Exploring the impact of projectification on organizational agility

A qualitative study of Norwegian firms

HENRIK LYNGTUN VIK & JULIE WIESE-HANSEN

SUPERVISOR
Andreas Erich Wald

University of Agder, 2023
School of Business and Law
Department of Management

Forewords and acknowledgements

This thesis was made as the final part of the Master´s degree in Business and Administration at the School of Business and Law at the University of Agder (UiA).

The aim of this research was to explore the current development of projectification and if there is a relationship between projectification and organizational agility in the Norwegian economy. The process of working on this thesis has been educational, interesting as well as challenging and frustrating at times. We have gained a lot of knowledge of both the relevant topics and on the research process itself.

We would like to thank our supervisor prof. Andreas Wald (professor at the department of Management) for relevant feedback, theoretical insight, and advice throughout this process of writing this thesis. Further, we would like to thank everyone who helped in the distribution of the questionnaire and of course all those who took the time to answer. We would also like to thank Hans J. Assman and Henrik Minde for good cooperation in the data collection process. Last, but certainly not least, we would like to thank the School of Business and Law at the University of Agder for an educational and exciting master's program.

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Abstract

In recent years, the use of project work in organizations has had an increasing trend. The use of project-work offers a structured and effective way to manage complex tasks and achieve desired outcomes. Working through projects offer a range of benefits, including enhanced efficiency, collaboration, strategic alignment, higher level of flexibility and agility. For the success of project work, organizational agility is particularly crucial as it enables organizations to respond rapidly to changing circumstances. Projects empower organizations to respond to new market conditions, customer demands, and emerging technologies, demonstrating a high level of agility.

With the increasing adoption of project-based methodologies across various industries in the Western world, organizational agility has become increasingly critical in today's business landscape. Although projectification is an important trend, it remains uncertain whether it is correlated with organizational agility. Given the significance of organizational agility in project management, this master thesis aims to explore the relationship between projectification and organizational agility within the Norwegian economy.

The investigation has been done through a primary data collection of 205 organizations, representing diverse industries and sizes. We have developed a metric to quantify the degree of projectification in the Norwegian economy, as well as evaluate the extent to which organizations perceive themselves as being agile. Further we have analyzed and tested how projectification affects a firm's organizational agility both in general for the Norwegian economy, difference between small- and medium and large firms as well as for specific industry groups. The results show that projectification is an increasing phenomenon in the Norwegian economy and that organizational agility is influenced by the degree of projectification. The research will thus contribute to investigating the importance of project-based work, factors influencing it and how it can lead to better organizational agility.

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1 Introduction

The aim of this thesis is to determine if there has been a development of the amount of projectification in Norway and whether there is a relationship between the degree of projectification in an organization and their organizational agility. When determining the possible effect and degree of projectification, measuring both the amount of project work and the organizational agility of the participating organizations were needed. How this was done will be described in chapter 3. The scope of this thesis was the Norwegian economy, not limited to industries nor company types.

The consensus in research today is that the amount of value creation done in projects is increasing (Schoper et al., 2018). However, studies suggest the rate of growth in projectification will slow down in the coming years, for this paper finding out the current development is the main target (Schoper et al., 2018).

An advantage of projectification for organizations is its ability to handle special tasks that are not a part of the "run of the mill" for an organization; this has been pointed out as one of the drivers for this development. A high degree of TO usage allows for more flexible use of the specialized personnel (Christopherson & Storper, 1989; Faulkner & Anderson, 1987), giving them the opportunity to work in TOs instead of focusing on rules, hierarchy and training. As this is related to the agility of the organization, researching the alleged relationship between the two is interesting and important to further understand the development of the Norwegian economy. As the market structure becomes ever more complex, adaptability and flexibility has earned an increased focus, both by managers and in the literature (Volberda, 1999). Timeliness is particularly important and, according to Gareth Morgan (2006), might be more important than making perfect decisions at all times.

While projectification has been studied extensively, there is still much to learn about the degree to which it has developed within labor markets. There has been some research into how companies have incorporated project-based work and how this has affected their operations. For example, studies have shown that the use of project-based work has led to increased flexibility (Skeibrok & Svensson, 2016), as organizations can quickly assemble teams to tackle new projects as they arise. It has also been found to foster innovation, as team members from different departments or areas of expertise can come together and share their knowledge to

develop creative solutions to problems (Jacobsson & Jałocha, 2021). Moreover, recent research has highlighted projectification as a key strategy to achieve organizational agility (Walter, 2021).

The study conducted in this thesis has partially been done before and is based on a study conducted by Wald et. al. (2015) in Germany, later in Norway and Iceland (Schoper et al., 2018). In 2015 the degree of projectification was around ⅓ (34,7%). In a study conducted in 2014 the degree of projectification in Norway was found to be 32,3% (Skeibrok & Svensson, 2016). The aim of this thesis is to see if the development in projectification is increasing and to find potential links between the degree of projectification and the degree of organizational agility. This has to our knowledge not been done before.

