söderholm, 1995; Pich, Loch, & De Meyer, 2002; Tyssen, Wald, & Spieth, 2013). Given these characteristics, these temporary constellations lack the necessary resources and authority to reward or promote team members to

eventually increase their engagement (Hodgetts, 1968). From the growing importance of temporary teams, the crucial question arises:

How can project team members be motivated to engage without using means to reward or punish?

1.3. Purpose

The purpose of this research is to discover the effectiveness of factors that are expected to influence project team members' engagement. The focus lies on factors that are applicable to temporary teams that lack clear hierarchies. Therefore, rewards or punishments are not considered. We aim to assess their effectiveness with regards to how strongly they can create engagement and whether they are universally or conditionally applicable. Furthermore, we intend to assess if the effectiveness of conditional engagement factors for individuals depends on the individual's career orientation or career self-awareness. With these findings, we will narrow down the gap in existing research. Additionally, we seek to inform practitioners on how to increase the engagement of team members.

1.4. Research Questions

- – What factors, neglecting rewards or punishments, are the most effective to influence project members to engage in a project?

- – Does the effectiveness of conditional engagement drivers depend on an individual's career orientation or career self-awareness?

1.5. Demarcation

In this research, we retrospectively studied the members of a university project that we have also been a part of. The project was a mandatory element of the 2019/2020 Master in Management program at Lund University School of Economics and Management and lasted for five months. This project was particularly suitable to study because of its temporary nature, the high degree of uncertainty, and the lack of hierarchy within the project team. These factors clearly align with the common characteristics of temporary organizations (Tyssen, Wald, & Spieth, 2013) which define the context of this study. For the same reason, we excluded rewarding and punishing methods to increase engagement.

The ongoing global health crisis during the time this study was conducted reduced the accessibility to a broader population of interest. Even though the university project was a good fit for the research context, the sample is limited in terms of its diversity. Another limitation stems from the size of the sample. Both the limited time frame as well as the costs associated with determining the career concept and motive of a participant limited the number of people, we were able to

study. Therefore, the sample size was restricted to 15. However, due to the labor intensity of the chosen mixed-methods approach, not all the participants were studied for every method. Consequently, this study can present valuable insights for practitioners and future research, but the findings cannot be generalized to the entire population.

Project teams are a type of a temporary organization and frame the context of this study. This topic, including project management, is very broad and widely researched (Packendorff, 1994). Hence, to focus on engagement and career research as well as to complete this study in time we restricted the literature review of project teams.

1.6. Outline of the Study

In the following, the theory that is relevant for this study is presented in Chapter 2. It consists of a brief introduction to project teams, a literature review on engagement, and the career model framework that is used in this study. The study design and methodology are introduced in Chapter 3 where also the collected data's reliability and validity are assessed. In Chapter 4, the findings of the data analysis are presented followed by a discussion in Chapter 5. Chapter 6 presents the conclusion by summarizing the research findings.

2. Theory

This chapter provides an overview of the relevant literature for this thesis. This includes a first section about project teams followed by a section about engagement. The third section presents the chosen career model that is used as a tool for this study.

2.1. Project Teams

This section outlines a brief introduction to project teams. It is merely used to frame the context of this thesis. Therefore, the aim of this section is to define the term project team and to describe its characteristics. This section does not claim to present an exhaustive and complete review of the literature on this field.

Project teams are one of many types of temporary organizational forms and belong to the same category as task forces or temporary teams (Tyssen, Wald, & Spieth, 2013). These temporary organizations are formed out of a desire to create more flexible organizational structures (Ekstedt, Söderholm, & Wirdenius, 1999) and belong to the vast research field of project management (Lundin & Söderholm, 1995). Traditionally relied on mostly in industries, such as film making (DeFillippi & Arthur, 1998) and construction (Gann & Salter, 2000), temporary organizational forms gain popularity in other industries as companies try to cope with the growing uncertainty of their business environments (Hitt, Ireland, & Hoskisson, 2007). Within research, the topic of temporary organizational forms stems from a growing focus on duration and pace in management and organization science (Bakker, 2010). Since 2000 the number of publications has grown substantially which indicates the relevance of this topic (Bakker, 2010).

Project teams are usually characterized by a specified scope, limits of duration, a lack of hierarchies, diverse compositions, and an increased level of uncertainty as well as urgency (Bakker, 2010; Hodgetts, 1968; Lundin & Söderholm, 1995; Pich, Loch, & De Meyer, 2002; Turner & Müller, 2003; Tyssen, Wald, & Spieth, 2013). Thereby, project teams clearly distinguish themselves from the traditional understanding of the permanent or at least long-lasting organization (Lundin & Söderholm, 1995).

The unique characteristics of project teams also pose some challenges. Due to the limited scope of this study, only the challenges regarding a lacking or unclear hierarchy are outlined. According to Hodgetts (1968), project leaders experience an "authority gap" (p.211) because they lack the ability to incentivize project members through rewards or promotions. Since the project leaders' responsibilities outbalance their authority (Hodgetts, 1968) there is a clear need for other methods to incentivize engagement of project members. An extensive review of the literature covering this topic is outlined in the next section.

2.2. Engagement

Engagement of employees has become increasingly important for researchers and practitioners within the last decade. This interest has been evoked by studies that found a relationship between organizational performance and employee engagement (Turner, 2020). Engagement was positively related to several crucial business factors such as profitability, revenue, employee productivity and retention, customer satisfaction, as well as innovative capabilities (CIPD, 2017 cited in Turner, 2020). Therefore, ways have been sought to increase the engagement of employees. However, first, there is a need to clarify the term *engagement*.

Definitions of engagement

While engagement is commonly related to terms such as "passion, commitment, involvement, energy, dedication or pleasantness" (Imperatori, 2017, p.1), a universal definition for engagement does not exist. One of the earliest definitions was formulated by Kahn (1990) describing engagement as a state where people are "*physically, cognitively,* and *emotionally*" (p.694) involved in their work. Another definition, where engagement is seen as the antipode of burnout, is stated by Schaufeli, Salanova, González-Romá, and Bakker (2002) where they define engagement as "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (p.74). Compared to Kahn's (1990) definition, this one elaborates on the cognitive aspect of engagement and describes concrete states of mind. In this definition, *vigor* describes an energized state with high levels of effort and mental resilience even when encountering challenges (Schaufeli et al., 2002). *Dedication* represents a state of passion and commitment that compared to involvement indicates a higher level of identification and includes the affective dimension of feelings and emotions (Schaufeli et al., 2002). Finally, *absorption* describes a state of high concentration delving into the task (Schaufeli et al., 2002).

Numerous additional descriptions and definitions for engagement can be found in the literature. Most of them focus on Kahn's (1990) cognitive dimension of engagement. Maslach, Schaufeli, and Leiter (2001) characterize engagement as a state with "high levels of activation and pleasure" (p.417), two dimensions that have also been used to describe one's mood (Watson & Tellegen, 1985). The two dimensions resemble to some extent the two aspects of vigor and dedication used by Schaufeli et al. (2002) to define engagement. Rothbard (2001) on the other hand, focuses on the term *role engagement* and states the two essential components of "attention and absorption" (p.656), whereby "attention refers to cognitive availability and the amount of time one spends thinking about a role [... and] absorption means being engrossed in a role and refers to the intensity of one's focus on a role" (p.656). There is a clear connection between these two aspects and the two states of dedication and absorption used by Schaufeli et al. (2002).

All these different definitions demonstrate that there is no standardized meaning of engagement since every definition uses its own sub-components to describe it (Imperatori, 2017). Given the

fact that the majority of definitions have common features one can state in a simplified way that engagement occurs when people are fully involved in their work (Imperatori, 2017). In order to decode the meaning of being fully involved, we present here a more comprehensive definition of engagement that draws mainly from the definitions of Kahn (1990) and Schaufeli et al. (2002). Using these two concepts we provide an exhaustive definition of engagement where most of the above-mentioned definitions are entailed. Our comprehensive definition of engagement uses the three states of vigor, dedication, and absorption as described by Schaufeli et al. (2002) to clarify the concept of involvement. To be fully engaged one must live up to these three states in multiple dimensions. The dimensions we refer to here are Kahn's (1990) physical, cognitive, and emotional dimensions. Due to our study's focus on project teams, engagement in this context is also characterized by interactions within the team. Therefore, we complement Kahn's dimensions with a fourth dimension - the social dimension. In conclusion, we define engagement as being fully involved, characterized by the three states of vigor, dedication, and absorption, across the physical, cognitive, emotional, and social dimension. This comprehensive definition is illustrated in Figure 1 and will serve as the definition of engagement for this study.
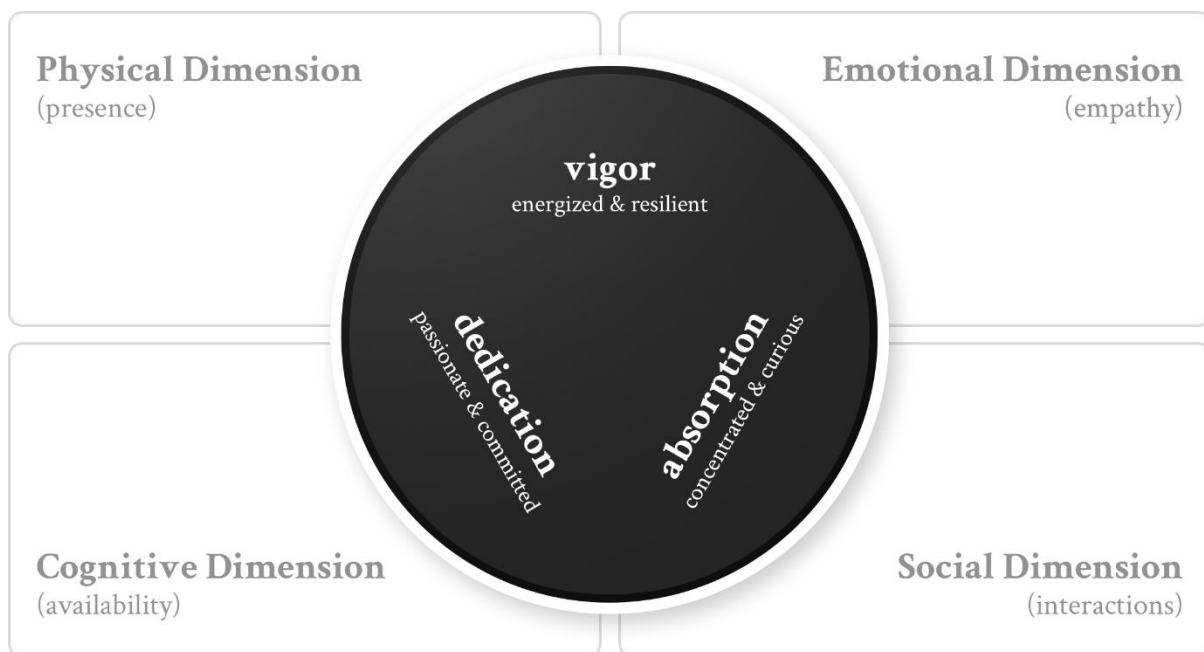
Figure 1: Comprehensive definition of engagement

Engagement driving factors

Since the positive effects of engagement have been shown by numerous studies (Maslach & Leiter, 1997; Sorenson, 2013; Kumar & Pansari, 2015; Anand, 2017), researchers have studied the antecedents of engagement. Similar to the number of definitions, there is a vast range of precursors connected to engagement. These precursors will help us to form a list of engagement driving factors that will be investigated in this study.

A holistic approach was developed by Kahn (1990), proposing three conditions as the antecedents of engagement: meaningfulness, safety, and availability. This means people need to see the purpose of the task they are performing and feel valued and useful by doing so; they need to feel psychologically safe to get actively involved, and they need the physical, emotional and psychological resources available that are required to fulfill the task (Kahn, 1990). Consequently, the fulfillment of these three conditions should lead to engagement. In the same category of the motivational approach fall the following aspects have shown to have a positive effect on engagement: Role fit, trust, relationships with and support from co-workers as well as supervisors (Imperatori, 2017).

Another approach is proposed by Bakker and Demerouti (2007) using their "job demands-resources model" (p.312) to distinguish between aspects of a job that need physical or psychological effort (job demands) and aspects that support one's completion of a task or increase one's learning or self-development (job resources). Bakker and Demerouti (2007) relate resources that support one's completion of a task to extrinsic motivation, while resources that increase one's learning or self-development are related to intrinsic motivation. In their framework, job resources (e.g. empowerment, autonomy, control, support, recognition, constructive feedback, role/job clarity, or a positive work environment) raise motivation and lead to a boost in engagement, while job demands (e.g. work overload) put a strain on the employee. In this context, empowerment is understood as the person's possession of autonomy, responsibility, decision-making authority, trust from co-workers and supervisors, and adequate resources (Imperatori, 2017; Lee, Idris, & Delfabbro, 2017).

An additional approach to describe the antecedents of engagement is provided by social exchange theory. Social exchange theory implies that interactions create obligations that lead to reciprocal exchange, in this case meaning that employees engage according to the level of resources and benefits received from the organization (Saks, 2006). In this context, perceived fairness is highly important since an employee will assess the fairness of the exchange and adjust the level of engagement accordingly (Imperatori, 2017). Related to fairness is the extent to which an employee's voice is heard and taken into account for decision making (Imperatori, 2017).

Maslach, Schaufeli, and Leiter (2001) argue that engagement is the opposite of burnout, and therefore, they use the Maslach Burnout Inventory (MBI) metrics from burnout measurement to assess the level of engagement. According to their research, engagement is associated with "sustainable workload, feelings of choice and control, appropriate recognition and reward, a supportive work community, fairness and justice, and meaningful and valued work" (p.417). Therefore, these characteristics can be seen as antecedents of engagement.

Saks (2006) groups the antecedents of the existing literature into four categories: (1) job characteristics, (2) rewards and recognition, (3) perceived organizational and supervisor support, (4) and distributive and procedural justice. He allocates Kahn's (1990) concept of psychological meaningfulness to *job characteristics* and expands it by aspects such as perceived return on investment, challenging and varying tasks, need for various skills, the possibility for contribution, and significance of the task. *Rewards and recognition* can also be related to the expected return on investment, while psychological safety, as well as a trusting and supportive environment, are relevant for the *perceived organizational and supervisor support*. In the last group of engagement antecedents, *distributive and procedural justice*, Saks relates to the perceived fairness in terms of reward allocations as well as the transparency of these distributions.

From the broad variety of reviewed research, we extracted engagement driving factors that are listed below. These factors constitute the first part of all the engagement driving factors that were studied in this research.

- Meaningfulness of task (is the task meaningful to you?)
- Psychological safety (you feel safe to speak up)
- Emotional availability (are you mentally ready to dive into the task)
- Having adequate resources to manage the task (budget, tools, instruments, competences)
- Significance of task (your task is very important for the project outcome)
- Autonomy in decision making
- Individual responsibility for a task (you're the only one responsible for that task)
- Work with people you like (camaraderie)
- Trust of fellow team members in you and your work
- Task clarity (how well you understand your task)
- Role clarity (how well you understand your role and its responsibilities)
- Feeling valued and involved (recognition)
- Supportive environment (you receive support from your colleagues/organization)
- Collaborative work style (tackling tasks together)
- Equal opportunities for all project members
- Possibility for social interactions (e.g. coffee breaks)
- Your fellow team members are interested in building a personal relationship with you

While the approaches mentioned in this section are aiming for universally valid antecedents of engagement, i.e. applicable for everyone, Larsson and Kling (2017a) established clusters of engagement drivers and killers that differ depending on one's career type. The concept of career types as well as its relation with engagement is presented in the next section.

2.3. Career Concept Model

For centuries theorists have studied why and how individuals occupy themselves and what life courses they take (Gunz & Peiperl, 2007). However, it was not until the late 1970s when this field of study entered a catalytic period as numerous influential papers were published and a number of discussions ignited among organizational scholars, according to Gunz and Peiperl (2007). Therefore, this point in time is commonly considered the origin of contemporary career theory (Arthur, Hall, & Lawrence, 1989). Fortifying this period's significance for contemporary career theory studies is that from that point on a common definition of the term *career* was established, Gunz and Peiperl state (2007). It was the Oxford English Dictionary's (1933 cited in Gunz & Peiperl, 2007) definition of a career - as "a course of professional life or employment, which affords the opportunity for progress or advancement in the world" (chapter 2, p.2) - that gradually gained wider international acceptance after initially being mostly used in Britain (Gunz & Peiperl, 2007).

As multiple fields of study can inform career theory (Schein, 1989 cited in Gunz & Peiperl, 2007) scholars distinguish between different approaches to career theory based on different intellectual disciplines (Gunz and Peiperl, 2007). The career model that is used in this research is considered to originate from the discipline of psychology and was developed by Michael J. Driver (Michael J. Driver, 1979, 1980 cited in Larsson, Brousseau, Kling, Sweet, 2007, p.363). Driver is considered to hold a developmental perspective on career theory which means that in his career concept model, a career is believed to be a "dynamic and changing process, in which different needs, values, and motivators are prioritized at different stages over the life course" (Gunz & Peiperl, 2007, p.33).

Since its origin, the model has been refined by several researchers such as Kenneth Brousseau and Rikard Larsson, to use the model to characterize individuals' views of careers. Based on a pluralistic approach, the career concept model moves away from the traditional single-lane approach of "a steady progression toward positions of increasing authority and responsibility" (Brousseau, Driver, Eneroth & Larsson, 1996, p.56). Instead, it offers four different types of career concepts that distinguish through their "direction and frequency of movement within and across different kinds of work overtime" (Brousseau et al., 1996, p.56). The four types are outlined in Table 1.

Career concept	Expert	Linear	Spiral	Transitory
Duration in field	Life	Variable	5-10 years	2-4 years
Direction	In-depth	Upward	Lateral related	Unrelated

Expert. Career choice is made once for a lifetime, commitment to an occupation, "upward" advancement is less definitive of success than is "mastering" of the skills, knowledge, and work of the expert's choice.

Linear. Career choice focuses on upward movement on an externally defined "ladder" (such as a managerial hierarchy) with infrequent (rare) changes in career field, while upward promotions are desired as frequently as possible.

Spiral. Career choice evolves through a series of occupations (with moderate, five-to-ten year, duration in each) where each new choice builds on past choices to develop new skills (lateral related movement).

Transitory. Career choice involves frequent change of field, organizations, and jobs (one-to-four year intervals) with variety of experience being a dominant force (unrelated movement in multiple directions).

Table 1: The four career concepts (Larsson, Brousseau, Kling & Sweet, 2007, p.364)

These four basic career concepts held by individuals are also empirically linked to motivational differences (Larsson, Brousseau, Driver, Holmqvist, & Tarnovskaya, 2003). Larsson and Kling (2017) argue that "everybody has their individual engagement drivers that give them inspiration and energy" (p.7). Depending on one's career type, people prefer certain ways of working which increase their engagement (engagement drivers). Consequently, if people have to work in a way that does not suit them, this decreases their engagement (engagement killers). While Spirals seek self-development and creativity, Experts desire in-depth competences and security, Linears relate to needs for power and advancement, and Transitory concepts quest novelty and independence (Larsson et al., 2003). Table 2 displays some of the most common engagement drivers and killers for every career type.

	Expert	Linear	Spiral	Transitory
Drivers	Specialization Stable refinement of quality Long-term security	Improved efficiency Competitive leadership Many challenges	Creative teamwork Skill diversity People development	New places Job rotation Freedom from close supervision
Killers	Disruptive changes Short term "anything goes" Poor quality	Lack of clear goals Indecision Poor performance	Destructive conflicts Narrow-mindedness Simple routines	"Stuck in the same old rut" Strict rules Detailed long-term planning

Table 2: Engagement drivers and killers for each career type (Larsson & Kling, 2017a, p.15)

These factors form the basis of the second part of engagement factors that were investigated in this study. To implement the aforesaid career type-specific engagement factors in our study we rephrased them. This was necessary to pose more precise and tangible survey questions, to avoid participants to be confused, and to cater towards the project team scope. Table 3 presents the rephrased engagement factors that were studied in this research.

	Expert	Linear	Spiral	Transitory
Drivers	Task requires you to dive deep into a topic Pushing further and further to improve quality Stable work environment (few changes in structure/organization)	High efficiency Competitive work environment / culture Challenging tasks	Tasks that require creativity Tasks that require a variety of your skills Tasks with personal development opportunity	Changing work environment (physical place you work in) Frequent rotation of task/role High independence/autonomy
Killers	Delivering in favor of speed over product quality Disruptive change	Lack of clear goals Iterating multiple times to eventually make the most educated decision possible Poor performance	Intensive conflicts Narrow-minded project members Simple routines	"We have always done it that way" - mentality Strict rules Detailed long-term planning

Table 3: Rephrased engagement factors based on Larsson & Kling (2017a, p.15)

Underlying the model holds the belief that most of us develop diverse concepts of an ideal career and that these concepts steer our career decisions and behavior at work (Larsson, Brousseau, Kling & Sweet, 2007). An individual's concept of an ideal career is, therefore, not seldom a mix of multiple career concepts (Larsson et al., 2007) as the four concepts are not mutually exclusive but rather "can be combined [...] to form hybrid concepts" (Brousseau et al., 1996, p.56). Through a test, the primary career concepts of an individual's career profile can be determined (Larsson et al., 2007).

What research has shown also, is that a discrepancy can exist between what we think is the ideal career orientation for us to pursue and what we deeply desire in our hearts (Larsson & Kling, 2017a). To represent this divergence, the career model differentiates between career concepts and career motives (Larsson & Kling, 2017a). Our career concepts, what we believe is the right career to pursue, are significantly influenced by our surroundings, while our career motives correspond to what we find most engaging, according to Larsson and Kling (2017a). The authors conclude further that the more the work matches your career motive, the more engaged you are in your work. Therefore, the authors claim, following a career orientation that corresponds to one's career motives yields more engagement.

The model's differentiation between career concepts and motives enables furthermore to determine an individual's level of career self-awareness (Larsson & Kling, 2017a). The aforesaid test identifies on the one hand which career concepts the individual views more ideal and on the other hand by which set of career motives the individual is the most engaged by (Larsson & Kling, 2017a). How much your concept and motive correspond determines your level of career self-awareness. A detailed instruction on how the level of career self-awareness can be assessed is outlined in the Data Analysis Section of the Methodology Chapter.

3. Methodology

This chapter describes and justifies the chosen methodological approach for the research project. It encompasses the general research approach and design, as well as the outline of the data collection and analysis. Finally, the study's validity and reliability, as well as the authors' reflexivity are discussed.

3.1. Research Philosophy

Research philosophy is concerned with the construction of knowledge (Saunders, Lewis, & Thornhill, 2009). According to Easterby-Smith's, Thorpe's, and Jackson's (2015) categorization of ontologies, this study follows a relativism approach, where "facts depend on [the] viewpoint of [the] observer" (p.50) since the findings will be based on perceptions of the studied participants and the observers. Therefore, the study pursues a constructionist epistemological approach, assuming that different realities might exist (Easterby-Smiths, Thorpe, & Jackson, 2015).

3.2. Research Approach

The study follows an abductive approach using the collected data to create plausible hypotheses (Easterby-Smiths, Thorpe, & Jackson, 2015) on the effectiveness of different engagement drivers, excluding conventional means to reward or punish, as well as on the relation between the effectiveness and career orientation or career self-awareness. The abductive approach's swaying between the inductive approach and the hypothetical or deductive approach (Given, 2008) uses theories and frameworks from existing research while still allowing for a deeper understanding of the meanings and context and therefore conceding that the researchers are part of the research process and consequently influence the outcome (Saunders, Lewis, & Thornhill, 2009).

3.3. Research Design

The research is based on a case study strategy, investigating a student project. By choosing a mixed-methods approach, a wide variety of views and experiences can be explored ensuring the exposure of different perspectives. The use of different methods increases the validity and credibility of the results and has the potential to uncover deeper insights related to the research question (Easterby-Smiths, Thorpe, & Jackson, 2015). By assessing relevant views and experiences after the study project has been finished but reflecting on the whole length of the experience the study has a cross-sectional time horizon that contains some longitudinal aspects. Therefore, different techniques are used, namely a survey, a test, observations, and interviews. The survey and test are of a quantitative form, while the observations and interviews are qualitative. Table 4 summarizes the design characteristics of the study. Since the qualitative methods are trying to explain the reasons behind answers in the quantitative methods and thereby trying to compensate for the weaknesses of the quantitative methods, the mixed-methods approach has a compensatory design (Easterby-Smiths, Thorpe, & Jackson, 2015).

Philosophy	Approach	Strategy	Choice	Time horizon	Techniques
Interpretivism	Abductive	Case study	Mixed-methods	Cross-sectional with some longitudinal aspects	Survey, test, observations, and interviews

Table 4: Classification of the study according to Saunders, Lewis, and Thornhill (2009)

3.4. Data Collection Methods

This section outlines what kind of data was collected and what methods were used to achieve that. A broad variety of different methods are used, as this increases the validity and credibility of the results and additionally has the potential to offer a deeper understanding of the topic surrounded by the research question (Easterby-Smiths, Thorpe, & Jackson, 2015). The data collection consists of four parts: survey, career model test, observations, and interviews. The participants were exposed to the data collection methods in the following order: During the project, the observations were made, after finishing the project the participants answered the survey, followed by the career model test. The time-wise last element of the data collection method was the interviews that were conducted. The survey, test, and interviews all took part within several weeks. Apart from conducting the interviews at last, the order of the data collection methods does not have an impact on the study. In the following, the data methods are presented in the order that is most suitable for the data analysis.

Background information - the studied project and sample

In this research, the engagement behaviors of 15 Master in Management students in one specific project at Lund University School of Economics and Management were studied retrospectively. The project was a mandatory element of the 2019/2020 Master in Management program. It lasted five months and was one of multiple academic occupations the students were involved in simultaneously at that point in time. We, the authors conducting this study, were also members of this project team and are included in the count of the 15 students. Having been active participants in the project enabled us to include retrospective observations that increase the variety of views and experiences but also expose different perspectives, which will enable us to understand other people's realities and eventually increase the quality of the study (Easterby-Smiths, Thorpe, & Jackson, 2015). The drawbacks associated with our participation are discussed in the Reflexivity Section at the end of this chapter.

The studied sample consists of eight female and seven male, Western students, in the age of 23 to 30, and academic backgrounds in social sciences, engineering, and arts. The considerably small sample size of 15 students allowed us to approach our research question quantitatively as well as qualitatively. While a large sample size would have increased the research's generalizability, it also

would have decreased the depth of the research, as the given timeframe would not have allowed us to employ both research methods to a meaningful extent.

Instead of using an elaborate sampling technique to confine a sample, we looked at the entire project team in-depth and over a period of time, which renders this research a case study (Easterby-Smiths, Thorpe, & Jackson, 2015). Availability was a vital factor for choosing the sample to be studied as we conducted this research during a global health crisis that made it increasingly difficult to gather data. Resorting to a project we had been part of ourselves, therefore, was in our opinion the most practicable approach to collect data.

Further reasons to study the students in this particular project were the circumstances and characteristics of the project itself. The project featured all the aspects previously outlined to characterize a project team, i.e. a specified scope, limited timeframe, a lack of hierarchies, diverse composition, combined with considerable amounts of both uncertainty and urgency. The project team did not have a power structure nor an assigned leader. Also, the overall objective was pre-defined by the project owner, who was at no point in direct contact with the team nor influenced the team's approach to the task. Furthermore, the outcome of the project, for example, did not influence the students' grades and therefore the project can be defined as a *low-stake project* (DeLuca, Fox, Johnson, & Kogen, 2002). We assume that all these factors interplayed with the engagement of the team members, which is why this project is particularly interesting to study given our research objective. As the students should not have felt inclined to engage out of reasons of evaluation and as there was no possibility to increase engagement through rewarding or changing the job's characteristics (known drivers of engagement, studied by Saks, 2006) this project, therefore, provided the ideal circumstances for our study.

Over the course of the project, the 15 students met multiple times to work together in a big group but also fewer times in smaller groups due to the division of labor towards the end of the project. Our participatory observations (one of four data collection methods of this research) are, therefore, limited to the meetings and working sessions we had been part of.

Due to the special characteristics of the university project, we compiled a list of additional factors we assume to have had an impact on the engagement of the project members. The factors are outlined in the following list. These factors will be examined like the previously stated engagement factors and therefore constitute the third and last part of investigated engagement factors.

- Low stakes (e.g. no influence of project outcome on your grade)
- Short project (duration) with a high workload
- Long project (duration) with low workload

- Shared responsibility across the team
- Necessity to self-organize your group and project
- Fellow team members take on a lot of tasks
- Having an assigned project leader

Career model test

Decision Dynamics' career model test was used to assess the participants' career concepts and motives. Besides revealing what types of career, the participants idealize and are most motivated by, the test also provided the input to assess the individuals' level of career self-awareness. The test was conducted online by each participant individually. It consists of several questions that are answered by selecting the answer that is the most applicable for oneself out of multiple response options. The questions are based on Driver's *Career Concept Questionnaire* (Michael J. Driver, 1979, 1980 cited in Larsson et al., 2007) and they aim to identify the participant's preferences towards the three dimensions that differentiate the four career types: frequency of job change, direction of movement, and type of change in job content. This questionnaire has been applied by numerous researchers, such as Driver and Coombs (1983 cited in Larsson et al., 2007) and Larsson et al. (2003) and has been validated by Coombs (1989).

Observations

The observations are used as a complementary data gathering tool for the survey and test. The main objective of the observations is to assess how the participants were perceived during the university project. The form of the observations is participatory and retrospective because we were actively taking part in the university project and the project was already finished when we chose the topic for this study. Looking back at situations in the project individually, we aim to match our findings to distinguish intersubjective from subjective observations. Both forms of observations are valuable and will, therefore, complement our findings, as there may be multiple realities that can only be included through multiple perspectives according to the chosen research paradigm (Easterby-Smiths, Thorpe, & Jackson, 2015).

Survey

The first way of collecting primary data is through an online survey. The survey is divided into four parts that aim at giving insights into different areas:

1. Demographics: Questions about age, gender, nationality, and study or work background
2. Questions about the perceived extent of present factors during the university project:
   - How was the level of stakes perceived in the project?
   - What levels of leadership and psychological safety were perceived?
   - How was the extent of enjoyment as well as personal learning while working on the project?

3. Self-assessment of one's behavior in the university project: Characterizing each student's behavior according to Larsson's and Kling's (2017b) career-specific competencies as well as the level of one's overall individual engagement in the project
4. Self-assessment of the effect of engagement factors on one's individual engagement in project work (not specifically related to the university project). These factors originate from three sources. The first part stems from the extensive literature review on engagement antecedents (listed in Chapter 2.2). The second part was derived from Larsson and Kling's (2017a) engagement drivers and killers (cf. Chapter 2.3 Table 3). The third and last part originates from the specific features of the university project and is listed in the Background Information Section in this chapter. An exhaustive list of all the investigated engagement factors can be found in the Appendix.

While part one consists of open-ended questions, part two, three, and four are all answered on a numeric rating scale either from 1 to 9 or from -4 to 4. In part two and three, the extremes of the rating scale are labeled symmetrically with "very little" and "very much", while in part four, they are labeled with "very demotivating" and "very motivating". The rating scale is used as it gives a high resolution of the results and the respondents have the option to choose the middle. Part two and three are aiming at giving insights related to the university project, while part four examines a broader, more general setting. Due to the form of the survey, the quality of the responses relies heavily on the self-assessment capabilities of the respondents.

Interviews

Finally, in the interviews, the results from the survey, test, and observations will be elaborated in more detail in order to get qualitative insights from the participants. While the survey gives answers to *what* the participants did, liked, or experienced, the interviews are aimed at *why* this was the case. The interviews are of a mixed-methods approach, using both structured as well as semi-structured questions. Three topics are covered in the interviews. Table 5 outlines the topics as well as the classification of each part of the interview according to Saunders, Lewis, and Thornhill (2009).

Part	Topic/aim	Structure	Type
1	Find out the primary career concept and motive in case the career model test identified multiple ones.	Structured	Descriptive
2	Explore the reasons for unexpected results of the engagement drivers and killers (e.g. widespread in scoring) from the survey outcome to identify mutual characteristics among similarly scoring participants.	Semi-structured	Explanatory
3	Identify additional engagement driving factors.	Semi-structured	Exploratory

Table 5: Topics covered in the interviews

Part one is of a structured approach since the interviewee has to choose from a set of pre-coded answers. In contrast, the two last parts are of a semi-structured approach, since the questions are predefined but of an explorative and open-ended form in order to encourage the interviewee to talk about the topic in more depth and explain the reasonings. In part two, only engagement driving factors that are non-universal (not everyone is engaged by these factors) and not career type-specific are examined since this was expected to yield the most insightful results. Furthermore, the questions were restricted to seven engagement driving factors that were chosen based on the survey results to allow us to go more in-depth on the reasoning of the participants.

To generate insightful data an *interview guide* (King & Hugh-Jones, 2018) was developed that contained all relevant questions to be asked in the interview for part one, two, and three. While we were eager to get answers to our questions, we also tried to remain flexible to react to the interviewees' responses in an effort to engage with the interviewees in the interview. According to King and Hugh-Jones (2018), this is an important measure to get an understanding of the interviewee's view of reality, which is the "essence of good interviewing" (p.134). By interviewing each other first we gained experiences that we used to refine our interview guide and questioning style before conducting further interviews.

The group of interviewees was generated as a random sample of nine study participants. The interviews were conducted online using different video meeting tools, depending on the preference of the interviewees. For the transcription of the interviews, the digital tool "Otter.ai" was employed to record and automatically transform audio into text. Immediately after the interviews we revisited the automatically generated transcript and compared it to the audio recording to correct transcription mistakes.

3.5. Data Analysis

This section describes the process of analyzing the data. This includes data collected through the survey, career model test, observations, and interviews. The methods to analyze the data are presented in the following sections and differ depending on whether we analyze quantitative or qualitative data.

First, we analyzed the data separately per source to get first findings as well as to find and define parameters and variables. Afterward, all these parameters and variables are compared to each other to find correlations that reveal hints about the characteristics of the studied sample. Due to the research design, we are not able to infer causality from correlation because we did not have experimental control. In the following sections, first, the analysis procedure of the career model test results is presented, followed by the observations, the survey, and the interviews. In the final part, it will be explained how all parameters and variables are compared with each other in a comprehensive analysis.

Career model test

First, the results from the career model test, i.e. the career concept and motive, are used to identify the level of career self-awareness. A person's level of career self-awareness is high, when the type of career they believe they should pursue (career concept), converges with the career type they deeply desire to pursue (career motive). In turn, the further the career concept and motive diverge, the lower is the person's level of career self-awareness.

We use two measures to assess the participants' career self-awareness. Both measures use the results of the career model as a basis. By using both career self-awareness scores in our study, we expect to get additional insights. The first measure compares if the career concept the student considers the most ideal (primary career concept) matches with the career motive that engages him or her the most (primary career motive) following Larsson, Kling, Häggberg, and Månsson's (2016) approach to assess career self-awareness. The result of the measure is a simple yes (1) or no (0). Therefore, this measure is called the *binary career self-awareness score*. In the example below (cf. Figure 2) the student's primary career concept (highest blue bar) matches the student's primary career motive (highest red bar). According to the analysis logic of the binary career self-awareness score the student is considered career self-aware, i.e. binary career self-awareness score = 1. Figure 3 resembles the career model test results of another student. This student's primary career concept corresponds to a *Linear career* (highest blue bar) while he or she would be most engaged in an expert-oriented career. Therefore, this student is considered not aware, i.e. binary career self-awareness score = 0.
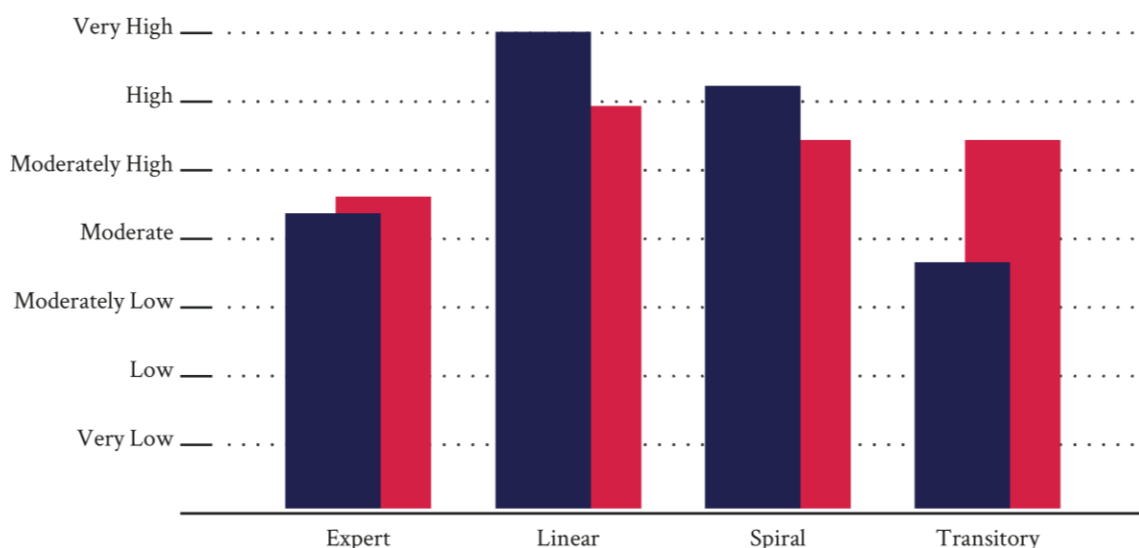
Figure 2: An example result from the career model test (career self-aware)
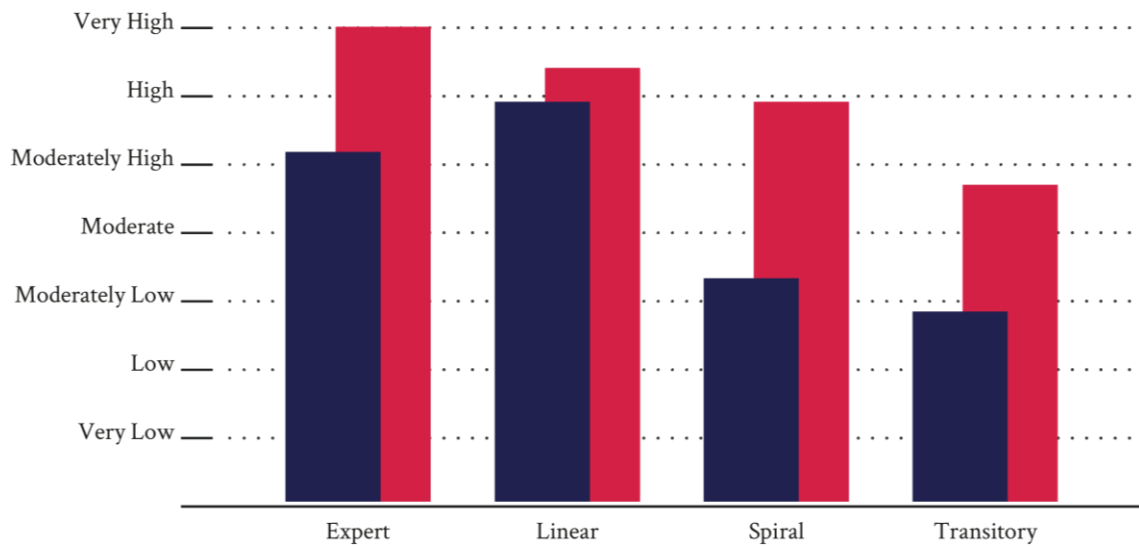
Figure 3: An example result from the career model test (not career self-aware)

If there are multiple primary bars of the same color (cf. Figure 4), we will try to identify the student's primary type of career motive or concept in the interview. An example can be seen in Figure 4, where the student idealizes the Linear and the Spiral career equally. After the primary career concept is identified through the interview the binary career self-awareness score will be adjusted.
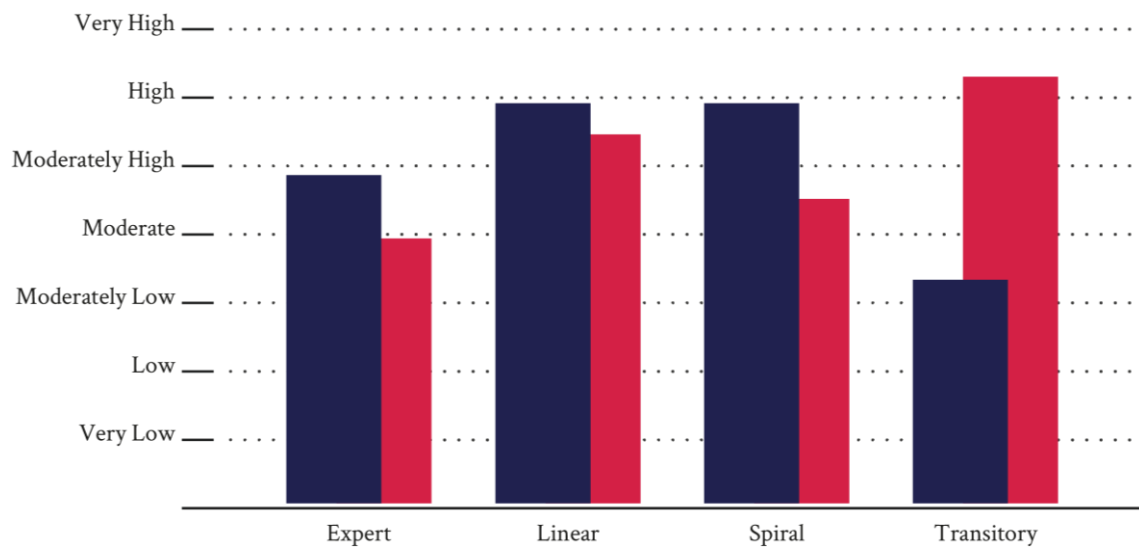
Figure 4: Example career model test result showing two primary career concepts (blue bars)

The second measure is called *congruence career self-awareness score*. This score sums up the differences between career concepts and motives for each type. The procedure is inspired by the statement of Larsson et al. (2016) that a "highly congruent pattern" in the graph corresponds to a "very high career self-awareness" (p.5). The score is adjusted to indicate 1 as the highest level of

career self-awareness (i.e. no differences in bar heights), while 0 indicates the lowest level of career self-awareness (i.e. the maximum possible sum of differences). This more detailed approach to measuring career self-awareness enables one to determine the participant's level of career self-awareness rather than solely stating whether he or she is career self-aware or not. Figure 5 displays how the congruence career self-awareness score is being calculated.

$$\text{Congruence career self-awareness score} = 1 - \sum_{i=[1,4]} \frac{|concept_{bar\ height} - motive_{bar\ height}|}{4 \cdot \text{maximal bar height}}$$
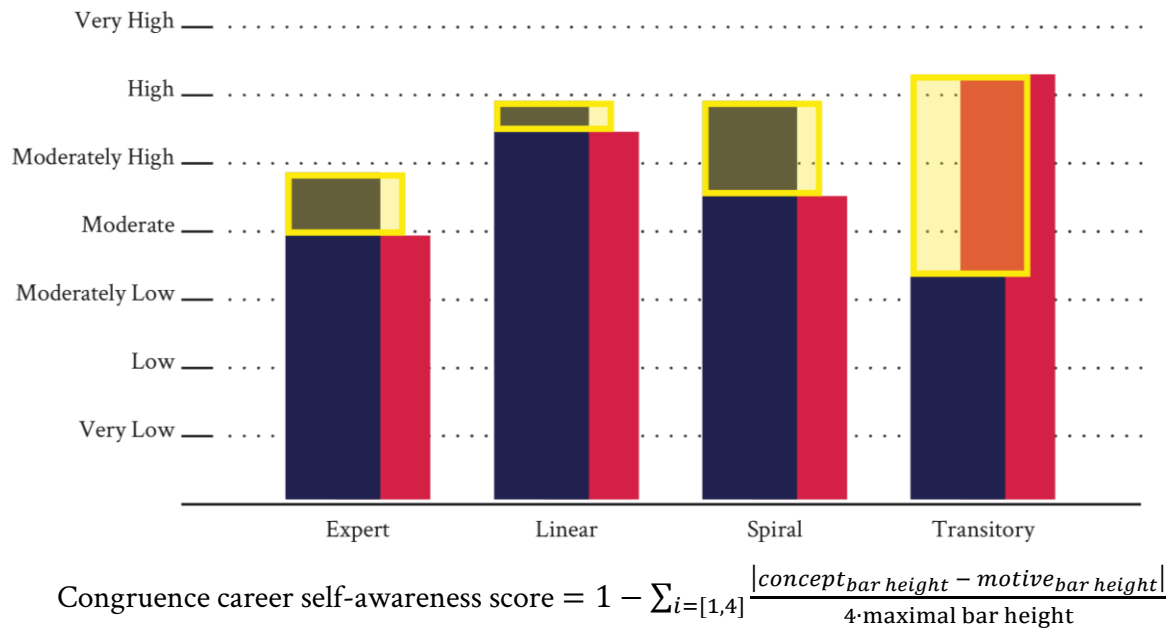
Figure 5: Example of how the congruence career self-awareness score is calculated

Observations

To define how the participants' engagement was perceived we characterized their behavior according to the four career types. First, we defined career type-specific behaviors based on Larsson's and Kling's (2017b) career type-specific competencies (cf. Table 6).

Career type	Expert	Linear	Spiral	Transitory
Behavior	Dive deep into a task	Driving towards goals	Crossing boundaries/challenge limitations	Changing tasks frequently
	Refining quality	Take on responsibilities and authority (e.g. moderation, facilitation)	Foster teamwork	Speeding up / learning quickly
	Establishing procedures	Optimizing way of organizational form and structure	Broadening your own competences	Connecting with people

Table 6: Career type-specific behavior derived from Larsson's and Kling's (2017b)

Then, retrospectively assessing the project, we extracted the situations where the participants were visibly engaged in the project and categorized their way of participating according to the previously defined career type-specific behaviors. Due to the nature of this methodology, our observations are restricted to the moments where we were present and recognized the participants' engagement. Due to that reason, the data gathered from the observations play only a complementary role in our study.

Assessing each situation where we recognized the participants' engagement, we identified if we perceived the participants as Experts, Linears, Spirals, or Transitories. By analyzing the observations in this way, the participants can appear as multiple career types. While they might have been perceived in one meeting as an Expert, in another they might have been perceived as a Spiral. In this case, this person would be classified as both an Expert and a Spiral. The fact that we were two observers enabled us to identify which of the career type-specific behaviors was the most dominant.

To avoid influencing each other's perceptions, we recorded our observations individually before comparing them together. To assess the dominance of each participant's career type-specific behavior we developed a scoring system, which is based on the amount and subjectivity of our observations. According to the amount of career type-specific moments of engagement each person's career type was weighed. Furthermore, a participant's moment of engagement which was perceived in the same way by both of us (intersubjective) was weighed double compared to an observation that is only based on one observer (subjective). As a result, the predominantly perceived career type of each participant was identified.

Survey

The survey is analyzed in two steps. In the first step, the investigated engagement drivers and killers are analyzed in terms of their effectiveness and universal applicability. In the second step, it is assessed how the participants engaged in the project, according to themselves. There we looked at in what way they engaged (according to what career type).

The first step aims to identify the most relevant engagement drivers and killers as well as distinguishing between universal and conditional factors. Universal factors are the ones that are considered to be an engagement driver or killer for the vast majority of people. In our study, we defined universal engagement drivers as the ones that contain all the survey responses in the engaging domain (i.e. scale 1,2,3, and 4) with a maximum of one participant deviating. An example of a universal engagement driver can be seen in Figure 6. The contrary holds true for universal engagement killers. Universal engagement killers are defined as the ones that contain all the survey responses in the disengaging domain (i.e. scale -4,-3,-2, and -1) with a maximum of one participant deviating (cf. Figure 7). The remaining factors are considered to be conditional

factors. Conditional means that these factors can be either an engagement driver or killer depending on the individual (an example is shown in Figure 8).

After we distinguished between universal and conditional engagement factors as well as whether they drive or kill engagement, we ranked them according to their effectiveness. To determine how effective these factors are, we considered the average score of the responses. To do so we added all 15 responses ranging from minus four to four and then divided the sum by the number of participants (15). In the case of an engagement driver, the higher the average, the higher the effectiveness. The opposite holds true for engagement killers.

Challenging tasks
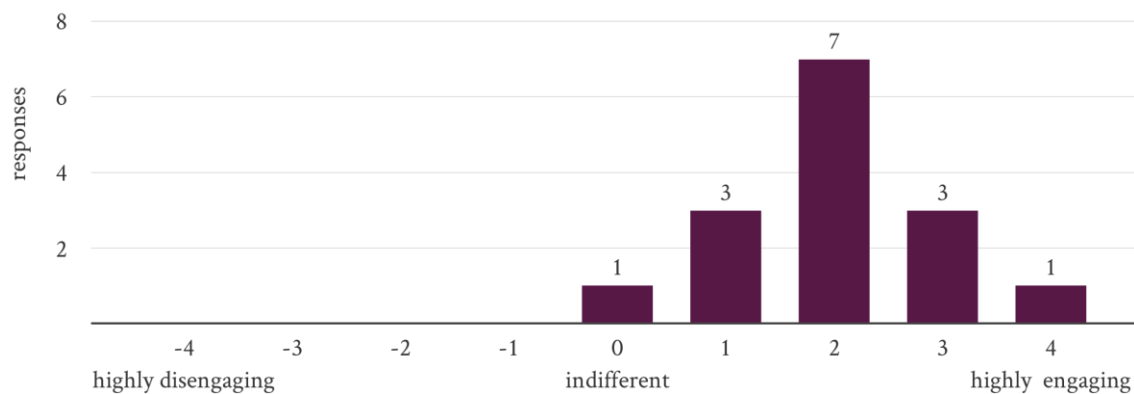
Figure 6: Example of a universal engagement driver

Narrow-minded project members
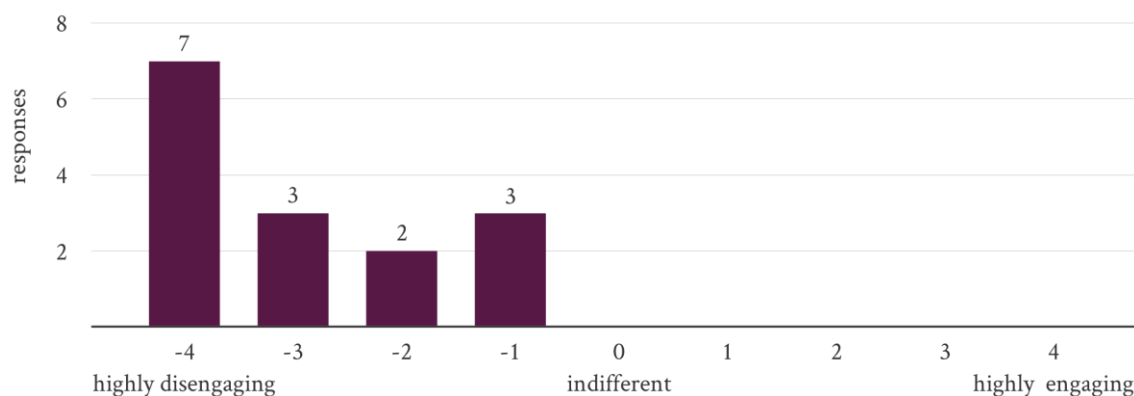
Figure 7: Example of a universal engagement killer

Detailed long-term planning
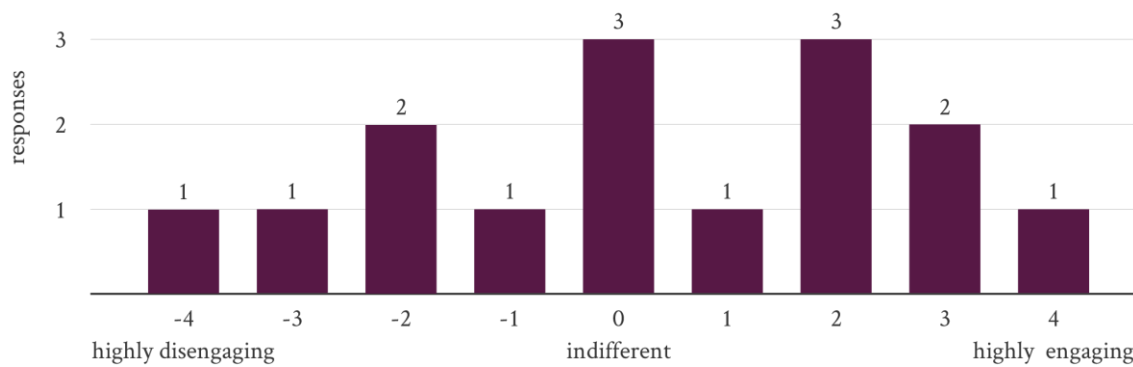
Figure 8: Example of a conditional engagement factor

In step two, the participants' behaviors in the project are analyzed. To do so, behaviors that originate from career type-specific competencies developed by Larsson and Kling (2017b) were addressed in the survey and the participants had to characterize their engagement based on these behaviors. Since every participant rated his or her engagement behavior on a scale from one to nine for each career type-specific behavior, these points could be summed per career type, thereby, giving a score for each career type per participant. Consequently, the career type with the highest score is considered to have been the participant's dominating type of behavior during the case study according to each participant's self-assessment.

Interviews

The interviews will be analyzed in three different ways for each specific part of the interview. The first part of the interviews, to find out the primary career concept and motive in case of the career model test identified multiple ones, does not need an elaborate analysis since it is of a descriptive type. The chosen career concept and/or motive are used directly to complement the findings from the career model test.

The second part of the interviews, to identify mutual characteristics among participants scoring similarly in the engagement drivers and killers, was analyzed using "first-order and second-order concepts" (p.39) as described by Van Maanen (1983). According to Van Maanen's methodology, first-order concepts constitute the views and interpretations of the interviewees as well as the description of the situation while second-order concepts are the developed theories that are explaining patterns found in the first-order concepts. In the context of these interviews, first-order concepts are the interviewee's explanations of the motives behind their answers in the survey. These explanations in combination with the answers in the survey were analyzed for patterns. Afterward, these patterns formed the basis to generate hypotheses which are called second-order concepts. Ideally, there were similar reasons for participants assessing the

effectiveness of engagement drivers similarly. The formulated hypotheses give insights into the characteristics of people that share similar conditional engagement driving factors.

The third and last part of the interviews, to identify additional engagement driving factors, will only be used to complement the existing engagement driver catalog. Therefore, the keywords in the interviewees' answers are assessed and then compared with the existing engagement driver catalog. New concepts that were not in the catalog so far are listed in the findings and should be assessed for their effectiveness in future research.

Comprehensive analysis

After the individual analysis of each data collection method, the data will be compared comprehensively across all data collection methods. The main objective of this part of the analysis is to identify whether people who are motivated to engage by the same conditional drivers show mutual characteristics. Additionally, it offers the possibility to identify complementary findings.

To identify whether people who are motivated to engage by the same conditional drivers show mutual characteristics, we searched for correlations between the answers concerning the effectiveness of conditional engagement drivers and other variables. To identify potential correlations, we plotted a variety of different diagrams for each combination of variables by using *Excel's* data visualization tools. The variables are outlined in Table 7, organized by the different research sources we gathered them from. Each variable represents a characteristic that the people that answered similarly to the effectiveness of the engagement drivers and killers might have in common.

Survey	Career Model Test*	Observations
Self-assessed engagement behavior type	Career self-awareness (binary)	Peer perceived engagement behavior
	Career self-awareness (congruence)	
Self-assessed level of engagement	Career concept	
	Career motive	
	*) findings from the interviews are used to complement these variables	

Table 7: Variables that are compared to the conditional engagement drivers

Additionally, to the main goal of the research, the collected data allows discovering complementary findings. We want to assess if there is a difference between the participants that are more or less career self-aware in terms of their behavior. Furthermore, it should be visible if the participants behaved according to their career concept, their motive, or completely different. The answers to the effectiveness of engagement drivers and killers can also be used to confirm the individuals' career motives.

3.6. Validity, Reliability, and Reflexivity

To increase the validity of the thesis, i.e. the accuracy of what is measured, multiple methodologies are used (Easterby-Smiths, Thorpe, & Jackson, 2015). However, it needs to be considered that the investigated sample group consists of a limited number of people and is very specific in terms of study and work background, age range, and nationalities. This confines the scope to which the findings of this study can be generalized. Furthermore, all the data from the survey, test, and interviews are subjective and rely on the respondent's ability for self-assessment. As part of the mixed-methods approach, the observations provide additional insights through an outside perspective, and therefore, increase the validity and credibility of the findings (Easterby-Smiths, Thorpe, & Jackson, 2015). As an additional means to increase validity, the survey is based on established theory (e.g. career model) or findings of previous studies (e.g. engagement antecedents, drivers, and killers). The survey questions are non-leading and worded as precisely as possible. The career model test is well established and based on existing knowledge. The observations cannot be objective, however, the opportunity to use two perspectives to form intersubjective observations increased the validity.

In order to ensure reliability, i.e. the consistency of the measurement, conditions within the project as well as during the testing are kept identical for all the participants. This means that all participants were given the same information and receive the same survey, test, and interview questions. However, for the observations, it was not possible to give every participant the same amount of attention due to numerous reasons such as different levels of assertiveness or different forms of interacting. To cope with that, the framework is standardized for all observations and interviews, and therefore, increases the reliability of the results.

Since this study entails some qualitative research methods, there is the need to discuss the topic of reflexivity. Reflexivity deals with the role of the researchers and how this affects the process and results of the study (Easterby-Smiths, Thorpe, & Jackson, 2015). Willig (2013) splits this topic into personal and epistemological reflexivity. Personal reflexivity is about the influence of one's values, past experiences, and beliefs on one's research (Willig, 2013). In this context, our previous experiences in work life as well as in the university project in particular have sparked our interest in the topic of engagement. At the same time, these experiences of limited engagement have also

created the belief that there is a need for engagement driving measures. This mindset has affected the shape of the research and might also have influenced the interpretation of the gathered data.

Another aspect is the circumstance that we have been actively taking part in the project in the same way as all the other students. We do realize that this might have impacted our view of reality, however, we believe that the benefits of additional insights gained by our participation as well as our deep understanding of the project characteristics outweigh the drawbacks. In this context, this study needed to be conducted by a pair providing two individual views of reality since that enabled us to identify our individual biases. In terms of epistemological reflexivity, i.e. the limits imposed by the research question or design (Willig, 2013), the mixed methods approach using several data collection methods was chosen to increase the bandwidth of potential findings. The last aspect of reflexivity is critical language awareness, i.e. the construction of a reality by putting an experience into words (Willig, 2013). In the context of this study, this aspect is especially important in the phrasing of the interview and survey questions. Therefore, we put a lot of effort in the neutral and precise phrasing of these questions.

4. Findings and Analysis

The first thing we want to present here is the studied sample group. Of the 15 studied students that all participated in the survey, 14 students participated also in the career model test. In the final data gathering part, i.e. determining the single primary career concept and motive, one student did not participate. Therefore, all the data that is related to the career type relies on these 13 participants. Presenting this sample, the results from the career model test, which determined the participants' career motives, career concepts, and levels of career self-awareness are shown in Table 8. The table shows how many students aspire to each career concept, how many students are motivated by each career motive, and how many students are career self-aware (fields on the diagonal line representing the binary career self-awareness). This represents the distribution of the studied sample. In the studied sample, five students out of the 13 are career self-aware according to the binary scoring system. This percentage of career self-aware people is in the same range as discovered by previous research (Larsson et al., 2016) conducted with thousands of participants.

Concept \ Motive	Expert	Linear	Spiral	Transitory	Sum
Expert	**0**	0	0	0	0
Linear	1	**3**	2	1	7
Spiral	1	1	**2**	1	5
Transitory	0	0	1	**0**	1
Sum	2	4	5	2	**13**

Table 8: Distribution of study participants according to primary career concept and motive

As can be seen in the table, the most dominant career concepts held by the students are Linear and Spiral, accounting for roughly 90% of the studied students. The career motives are more evenly distributed. However, the Spiral motive is predominant, accounting for almost 40% of the students, followed by the Linear motive with just a bit more than 30%. A previous study of Larsson et al. (2016) with more than 7000 Swedes shows that Linear motives account for roughly 14% while Expert motives make up roughly 28% of the Swedish population. Spiral and Transitory motives are similarly represented in the Swedish population as in the sample of this study. Even though Larsson et al. (2016) only studied Swedes, we assume that the large number of Linears and low amounts of Experts in our sample cannot only be explained by the diversity in nationalities of our study participants. We believe that the differences in the distributions are also influenced by the type of people attracted to the management graduate program where our study participants

are enrolled. It is important to consider this skewed distribution when the effectiveness of engagement factors is analyzed in the following. As about half of the investigated engagement factors originate from the career model and have been shown by previous studies (Larsson & Kling, 2017a) to have a strong effect on people holding certain career types. Therefore, we expect to find higher effectiveness of the Linear and Spiral engagement factors in the survey results.

4.1. Universal Engagement Factors

This section presents the universal engagement factors. Based on the survey results from the 15 study participants, we identified twelve universal engagement drivers out of the 47 factors that were investigated in this study. Universal engagement driving factors drive the engagement of all the study participants with a maximum of one participant deviating (cf. Figure 9). In Table 9, the universal engagement drivers are listed and ranked according to their effectiveness represented by the average score (highest degree of engagement: 4). These universal engagement factors are the most effective to influence project members' engagement.

While all career types show to be engaged by these factors, the gathered data allows additionally to describe which career types are the most and least engaged by nearly each factor. This is represented in the third and fourth columns of the table for every factor that showed a clear pattern in its effectiveness-distribution concerning the career types. To identify these patterns the primary career motives of the participants were considered. Only the career motives are examined since only the motives relate to a person's motivation to engage. Figure 9 provides an example of a universal engagement driver that is most engaging to Spirals and least engaging to Experts.

Trust of fellow team members in you and your work

Figure 9: An example of a universal driver that is unequally engaging to certain career types

Average score	Universal engagement driver	Most engaging for	Least engaging for
3.3	Work with people you like (camaraderie)	Linears, Experts, and Transitories	-
3.3	Individual responsibility for a task	Linears	-
3.2	Task clarity	Spirals and Linears	Transitories
3.2	Meaningfulness of task	Linears, Experts	Transitories
2.9	Trust of fellow team members in you and your work	Spirals	Experts
2.9	Feeling valued and involved (recognition)	Spirals and Linears	Experts
2.8	Supportive environment (you receive support from your colleagues /organization)	Spirals and Linears	Experts and Transitories
2.8	Role clarity (how well you understand your role and its responsibilities)	-	Transitories
2.7	Tasks that require a variety of your skills	Linears and Spirals	-
2.7	Tasks with personal development opportunity	Spirals	Experts and Transitories
2.6	Having adequate resources to manage the task (budget, tools, competences)	Spirals	Transitories
2.0	Challenging tasks	-	-

Table 9: List of universal engagement driving factors

Following the same procedure, we assessed universal engagement killers. Universal engagement killers have a disengaging effect on all the study participants with a maximum of one participant deviating (cf. Figure 7). Table 10 presents the universal engagement killers ranked according to their effectiveness represented by the average score (highest degree of disengagement: -4).

Average score	Universal engagement killer	Most disengaging for	Least disengaging for
-2.9	Lack of clear goals	-	Transitories
-2.9	Narrow-minded project members	-	-

Table 10: List of universal engagement killing factors

As predicted in the introduction to this chapter, the fact that the Linear and Spiral career types are overrepresented in the studied sample has influenced the composition of the universal engagement factors. Five of the universal factors have in previous studies (Larsson & Kling, 2017a) been shown to be particularly effective for the Linear and Spiral career types. Since these two career types are held by the majority of this study's sample, we are not surprised to find some of their specific drivers and killers in the list of universal engagement drivers and killers. The factors that belong to the Linear and Spiral career types are: Tasks that require a variety of your skills, tasks with personal development opportunities, challenging tasks, lack of clear goals, and narrow-minded project members. Most of the other career type-specific engagement factors, as expected, are classified as conditional engagement factors, since they are known to be most effective for specific career types.

Average score	Semi-universal engagement driver	Most engaging for	Least engaging for
2.7	Significance of task (task is very important for the project outcome)	Spirals	Transitories
2.6	Psychological safety (feeling safe to speak up)	-	Transitories
2.3	Collaborative work style (tackling tasks together)	Spirals and Linears	Transitories
2.3	Fellow team members are interested in building a personal relationship with you	-	-
2.2	Short project (duration) with a high workload	Linears	-
2.1	Emotional availability (are you mentally ready to dive into the task) *	Spirals and Linears	-
2.0	Task requires you to dive deep into a topic	Spirals	-
1.8	Equal opportunities for all project members	-	-
1.7	High independence / autonomy	Transitories	-
1.4	Autonomy in decision making	Transitories	-
1.4	Competitive work environment/culture	-	-
1.2	Having an assigned project leader	-	-
1.0	Fellow team members take on a lot of tasks	-	-

Table 11: List of semi-universal engagement driving factors

*) During the interviews, it became apparent that the scale was misinterpreted for the engagement factor *emotional availability.* The verbal responses of the participants scoring below 0 have mentioned that the factor is not demotivating them to engage but rather is considered not relevant. Therefore, the survey answers have been adjusted according to the answers in the interviews.

Initially, the remaining factors were considered to be conditional engagement factors, meaning that these are engaging for some but disengaging for others. However, analyzing the results, we discovered several additional factors that can be clearly assigned to be either an engagement killer or driver for the majority of the study's participants. We call these factors semi-universal engagement factors. In contrast to the universal factors, some people were not affected by these semi-universal factors. We defined the semi-universal engagement drivers as the ones that contain all the survey responses in the engaging and neutral domain (i.e. scale 0, 1, 2, 3, and 4) with a maximum of one participant deviating. For the semi-universal engagement killers, the reciprocal principle applies, i.e. all the survey responses are in the disengaging and neutral domain (i.e. scale -4, -3, -2, -1, and 0) with a maximum of one participant deviating. Table 11 presents the semi-universal drivers and Table 12 the semi-universal killers, ranked according to their effectiveness represented by the average score.

Average score	Semi-universal engagement killer	Most disengaging for	Least disengaging for
-2.3	"We have always done it that way" - mentality	-	-
-2.1	Long project (duration) with low workload	-	Linears
-2.1	Low stakes (e.g. no influence of project outcome on your grade)	-	-

Table 12: List of semi-universal engagement killing factors

Interestingly, most of the factors originating from the university project characteristics are found in the semi-universal factors. Thereby, most of the factors that represent the characteristics of the university project are disengaging, i.e. *low stakes (e.g. no influence of project outcome on your grade), and long project (duration) with low workload,* while most of the factors that indicate opposite features to the project are described as engaging, i.e. *having an assigned project leader, and short project (duration) with a high workload.* On the other hand, we assume that having no assigned leader led to *fellow team members taking on a lot of tasks* which is described as engaging. Summarizing, it can be said that the university project had several features that have a disengaging effect for most participants.

Additional insights on selected semi-universal engagement factors

In the interviews, we could investigate some of the engagement factors in depth. Due to the limited timeframe of this research, not every factor could be analyzed thoroughly. Besides the conditional engagement factors, we focused on four semi-universal engagement factors. The first two, *psychological safety* and *emotional availability*, we chose because we would have expected these factors to be clearly engaging for all participants, as proposed by previous research on engagement antecedents conducted by Kahn (1990). The other two, *having an assigned project leader* and *fellow team members take on a lot of tasks*, we chose because they have the lowest average effectiveness of all the semi-universal engagement drivers, and therefore, are closest to the conditional engagement factors. The findings regarding these four factors are outlined below.

Psychological safety

Psychological safety is besides meaningfulness and availability one of the three main conditions for engagement according to Kahn (1990). Therefore, we were surprised to see that four out of the 15 participants of our study answered in the survey that psychological safety does not affect their engagement (cf. Figure 10). In the interviews, we aimed to find out the reasons behind that.
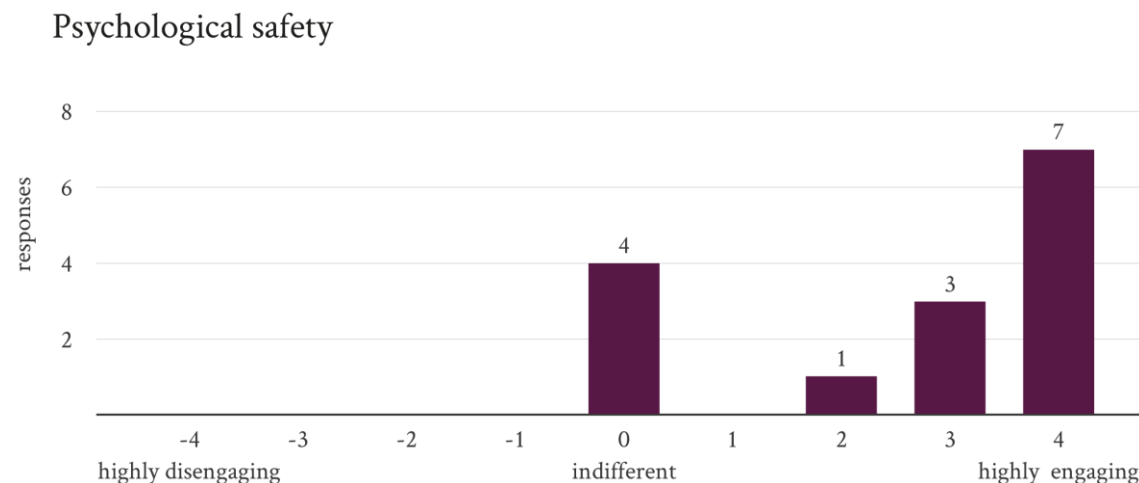
Figure 10: Engagement distribution: Effect of psychological safety

Among the participants that rated psychological safety as engaging two patterns could be identified. They either had an individual need for psychological safety for them to speak up in the group or they saw that including more people in the team discussions increases the diversity of inputs and finally has a positive effect on the quality of the output. Some quotes of the participants are listed below.

> *I do feel very very uncomfortable when I don't feel safe to speak in front of a lot of people.*
> *- Participant 4*

I feel motivated [... and] I also feel free to speak up and to speak my mind and [...] I can say fluffy things, just talk before, I think. [That's why] I need [...] psychological safety [to be] more comfortable and safer with saying my thoughts. - Participant 6

I think when you have a psychologically stable environment you are creating a foundation where people are more comfortable to talk, more comfortable to share their opinions and ideas. And I think that's really important because you can have somebody, an individual, who has the answers to what you're looking for, but their personality, their introvertness actually hold them back. - Participant 5

[When others don't feel safe to speak up] it's very difficult for me to be honest, and I refuse to be because [...] it has to be a two way dialogue that you have, if one person is honest, then the other person is not honest and then the whole system sort of collapses, I think. - Participant 8

On the other hand, people that rated psychological safety to be irrelevant to their engagement shared the common belief that they are assertive enough to speak up in any setting and therefore do not need psychological safety. The safety that they need seems to stem from themselves rather than provided by the group. Some quotes from the interviews are listed below.

It's not a predisposition for me to have [psychological safety] to perform well. Again, because I'm [...] quite self-confident enough to stand up for what I believe and what I would like to say. So, I don't need the feeling of safety in order to pitch in or to bring in my engagement. - Participant 3

To me, I don't really have much of a problem, I think, I'm quite safe to say whatever I want no matter who is in the room. - Participant 8

I do believe in the value of psychological safety but [...] it's not a requirement for me to be engaged. I would still [...] speak my mind if I, for example, disagree with something. - Participant 1

Based on these insights, we can build the hypothesis that psychological safety is not relevant for the engagement of people who are assertive enough to speak their mind in any situation unless they do see the benefit of including less assertive people into the discussion in order to increase the diversity of inputs which has the potential to improve the outcome. However, no correlation between the way people answered and their career motives or career self-awareness could be found.

Emotional availability

Another aspect of Kahn's (1990) engagement antecedents that did not show to be a universal engagement driver but could only be classified as a semi-universal factor is *emotional availability.* This factor is a subtopic of the broader concept of availability (Kahn, 1990) explained in the Theory Chapter. Similarly, to psychological safety, four participants rated this factor to be irrelevant for their engagement (cf. Figure 11). Therefore, we wanted to use the interviews to gain more insights into the reasons behind the participants' answers.
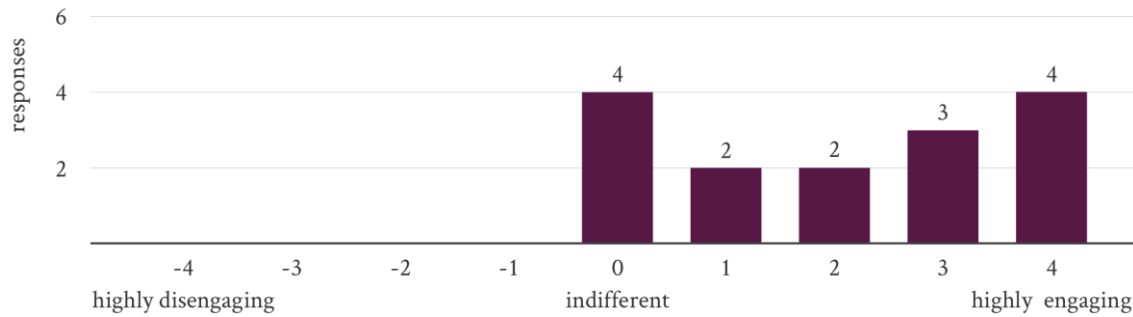
Emotional availability

Figure 11: Engagement distribution: Effect of emotional availability

As expected, the participants that rated emotional availability as highly important for their engagement shared the belief that it is hard to filter out personal issues while at work. This reasoning was apparent in multiple interviews as outlined below.

> *If I have stuff going on [...] at home or [...] in my personal life it is way more difficult for me to just [...] filter that out when I'm working, and I just sense that I struggle more to fully concentrate on the topic I should work on. - Participant 7*

> *When my private life is not in order [...] then I have a hard time focusing on what I have to do, and therefore, it is of vital importance for me [...] to be emotionally available for my occupation in order to perform well and to engage [...] in a good way. - Participant 3*

> *I can see it happening in the sense of, if there is something in my personal life that is really destructive to me it can take over my work life. - Participant 5*

On the other hand, the people that rated emotional availability as not being relevant for their engagement shared the characteristic that they can strictly separate between work and private life - at least most of the time. For some, work can even be a sanctuary to escape from the personal struggles one has. This is shown in some interview quotes below.

> *I always try to detach my emotions when I do anything. Like, I keep my emotions privately. And then, when I'm at work or when I'm studying [...] I try to ignore however I feel, however I'm doing, and just focusing on getting the things done. - Participant 4*

> *I like to think at least [...] that I can switch [personal struggles] off easy. I'll tend to keep that for myself and then [...] wait for the work to be done and then see if I can reach out to someone. - Participant 1*

> *I have never experienced my work being affected by my personal life before. [...] According to me, I can pretty easily disregard it while I'm working because the work kind of becomes an escape from it. - Participant 2*

I felt whenever I [had ...] personal [problems] in my life, I was working more, I was staying in the company more, I was feeling [...] more motivated because I had some goals in my career. So maybe that's why if I have something so emotional or struggling me in my private life, I was more [...] feeling ambitious about my work. - Participant 9

Due to the belief of certain people that they succeed most of the time to strictly separate between work and private life, or because they were able to escape their issues by diving into work, the aspect of emotional availability is not universally applicable as an engagement driver according to our research. Even though the participants who considered emotional availability irrelevant for their engagement shared the same reasoning, we were not able to detect similar characteristics among this group of people. Also, regarding their career motives or levels of career self-awareness no similarities could be found.

Fellow team members take on a lot of tasks
The third factor that was investigated in the interviews is *fellow team members take on a lot of tasks.* As can be seen in Figure 12, this factor is very close to a conditional factor. Therefore, it is worth investigating this factor.

Fellow team members take on a lot of tasks
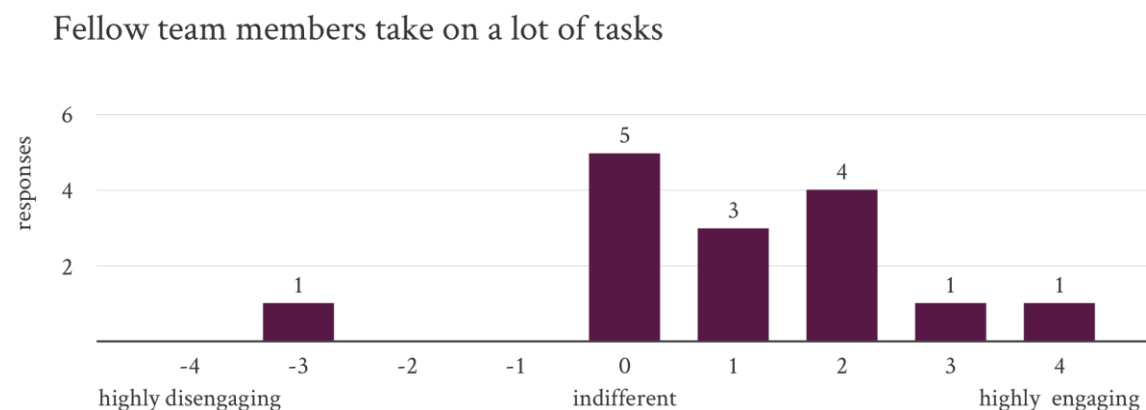
Figure 12: Engagement distribution: Effect of fellow team members taking on a lot of tasks

The participants that rated this factor as engaging mostly referred to the idea that when fellow team members take on a lot of tasks it can create a dynamic in a team that motivates them to engage. Some examples of interview quotes are listed below.

I also think [if fellow team members take on a lot of tasks] it creates a good, it creates [...] a nice work spirit. - Participant 7

I like working in teams that are very much engaged, [where] everybody is eager to contribute because I think for me [...] one thing [that] is very important is contribution. [...] I kind of get stressed, if I have the idea that I might have not contributed [...]. - Participant 1

I feel more motivated to contribute [when] others do things and contribute to the assignment or task so yeah, for me it's really motivating. [...] It's motivating but [also] I feel forced to do it. - Participant 6

Based on these answers, we can see that this motivating team dynamic can also take the form of pressure or stress. The term *peer pressure*, defined as "a feeling that one must do the same things as other people of one's [...] social group to be liked or respected by them" by the Merriam-Webster (2020a, online) dictionary, was never used by our interviewees. However, based on the answers they gave we believe that peer pressure is a relevant factor in this context. Other participants seem to be less affected by this engagement factor and rated it irrelevant for their engagement. Some insights into their answers are listed below.

> *If someone takes on a lot of tasks I think it's mostly because they want to do it, or at least that's how I do it. [...] So then I guess that they want to do it so it doesn't affect me. [...] So, I don't really feel guilty for not taking on more because it's they who are taking on the tasks. If they don't want to they shouldn't do it. - Participant 2*

> *I believe [...] I'm not that easily influenced by the engagement of others. So, if there are slackers in the team [...] I don't mind them, [...] I accept them and just move forward. And just more [I] believe, okay, it's more a bigger opportunity for me to shine and I can take on more stuff I can grow on that. But on the other side, [...] when there are people who are extremely engaged and take on a lot of responsibility, [...] I'm, okay, cool, that they drive it but [...] I don't feel like that [...] would increase my engagement because I would feel pressure to do more as well. - Participant 3*

These participants clearly stated that they are not affected by their fellow team members' engagement. Therefore, this leads us to the assumption that these participants could be characterized as being *self-centered*, meaning that they are "independent of outside influence" and focus on their "own needs and desires" (Merriam-Webster, 2020b, online). Therefore, we formulate the hypothesis that self-centered people are not influenced by the engagement of their fellow team members. Consequently, when fellow team members take on a lot of tasks this does not motivate self-centered individuals to increase their efforts.

Having an assigned project leader
The last factor that was investigated in greater detail of the semi-universal ones is *having an assigned project leader*. This factor was given the second-lowest average effectiveness score of the semi-universal factors. As can be seen in Figure 13, there is a large number of the participants that rated this factor to not affect their engagement even if the tendency is clearly towards an engagement driver.
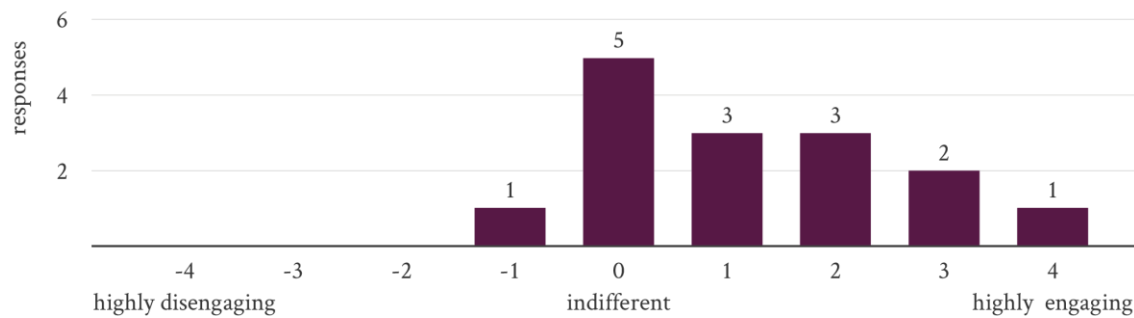
Having an assigned project leader

Figure 13: Engagement distribution: Effect of having an assigned project leader

The most popular aspect among the participants that considered this factor to increase their engagement is that having a leader facilitates the collaboration by structuring the project and controlling or monitoring the progress. This seems to have a comforting effect on some of the participants as can be seen in the following interview extracts.

> *Maybe I like to have leaders. [...] I think it's just easier to have a leader that structures the work [for] you. [...] for me it's important and I feel more motivated. - Participant 6*

> *I think [having an assigned project leader] is engaging because the project leader can function as some kind of coordinator / controller that can hold people accountable. These people often have centralized information that everybody can take part of, and they can coordinate everyone in the team [...] towards a common goal. - Participant 2*

Another aspect that was mentioned by the people that are engaged by this factor is the time or energy that is needed to assign a leader. Therefore, it can be comfortable to already have an assigned leader. Some of the statements expressing this are listed below.

> *[Having an assigned project leader] is still positively engaging for me because I guess it just prevents the whole struggle to assign someone as a leader, which I would imagine could be a very tedious process. - Participant 7*

> *First, we need to know each other and then we need to decide who is [the] leader, and who will just lead the team. So, it's a little bit time consuming for me. - Participant 9*

On the other hand, the participants that rated this factor to not affect their engagement explained various reasons behind that argument. One recurring topic was that an assigned project leader can have positive effects, however, only under the premise that the leader is well suited for the job. This can be seen in the following statements.

> *Having a leader can absolutely catalyze procedures if he or she is a very seasoned leader.
> - Participant 3*

If the leader is really good, I guess it can be useful [...]. But if the leader is not very good anyway, I don't see the point of really having one. I guess it depends on who the person is that takes on the leading role and how good that person is. And if he or she is very very good. Yeah, then it can of course be beneficial but if not, I rather be without one. - Participant 4

While these participants acknowledge the positive effects assigned leaders can bring to a team they also point out that simply having an assigned leader is no guarantee for these positive effects. However, the diversity of the provided statements did not allow for an additional hypothesis.

Concluding insights on universal engagement factors

In conclusion, we found that twelve of the 47 explored engagement factors classified as universal engagement drivers, and 13 as semi-universal engagement drivers. The following four factors were voted the most effective with an average effectiveness rating above three (four being the highest score): *Work with people you like (camaraderie), individual responsibility for a task, task clarity, and meaningfulness of task.* The universal engagement factors can be categorized into one of the following four domains: *social, personal interest, facilitation*, and *pressure*. This is visualized in Figure 14. While the social factors have shown to be the most effective, they are followed by the factors of personal interest and facilitation, both similarly effective. The last domain of pressure has shown to contain the fewest universal engagement driving factors and is therefore considered the least effective domain.

Figure 14: Model of universal engagement factors

It is noteworthy that most of the universal engagement driving factors are especially effective for the Spiral and Linear motives. This is not surprising since the studied sample consists of nine Spirals and Linears. This aspect is elaborated in more detail in the Discussion Chapter.

4.2. Conditional Engagement Factors

The remaining 17 factors do not motivate or demotivate most participants. Instead, they drive the engagement of some while they kill the engagement of others. Therefore, we consider them conditional engagement factors because their effects on individuals differ from person to person. Table 13 presents the conditional engagement factors, ranked according to the average effectiveness score (-4 = highly disengaging, 4 = highly engaging). The closer the average score is to zero the more balanced is the engagement factor, i.e. the number of people considering the factor engaging is about the same as the number of people considering the factor disengaging. An example of a balanced conditional engagement factor is *frequent rotation of task/role* (cf. Figure 15).

Average score	Conditional engagement factor
2.1	High efficiency
1.7	Pushing further and further to improve quality
1.4	Shared responsibility across the team
1.4	Tasks that require creativity
1.3	Possibility for social interactions
1.1	Iterating multiple times to eventually make the most educated decision possible
0.9	Stable work environment (few changes in structure/organization)
0.9	Necessity to self-organize your group and project
0.7	Changing work environment (physical place you work in)
0.4	Simple routines
0.3	Detailed long-term planning
0.1	Frequent rotation of task/role
-0.7	Delivering in favor of speed over product quality
-1.1	Disruptive changes
-1.1	Intensive conflicts
-1.8	Strict rules
-2.3	Poor performance

Table 13: List of conditional engagement factors
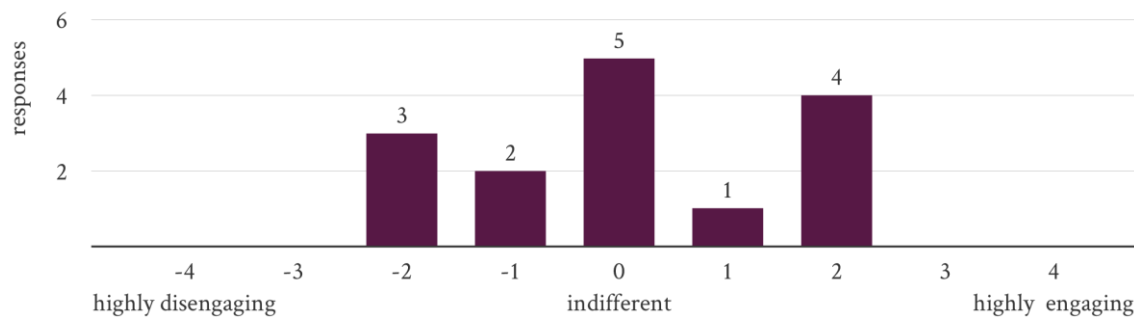
Frequent rotation of task/role

Figure 15: An example for a conditional engagement factor with an average score of 0.1

To answer our second research question, we sought to identify whether there exist mutual characteristics among the people that are similarly affected by the conditional engagement factors. The mutual characteristics that were investigated were the participants' primary career motive and their level of career self-awareness.

Most of the conditional engagement factors originate from Larsson and Kling's (2017a) research. Since it is proven by the authors that these engagement drivers are most effective for specific career types, we expect to see that participants with the same career motives have rated the effectiveness of the conditional engagement factors similarly. There are only three factors remaining that are not career type-specific, i.e. *shared responsibility across the team, possibility for social interactions,* and *necessity to self-organize your group and project.* In the following, we will first examine the findings related to these three factors. Afterward, we will present the findings concerning the career type-specific engagement factors that were surprising to us as they deviated from our expectations which were based on Larsson and Kling's (2017a) research.

Insights on least studied engagement factors
The three factors *shared responsibility across the team, possibility for social interactions,* and *necessity to self-organize your group and project* have not been studied before. Therefore, we used the interviews in addition to the survey to gain as many insights as possible on how they affect the engagement of the participants. The findings of these three engagement factors are presented below.

Shared responsibility across the team
In our data, we have seen that having shared responsibility across the team is particularly motivating Spirals to engage. This is shown in Figure 16.
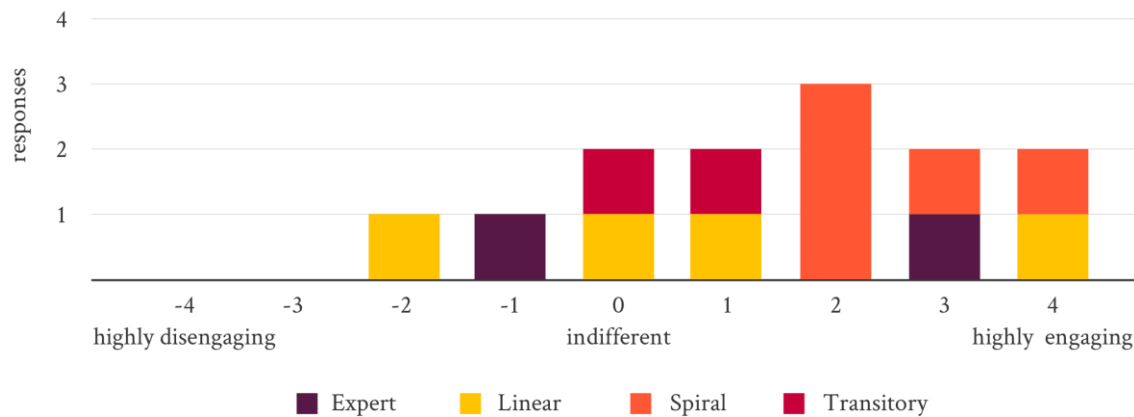
Shared responsibility across the team

Figure 16: Engagement distribution: Effect of having shared responsibility across the team

Another aspect, unifying most of the participants that rated this engagement factor as a driver was their reasoning behind their rating choice, which we learned about during the interviews. Their replies to why this factor is engaging to them hovered around the idea that shared responsibilities can create a dynamic in a team that motivates them to engage. Some quotes of participants are listed below.

If you are responsible for something that is [...] on you to succeed [...] you are going to be more driven. And I think if you have a group of members who are all equally in that footing, they're going to be driven as a collective team. - Participant 5

I prefer just an environment where everybody is engaged, involved and feels responsible... I think it stimulates or triggers you to actively contribute and be engaged as well. - Participant 1

I like when people share responsibility and when I can trust others and I know everyone will contribute to the work. That I would say [is motivating] for me and when others do things I feel like I also need to contribute and then I feel even more motivated. - Participant 6

Most participants that stated that having shared responsibilities across the team have no or only a minor effect on their engagement have also argued similarly. In their replies they argue that responsibilities should be allocated according to competences to be most efficient. In the statements below it can be observed that these participants primarily focus on the task and how it can be executed most efficiently. They seem to consider teamwork mainly as an opportunity to divide tasks while not mentioning how diversity and collaboration can yield better results.

When you divide the assignments and if everyone gets to do exactly the same amount, and one person is a lot more efficient, I think it's better if that person does more than another person because that person is able to do more and therefore I don't think it's always that good to divide [the work] equally - Participant 4

People's competencies vary from person to person. So if you have [...] an inflexible sort of quota [of work] that has to be equal for each person or allotment for each person that creates problems because obviously, depending on the problem, some people will know what to do, some people won't. So, if you do that, you're just creating inefficiencies and that really bothers me. - Participant 8

Based on these findings, we formulate the hypothesis that the people who value and see the benefit of teamwork are most motivated by shared responsibilities across the team. Previous research from Larsson and Kling (2017a) indicate that Spirals are engaged by teamwork. Spirals' fairly high reception of this factor is, therefore, an indicator supporting our hypothesis.

Possibility for social interactions

In our data we have seen that the possibility for social interactions is motivating mainly Experts and Spirals to engage (cf. Figure 17). For the other career types, no statement concerning explicit driving or killing effects of this factor can be made as the other career types are scattered across the distribution.

Possibility for social interactions
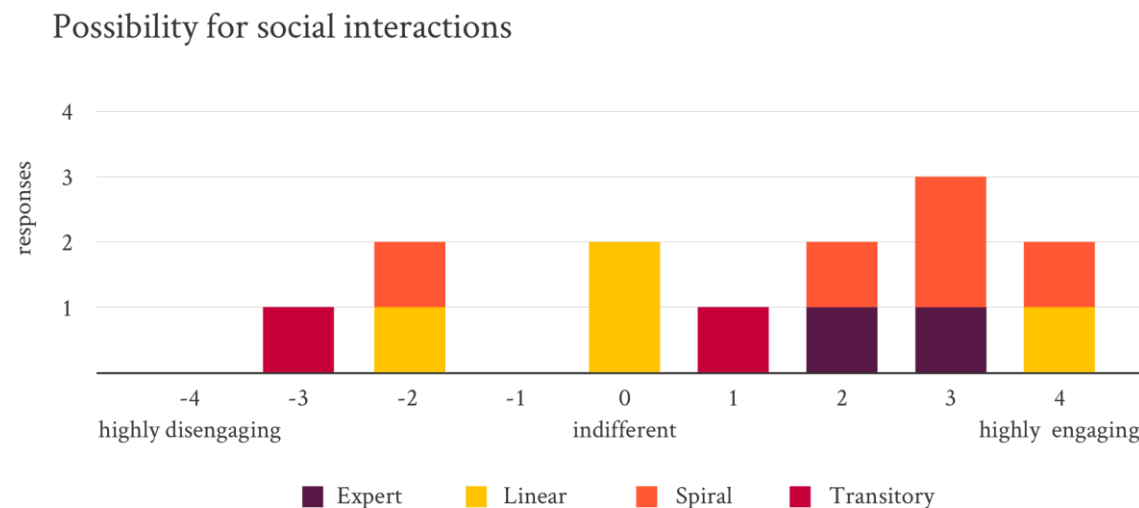
Figure 17: Engagement distribution: Effect of possibility for social interactions

From the interviews we have learned that the participants holding Expert and Spiral career motives rated the possibility for social interactions as an effective measure to drive their engagement out of similar reasons. Most of them stated that they expect social interactions to improve the collaboration in the team, as team members build deeper relationships.

Being able to socialize with people is just very interesting [and] very important for me, because I value to have a personal relationship with the [...] people I work with. It just helps me to work better with them. - Participant 7

I think [...] if you focus [more on] the social interaction within a team or within a group of colleagues you might give in on some efficiency in the beginning, but it will definitely, I mean, in

my experience, it will definitely result in more effectiveness over time, maybe even efficiency in the future. - Participant 1

But after you get [...] some friendship in the coffee break and smoking breaks and then you [become] better friends [...], I feel more safe in the [...] meeting room, and I just speak up. [...] It's [...] about psychological safety. - Participant 9

Others that rated this factor also as effective shared the reasoning that the possibility for social interactions provides a chance to recharge to eventually return to one's task with new energy afterwards.

When you're working on something that's very draining all day [...] it does help to just have a coffee break, socialize with someone - have [a] work life balance almost, and I think a work life balance is obviously important in general. - Participant 5

But I also know that [social interactions] have been valuable for example in the base teams when somebody says we should take a break and afterwards you have this new energy. - Participant 2

A recurring topic among the reasoning of participants that stated this factor rather as disengaging was the argument that breaks interrupt the workflow and decrease the efficiency of the team, which they seem to cherish.

When you have coffee breaks the whole time and you're [...] gossiping and [...] we took a coffee and it took you 30 minutes [...]. When I go to school and when I go to work, I want to do things - I want things to happen. - Participant 6

What I really don't like is when [...] we just have a break at this hour or at this time, [...] because that sort of ruins [the workflow]. - Participant 8

I rather prefer to get things done, than to get to know people [...]. I rather get to know people when we're completely off work. [...] I don't have to [...] get to know [my coworkers] when we're working together. - Participant 4

Concluding, we can notice again a potential difference in the participants' focus. While the participants that disfavor breaks as they harm the process, in their opinion, seem to focus on the task, the participants that pointed out the catalytic effect of social interactions for collaborations seem to focus more on the team when answering these questions. This hypothesis is strengthened by the previous research from Larsson and Kling (2017a) indicating that Spirals are engaged by teamwork.

Necessity to self-organize

In the gathered data (cf. Figure 18) it can be seen that Linears are motivated by the necessity to self-organize, while the engagement of Transitories and Experts seems not to be affected by this factor.

Necessity to self-organize your group and project

Figure 18: Engagement distribution: Effect of necessity to self-organize on engagement

Most of the participants who rated this as an engaging factor argued that having the opportunity to self-organize allows you to organize in a way that caters best to the demands of the task at hand. The aspect of organizational fit in their reasoning unites the participants engaged by this factor.

> *I think, organizing your team or yourself after defining the goal is always [...] an absolutely normal thing to me [...]. It would feel weird [...] if we would have to define our objective, and then work with a structure that is pre-composed [...]. This would not feel right because then you would constantly work against the structure if it's not a good fit. - Participant 3*

> *It is important that [...] you're allowed to set [up the group] again [for] the things that you want to focus on. - Participant 1*

Nearly all participants who stated that their engagement is not affected by this factor specified in the interviews that they simply do not mind whether they must self-organize or follow an imposed structure. The central element in reasoning of the participants seems to be their *flexibility*.

> *I do think [self-organization] is important but not most important. I mean, if someone would organize it for us - sure. But if we have to organize it, cool, like it doesn't really matter for me. - Participant 4*

> *That doesn't matter as much for me. [...] It depends on the task or assignment, but it doesn't matter if I have [...] a structure to follow or if we can decide it by ourselves. - Participant 6*

The central topic of the participants' reasoning who considered this factor disengaging concerned the resource intensity of self-organization.

> *We had to structure or organize ourselves, like our group of 35 people, and that took a lot of time, it was [...] from my perspective very difficult to make something that seems to work for everyone. [...] It felt very energy consuming for me and very inefficient. - Participant 7*

In conclusion, we could see that the majority is not affected by this factor, neither in an engaging nor a disengaging way. The participants that were affected in an engaging way were mainly Linears and stated the benefit to be able to create the best organizational fit for the given purpose as the reason. The few people that were disengaged by this factor mentioned how energy intensive it can be to create a new organizational structure.

The career type-specific engagement factors
Since the remaining conditional engagement factors are career-type specific and have already been studied by Larsson and Kling (2017a), we solely focus on surprising findings and do not present each factor as thoroughly as the less studied previously mentioned factors. In Table 14, the career type-specific engagement factors are listed according to the average effectiveness score. For every factor, the findings related to career motives, binary career self-awareness, or the distribution, in general, are outlined in the table.

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Based on the gathered data, we can see that the findings regarding the career motives of most of these engagement factors tend to be in line with Larsson and Kling's (2017a) previous research. Only one factor substantially deviated from the expected results, i.e. the Transitory driver *changing work environment (physical place you work in).* Contrary to our expectations, our data showed that this factor is disengaging for Transitories. However, it needs to be considered that among the already small sample the Transitory motive is represented only by two participants. Given that this is the only factor that is contradicting while the majority is at least partially in line with the findings of Larsson and Kling (2017a), we do not consider this to be significant enough to contradict the previous research.

Avr. Score	Conditional Engagement Factors *(career type driver/killer, according to Larsson & Kling, 2017a)*	Findings
2.1	High efficiency (Linear driver)	- Linears are among the highest scoring ones - Career self-aware people scored higher on average - High average effectiveness for a conditional factor
1.7	Pushing further and further to improve quality (Expert driver)	- Experts scored rather in the middle of the distribution - Fairly high average effectiveness for a conditional factor
1.4	Tasks that require creativity (Spiral driver)	- Most engaging for Experts, followed by Spirals - Career self-aware people scored below average
1.1	Iterating multiple times to eventually make the most educated decision possible (Linear killer)	- Linears are among lowest scoring, yet, not a clear killer - Engaging for Spirals followed by Experts
0.9	Stable work environment (Expert driver)	- Highly engaging for Transitories - Others scored predominantly around zero
0.7	Changing work environment (Transitory driver)	- Disengaging for Transitories - Engaging for Spirals, Linears, career self-aware people
0.4	Simple routines (Spiral killer)	- No clear pattern, scoring is highly individual - Distribution spreads from -4 to 4 with majority on 0
0.3	Detailed long-term planning (Transitory killer)	- Most engaging for Linears - Spread of distribution ranges from -4 to 4
0.1	Frequent rotation of task/role (Transitory driver)	- Not relevant for Transitories (scored around zero) - No extremes, spread between -2 and 2
-0.7	Delivering in favor of speed over product quality (Expert killer)	- Most disengaging for Spirals and Experts - Not affecting Linears
-1.1	Disruptive changes (Expert killer)	- No clear pattern, scoring is highly individual - General tendency towards killer (incl. Experts)
-1.1	Intensive conflicts (Spiral killer)	- No clear pattern, scoring is highly individual - Tendency towards a killer for Spirals - Spread of distribution ranges from -4 to 4
-1.8	Strict rules (Transitory killer)	- Disengaging for Transitories followed by Spirals - Linears not affected
-2.3	Poor performance (Linear killer)	- Linears are among the lowest scoring ones - Self-aware people scored below the average score - Low average effectiveness for a conditional factor

Table 14: Conditional career type-specific engagement factors

Concluding insights on conditional engagement factors

In general, we have found a relation between career orientation, i.e. career motive, and the effectiveness of conditional engagement factors for most investigated factors. However, this is not surprising since most of the conditional factors originate from Larsson and Kling's (2017a) career type-specific research. Further supporting the assumption that each career motive responds to engagement factors differently is our finding that also the three engagement factors that did not originate from Larsson and Kling show career motive-specific patterns.

Looking back at our second research question, we cannot infer that career self-awareness relates to the effectiveness of conditional engagement factors in general. While we do not see a general correlation between self-awareness and effectiveness of engagement factors, we do see that equal career self-aware (binary score) people have responded in a similar way to the effectiveness of five factors. Four of these five factors are specific for Spirals or Linears which are the only motives in our sample that contain career self-aware people. However, this aspect is elaborated in more detail in the Discussion Chapter. In general, we were not able to detect any substantial correlations or patterns related to career self-awareness. Therefore, we state the hypothesis that the level of career self-awareness is not a relevant variable to determine the effectiveness of engagement factors for individuals. Nevertheless, we discovered some other variables that seem to relate to career self-awareness. These will be presented and elaborated in the next section.

4.3. Complementary Findings

The mixed-methods approach yielded a rich dataset which eventually allowed us not only to investigate our initial research questions but also to explore relations among additional variables. One variable that we found to be responding to the level of career self-awareness (binary score) was the *engageability level* of the participants. The engageability level of a participant is the average of all the ratings this participant gave to the effectiveness of the engagement factors. In our study, we were able to observe that career self-aware participants tended to rate the effectiveness of engagement factors more often with more extreme values compared to the participants that were not considered career self-aware. An example of this is drawn from the survey results and is displayed in Figure 19.
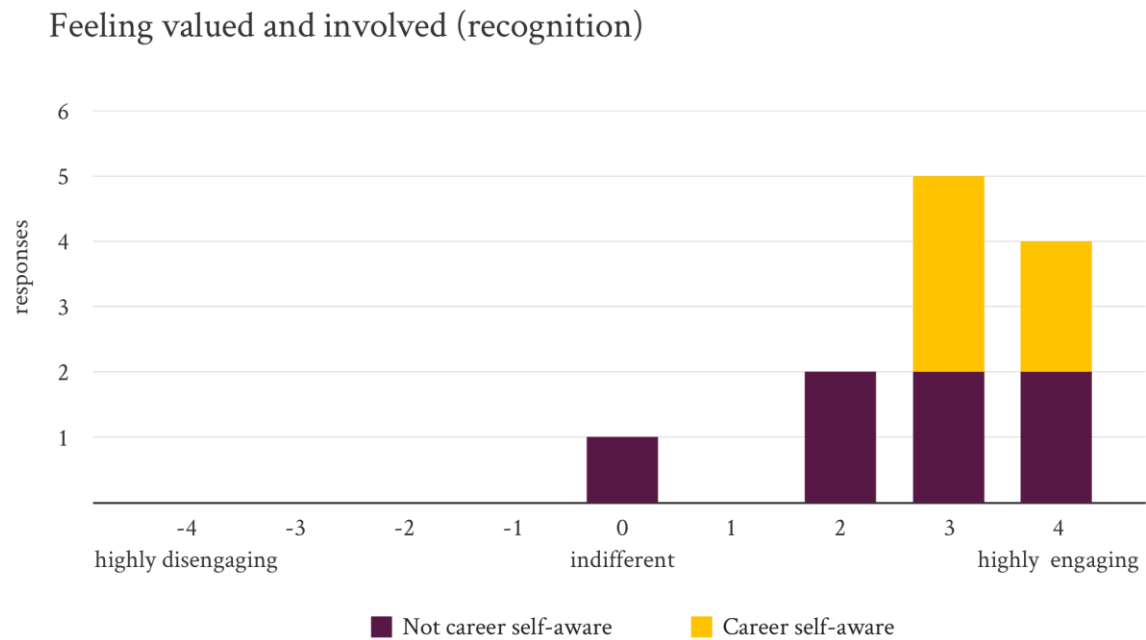
Feeling valued and involved (recognition)

Figure 19: Engagement distribution separated by binary career self-awareness

In this rating system, more extreme values express that the participant is more affected by the factor than the participants that rated this factor closer to zero. Concluding, we hypothesized that the participants that on average rated the effectiveness of the factors higher are more receptive for measures that increase or decrease engagement (i.e. are more engageable) than those with lower average ratings. Therefore, we labeled this variable the engageability score. In our studied sample all career self-aware participants combined showed a higher engageability average score compared to their not aware counterparts. This is especially true for universal engagement factors where the career self-aware study participants have an average engageability level of 2.9 (scale from 0-4) while the participants that are not considered career self-aware showed an engageability average score of 2.3. Based on this insight, we formulate the hypothesis that career self-aware people are more receptive to engagement factors.

Another complementary finding that we were able to draw from the data set confirms previous findings of Larsson, Månsson, and Sahlberg (2011). According to the gathered data, we can support the authors' finding that following your career motive engages you more than pursuing a career type that diverges from your career motive. In our survey students who engaged according to their career motive retrospectively rated their own engagement in the project higher than students who did not act corresponding to their career motives. Multiple variables originating from Larsson and Kling's (2017b) career type-specific competencies were used in the survey to assess how the participants engaged in the project. As can be seen in Figure 20, all participants whose way of engaging matched their career motives had rated their engagement at a level of six or higher with an average of seven (1 = minimally engaged, 9 = maximally engaged), while the other participants responded with an average engagement level of five.

Level of engagement in university project
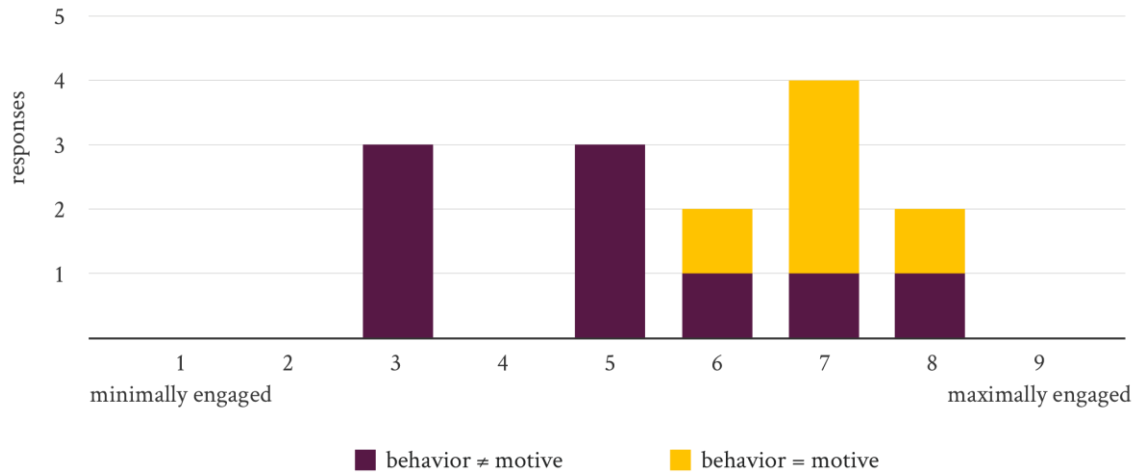
Figure 20: Self-assessed engagement level separated by matching behavior and motive

Lastly, we also discovered additional engagement drivers through the interviews. As the final part of the interviews, we asked our study participants if they can think of any additional engagement factors that would increase their engagement. Because each new driver was mentioned solely by individual participants, we cannot infer how broadly they apply - whether they are universal or conditional - or how effective they are to drive engagement. Nevertheless, we present these additional drivers in the list below because we are convinced that they can serve as input for future research. The following list outlines the additional engagement driving factors that were mentioned by the interviewees.

- High stakes
- Regular breaks (to regain energy)
- Open mindsets in discussion culture
- Interest in topic
- Social / team activities

5. Discussion

In this chapter, we will discuss the results of the Findings chapter and explain their meaning in relation to existing research. Furthermore, the last section of the chapter outlines the main limitations of the research by relating the demarcations presented in the Introduction Chapter to the study's findings and illustrating additional limitations of the findings.

5.1. Universal Engagement Factors

The findings of the universal engagement factors show that there is a vast amount of engagement driving factors that are applicable to most people. Most of the factors that this study has shown to be universal originate from previous research outlined in the Engagement Subchapter of the Theory Chapter. All these studies focused on universally applicable factors. The distinction between universal and conditional engagement factors has only been made in this study. In general, this study's findings concerning the universal engagement factors are in line with the outlined literature and research. All the engagement drivers originating from the existing research that has been tested in this study have shown to be positively associated with engagement. However, this study has added value to the field of engagement research by ranking the factors according to their effectiveness and providing a new framework that categorizes the most effective factors for project teams.

Bakker and Demerouti (2007) distinguished between job demand and job resources while Saks (2006) categorized engagement antecedents into job characteristics, rewards, and recognition, perceived organizational and supervisor support, and distributive and procedural justice. In contrast, the model presented by our study considers only the most effective engagement factors for project teams and arranges them into the four domains of *social, personal interest, facilitation*, and *pressure*. The classification of the factors into these four domains is based on our interpretation of the survey and interviews. However, the borders of the four domains should not be interpreted as strict dividing lines. The four domains rather represent a comprehensible way to classify the most effective engagement drivers. To keep the framework simple and relevant for the biggest possible audience, only the universal engagement factors were included. However, it would be feasible to add the most effective semi-universal factors without distorting the core message of the framework. To keep the model simple, we decided to forgo the semi-universal factors in the framework. For the same reason, we focused on visualizing the total effectiveness of each domain, instead of highlighting every individual effectiveness score. In conclusion, the framework answers the first research question by outlining the universally most effective engagement driving factors, neglecting rewards, or punishments.

While this study has shown that most of the engagement factors outlined in the Engagement Subchapter of the Theory Chapter can be classified as universal engagement factors, some of these

factors surprisingly showed to be irrelevant for some of the study participants. This was for example the case for some of Kahn's (1990) engagement antecedents, namely *psychological safety* and *emotional availability*. Therefore, this study showed that despite the relatively high effectiveness of these factors they are not universally effective.

New to the existing research is the investigated relation between the universal engagement factors and the career types originating from the career model by Larsson et al. (2007). Due to Larsson and Kling's (2017a) research, we expected to find relations between people's career motives and conditional engagement factors. However, the findings from the collected data suggest that similar relations exist for universal engagement factors. Even for universal engagement factors people sharing the same career motive often assessed the effectiveness of an engagement factor in the same way. This is not surprising as one's career motive is determined through rating one's motivation connected to work-related factors. Obviously, more factors may exist that influence these groups of people in the same way. Surprisingly, some of the career type-specific engagement drivers originating from Larsson and Kling's (2017a) research showed to be universally engaging in this study. These factors all correspond to the Linear and Spiral career motives. To some extent, this is due to a large amount of Linear and Spiral motives in the sample which is discussed in more detail in the Limitations Section at the end of this chapter.

5.2. Conditional Engagement Factors

The conditional engagement factors have shown to be effective only for some people and were even disengaging for others. As expected, most of the factors in this group are factors originating from the career model of Larsson et al. (2007) since these factors were constructed to mainly be engaging to certain groups of people. Only three of the conditional factors were based on the university project characteristics while none stemmed from other researched literature. For all the conditional engagement factors, we tried to find underlying characteristics of the groups of people that were similarly engaged by these factors.

Focusing on the factors that originated from Larsson and Kling's (2017a) research of motivating factors for specific career types, the gathered data shows a relation between the career orientation, i.e. career motive, and the effectiveness of conditional engagement factors for most of these factors. Most of these findings are in line with Larsson and Kling's research. While we do not outline all the factors that corresponded to the existing research, it is worth mentioning that only one factor, a Transitory driver, substantially deviated from the expected results. However, the Transitory motive is represented only by two participants. Given that this is the only factor that is contradicting while the majority is at least partially in line with the findings of Larsson and Kling (2017a), we do not consider this to be significant enough to contradict the previous research. Concludingly, the data showed that the effectiveness of conditional engagement drivers

depends on an individual's career orientation, and therefore, affirming the first part of the second research question. The fact that even the three engagement factors that did not originate from Larsson and Kling show career motive-specific rating patterns further supports the assumption that people sharing the same career motive often respond to engagement factors similarly.

The second part of the second research question is focused on the individual's level of career self-awareness and its relation to conditional engagement drivers. Despite using multiple ways to determine one's level of career self-awareness, we were not able to detect any substantial correlations or patterns in our sample. While the data did not reveal a general correlation, we could see that equally career self-aware people (according to the binary score) have responded in a similar way to the effectiveness of five factors. Four of these five factors are especially engaging for Spiral or Linear motives. Since the group of career self-aware participants in our sample only consists of Spiral and Linear motives, it is not surprising that we found a correlation between self-awareness and effectiveness in some factors that are Spiral- or Linear-specific. Therefore, we assume that the rating pattern for these factors depends more on the career motive than on the level of career self-awareness. Consequently, we cannot infer that career self-awareness relates to the effectiveness of conditional engagement factors. Therefore, the hypothesis was stated that the level of career self-awareness is not a relevant variable to determine the effectiveness of engagement factors for individuals. In other words, whether our idealized career corresponds to our underlying desire has no impact on what factors we are motivated by to engage.

Using interviews to investigate the three factors that do not originate from the career model in more depth a new characteristic was found that seems to influence people's assessment of engagement factors. This characteristic is people's primary focus - team or task. People that focused more on teamwork and collaboration rated the engagement factors *shared responsibilities across the team* and *the possibility for social interactions* higher than their counterparts who are more focused on the task and efficiency in general. Since most of the high-rating people were Spiral motives this hypothesis is strengthened by Larsson and Kling's (2017a) research showing that Spirals are highly motivated by teamwork. Furthermore, the interviews shed light on two additional characteristics that correlate with people's rating of the effectiveness of engagement factors: *assertiveness* and *egocentricity*. These findings led us to formulate the two hypotheses that assertive people's engagement is not affected by psychological safety while self-centered people's engagement is not influenced by other team member's engagement. Even though these hypotheses only rely on a limited number of interviews they add valuable insights to the research on engagement and can serve as inputs for future research.

Due to our research approach of employing several methods to collect a large variety of data related to the field of study, we were able to reveal another effect of the level of career self-awareness. The gathered data showed that the level of career self-awareness (binary score) is

linked to the *engageability level* of the participants. We hypothesized that people whose idea of an ideal career matches their desire for a career are on average more receptive for measures intended to drive engagement. This is a new insight for career studies and therefore should be examined in more depth in a larger study.

5.3. Limitations

As already discussed in the Demarcation of the thesis, both the limited time frame for this study as well as the costs of the career model test limited the number of people, we were able to study. Therefore, the sample size had to be restricted to 15. Consequently, this study can present new hypotheses that can be valuable for practitioners and future research, but they cannot be generalized to the entire population. In addition to the small sample size, the diversity of the sample is limited. The study participants were all members of the 2019/2020 Master in Management program at Lund University School of Economics and Management. While this project with its team members was particularly suitable to study because of the project's characteristics of a temporary organization, it naturally limited the diversity among the study participants. Limiting the focus of the study to this group of participants was mainly caused by the reduced accessibility to a broader population of interest due to the ongoing global health crisis. Consequently, the research was designed to cope with these circumstances.

Furthermore, as outlined in the introduction of the Findings Chapter, the sample of this study contains a high number of Linear career motives, roughly 30% of the study participants. This is about twice the amount compared to the data from a study of Swedish citizens (Larsson et al., 2016). This overrepresentation of Linear motives in this study's sample is at the expense of Expert motives, only represented by two study participants. The percentage of Spiral and Transitory motives in the study of Larsson et al. (2016) are similar compared to the sample of this study. We assume that the overrepresentation of Linear motives does not only stem from the international backgrounds of the study participants, but also by the type of people attracted to the management graduate program where our study participants are enrolled. This skewed distribution of career motives needs to be considered when comparing the effectiveness scores of the engagement factors. In general, the most dominant career motives in our study sample are Linears and Spirals accounting for roughly 70% of the participants. Even though it was not evident that all engagement factors associated with the Linear and Spiral motives are rated more effective, the only three career type-specific engagement factors that are classified as universal engagement drivers are related to the Linear and Spiral motives. However, also the representative study of Swedish citizens by Larsson et al. (2016) showed that some career types are more frequent than others. In their study (Larsson et al., 2016) the Spiral and Expert motives were the most common ones. Therefore, considering the whole population it is natural that some factors are on average more effective than others just because the corresponding motives are more frequent. However,

as outlined in the Demarcation, this study never claimed to present a representative sample of the whole population. Therefore, only hypotheses are built that can serve as inputs for future research.

In terms of limitations, we also need to address the topic of reflexivity. As mentioned in the Methodology chapter, we have been actively taking part in the project in the same way as all the other students. Originally, we believed that the benefits of additional insights gained by our participation as well as our deep understanding of the project characteristics outweigh the drawbacks of impacting our view of reality and making us susceptible to our own biases. Unfortunately, our gathered data from the participatory observations did not yield any insightful results that relate to the purpose of this research. We were able to identify according to which career motive we perceived each participant's behavior during the project. However, this input did not show any correlation with the remaining gathered data. Nevertheless, we believe that being a pair conducting this research helped us to overcome our individual biases and consequently outweigh the disadvantages connected to being a participant of the same project that is part of the research.

When talking about reflexivity, we also need to touch upon circumstances that might have impacted our study participants' involvement in our research - mainly the survey and interviews. In general, the participant's state of mind at the time interacting with any data collection process of the study might have influenced their answer. As we do not have any information on what might have influenced their reasoning, we are unable to assess the possible impact on our study. Furthermore, it was evident that people's answers during the interviews were heavily connected to their most recent experiences. Several interviewees mentioned examples of the university project when explaining their reasoning for their answers in the survey. Past experiences related to teamwork during the Master in Management program were also highly common. Therefore, we must conclude that participants' answers both in the survey as well as in the interviews are highly contextualized and rely often on the most recent experiences connected to the university program. Unfortunately, it is beyond our means to assess or estimate to which extent and in what way this has impacted the answers in the survey and interviews.

6. Conclusion

The research aimed to identify the most effective measures to increase the engagement of project members in a temporary team and whether the effectiveness of these measures is depending on the career orientation or career self-awareness of the project members. Based on a quantitative and qualitative analysis of project members, their career orientation and engagement in a project, it can be concluded that the universal engagement drivers (cf. Table 9) are the most effective as they increase the engagement of the vast majority of people. Among the universal factors, the measures that address the social dimension of teamwork are the most effective, followed by measures that concern the personal interest of project members, facilitate the completion of the task, or relate to pressure experienced in a team setting. While these factors motivate nearly anyone to engage this study has shown that most of the tested factors, however, are only effective to motivate people with certain career orientations. We were able to confirm that people who aspire to different career orientations are engaged by different factors. This corresponds to what we had expected to see based on our review of previous research. In contrast to the career orientation, the level of career self-awareness does not interplay with the effectiveness of conditional engagement factors. However, we were surprised to see that career self-aware people are more receptive to measures to increase engagement. We were able to gain complimentary, yet surprising insights like these due to our diverse set of data.

Employing quantitative as well as qualitative research methods, we sought to utilize multiple data-gathering opportunities to test which engagement factors are the most effective ones and also to understand why this is the case. This mixed-methods research approach, consisting of questionnaires and interviews, eventually yielded a comprehensive profile of our studied sample, which allowed us to shed light on our research question and also to support existing theories, such as that working according to your motive engages you more than not doing so. Following up on the survey with interviews was particularly important to us to understand the reasoning behind the participants' judgment of the effectiveness of engagement factors. To solely answer our research questions the two online conducted questionnaires (survey and career model test), however, would have been sufficient. Since our small sample decreased the generalizability of our findings, we conducted interviews to increase the validity and credibility of our study and to gain a deeper understanding of the topics surrounded by the research question.

Through the interviews, we discovered that a person's level of assertiveness or egocentricity as well as the person's primary focus (team or task) might also determine what this person is motivated by. Like a person's career orientation, these characteristics could, therefore, also be sufficient to explain differences in the effectiveness of engagement factors. However, whether our hypotheses that assertiveness, egocentricity, and primary focus relate to the effectiveness of certain engagement factors will have to be investigated in future research.

In general, a greater and more representative sample will have to be examined to validate our hypotheses. Furthermore, we recommend future researchers to investigate the effectiveness of the additional engagement drivers that were mentioned in the interviews. Nonetheless, the most pressing research that needs to be conducted to follow up on this study's findings in our opinion concerns the question, how this knowledge can be translated into practical action-items, so that practitioners have a rich set of tools to motivate project members to engage.

One practical implication that can be taken from this study is that engagement can be affected from inside the project team, but also from the project design itself. While the universal engagement drivers are effective measures to increase engagement from within the project team, the duration and the level of stakes are two project design characteristics that are out of the scope of a project team but affect its engagement. Furthermore, practitioners should acknowledge that different people are engaged by different factors. Therefore, it is particularly important to recognize a person's characteristics to apply the appropriate engagement factors.

All in all, this study has presented a comprehensive definition of engagement, combining multiple schools of thought and their respected dimensions. Departing from this common ground the most effective engagement drivers have been identified and categorized in a framework distinguishing between universally and conditionally applicable engagement factors. Simultaneously, we also discovered new engagement factors and investigated their effectiveness. By investigating existing and new engagement factors in depth we contributed to the field of engagement research. Furthermore, this study has shed light on how the effectiveness of engagement factors relates to an individual's career orientation and career self-awareness. Studying the relation between career self-awareness and engagement factors also provided new insights into existing research. While doing so new characteristics have been discovered that potentially interplay with the effectiveness of the studied engagement drivers and, therefore, present an addition to the career type-based division.

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Appendix

A. Survey questions

Demographics:
- Age
- Gender
- Nationality
- Study/work background

University project experiences *(scale: 1 = very little, 9 = very much):*
- To what extent do you think the project outcome/result has an effect on your future career?
- To what extent did you personally fear negative consequences in case of a bad project result (unsatisfied client)?
- To what extent did you personally expect a benefit from an extraordinary project result (satisfied client)?
- To what extent did you perceive leadership in the stakeholder group?
- To what extent did you experience psychological safety in the stakeholder group on average throughout the project
- How much did you enjoy working on the project?
- How satisfied were you with work process of the stakeholder group?
- How much did you learn personally from working in the project?

Characterize behavior: To what extent do these twelve activities describe your participation in the university project? *(scale: 1 = very little, 9 = very much)*
- Driving towards goals
- Foster teamwork
- Take on responsibilities and authority (e.g. moderation, facilitation)
- Changing tasks frequently
- Optimizing way of organizational form and structure
- Connecting with people
- Dive deep into a task
- Speeding up / learning quickly
- Refining quality
- Establishing procedures
- Crossing boundaries / challenge limitations
- Broadening your own competences

Assess your own overall engagement in the university project (think of the following factors: meeting participation, contribution during meetings, meeting preparation, individual work (e.g. writing templates, interviews), coordination within or other groups, initiating new ideas, etc.) *(scale: 1 = very little, 9 = very much)*

Drivers and killers of engagement: To what extent does the following motivate or demotivate you to engage in project work? (more general, not only from the university project perspective) *(scale: -4 = highly disengaging, 4 = highly engaging)*
- Fellow team members take on a lot of tasks
- Trust of fellow team members in you and your work
- Individual responsibility for a task (you're the only one responsible for that task)
- Shared responsibility across the team
- Collaborative work style (tackling tasks together)
- Work with people you like (camaraderie)
- Your fellow team members are interested in building a personal relationship with you
- Possibility for social interactions (e.g. coffee breaks)
- Task requires you to dive deep into a topic
- Pushing further and further to improve quality
- Delivering in favor of speed over product quality
- Stable work environment (few changes in structure/organization)
- Disruptive change
- High efficiency
- Iterating multiple times to eventually make the most educated decision possible
- Lack of clear goals
- Competitive work environment / culture
- Poor performance
- Challenging tasks
- Tasks that require creativity
- Tasks that require a variety of your skills
- Tasks with personal development opportunity
- Intensive conflicts
- Narrow-minded project members
- Simple routines
- Changing work environment (physical place you work in)
- Frequent rotation of task/role
- High independence/autonomy
- Autonomy in decision making
- "We have always done it that way" - mentality
- Strict rules

- Detailed long-term planning
- Low stakes (e.g. no influence of project outcome on your grade)
- Necessity to self-organize your group and project
- Having an assigned project leader
- Psychological safety (you feel safe to speak up)
- Meaningfulness of task (is the task meaningful to you?)
- Significance of task (your task is very important for the project outcome)
- Having adequate resources to manage the task (budget, tools, instruments, competences)
- Emotional availability (are you mentally ready to dive into the task)
- Supportive environment (you receive support from your colleagues/organization)
- Feeling valued and involved (recognition)
- Equal opportunities for all project members
- Role clarity (how well you understand your role and its responsibilities)
- Task clarity (how well you understand your task)
- Long project (duration) with low workload
- Short project (duration) with a high workload

B. Interview Guide

Ask for consent to record interview

Career concept:
In the career model test, you scored highest in both [e.g. Spiral & Expert] for your career concept. If you would have to choose one of them, which kind of career type do you aspire the most for yourself?

Career motive:
In the career model test, you scored highest in several career types for your career motive. If you would have to choose one of them, which of the following motivates you the most?

a. Specialization (Expert)
b. Promotions (Linear)
c. Personal development (Spiral)
d. Task variety (Transitory)

Engagement drivers:
Now we want to look at the engagement drivers that showed a wide spread in effectiveness among the students. We are trying to figure out the underlying reasons for the spread in the answers. The scale was from -4 to 4 with the label "highly disengaging" for -4 and "highly engaging" for 4.

Looking at the engagement driver … you scored XX. Could you explain your reasoning why …
has [no, positive, or negative] impact on your engagement?

- Shared responsibility across the team (*how did you understand this question?)
- Possibility for social interactions (e.g. coffee breaks) that are for example not possible in remote work situations
- The necessity to self-organize your group and project
- Emotional availability (are you mentally ready to dive into the task, i.e. if you struggle with something in your private life you might not be mentally available)
- Fellow team members take on a lot of tasks
- Psychological safety
- Having an assigned project leader

Imagine you are working in the university project or any other project, can you think of any additional factors that would drive your engagement? (Factors that were not in the survey)