In the literature there seems to be a consensus that a high degree of projectification leads to a more flexible and agile organization, however there is little empirical support of this. Our first research question is therefore;

"To what extent does projectification affect a firm's organizational agility?"

To find the answer to this, the degree of organizational agility was measured using existing scales from different sources. These were included in the questionnaire to give us an overview of the companies' agility in relation to their use of TOs.

As this thesis has the entire Norwegian economy as scope, it is also of interest whether the size of the companies has an effect on the aforementioned variables; projectification and organizational agility. Therefore, the secondary research question is:

"Does the size of a company have a moderating effect on the relationship between projectification and organizational agility?"

In this thesis there are six chapters, structured to give a thorough introduction to the subject before answering the research questions. Firstly, an introduction to the subject followed by the theoretical foundation the thesis is based upon. After this there will be a methodology chapter (chapter 3) with a solid walkthrough of the method used to collect data, operationalize the

variables. After this both the descriptive data analysis is done, and the PLS-SEM analysis conducted. Following this the reference list and all relevant appendices are included.

2 Theoretical framework

In the theoretical framework part of this paper the theoretical foundation for the rest of the thesis is made. This consists of theory on temporary organizations, projectification, organizational agility, the factors that affect organizational agility as well as the hypotheses development and outline of the research model.

2.1 Temporary organizations

The term temporary organization (TO) is mainly used to differentiate between TOs and permanent organizations and is by Packendorff (2014) defined as "*...aggregates of individuals who work together for a shared cause*." Hanisch and Wald (2014) points to there being several forms of TOs, such as a temporary alliance, however the project is the most prevalent. A much-used characteristic of the TO is their determinate nature, here used in the sense that they have a predetermined end date at which they become obsolete (Packedorff, 2014). Utilizing temporary organizations is a substantial part of the economy in the west and is expected to increase further (Schoper et al., 2018) as they provide the mother organization with more flexibility (Bechky, 2006). As of 2014 (Schoper et al., 2018; Wald et al., 2015) the share of TOs was roughly ⅓ in western economies.

In the available literature there are some characteristics that differentiate a TO from the rest of the organization: time limitation, ambiguous hierarchies, team diversity and heterogeneity, unique tasks, and more informal coordination (Spanuth et al. 2020). However, the distinction between a TO and the permanent organization is not always black and white.

The aforementioned characteristics make for a more dynamic, innovative, and flexible organizational form than the permanent organization (Bechky, 2006; Spanuth et al., 2020). Which for firms operating in complex environments can be crucial. This statement is an important part of the foundation for this thesis.

Lundin and Söderholm (1995) pointed to four concepts of TOs and created a framework based on these four concepts, namely time, task, team, and transition. *Time* is, as implied by the term

temporary, the limited timeframe of the TO. The *task* of a TO is aligned with the goals of the primary organization, however is an action that needs to be accomplished (Lundin & Söderholm, 1995). In this paper the authors differentiate between unique and repetitive to show the difference between a permanent and a temporary organization. A TO will always be made up of groups of people, therefore the *team* dynamic occurs in TOs. The last part of Lundin and Söderholm´s framework is transition. For a TO, *transitioning* from the permanent organization to a temporary one can overcome inertia by creating a new setting for the action.

Team based temporary organizations within the mother organization facilitates structural fluidity (Harraf et al., 2015). As one of the ten pillars they describe for organizational agility is structural fluidity it is not unlikely that TO usage will have a positive effect on an organization's agility. In a case study conducted on Volvo, the researchers describe how the use of projects back-to-back in a continuous cycle builds organizational agility (Holmqvist & Pessi, 2006). Thus, implying that an increased degree of TO usage positively affect organizational agility.

2.2 Projectification

The term "projectification" has gained increasing attention in recent years, referring to the institutionalization of project work in society and the growing trend of organizations moving towards project-based structures instead of traditional functional management structures (Jacobsson & Jałocha, 2021). This shift has been driven by various factors, including increased competition, the need for greater flexibility and agility, and the rise of new technologies (Cleland, 2004). While the term itself is relatively new and was first coined in the 1990s (Midler, 1995), the underlying concepts of projectification have been present throughout the history of project management.

In fact, the notion of projectification has been discussed in scholarly literature for several years, indicating that society has been experiencing a development towards project-oriented businesses (E. S. Andersen, 2018). Midler (1995) introduced the term in a journal article discussing Renault, a major player in the automotive industry. Renault had responded to challenges of innovation-based competition through a shift towards project-based operations. According to Midler (1995, referenced in Wald et al., 2015), "projectification" implies both a quantitative and a qualitative dimension. The quantitative dimension refers to the amount of project work in a company, while the qualitative dimension relates to qualitative development,

such as organizations' ability to adapt and interact to solve complex problems (Wald et al., 2015).

Projectification has undergone significant changes in recent years, as compared to a few decades ago. Traditional project management was primarily associated with large projects, which aimed to create a unique product through careful planning and execution (E. S. Andersen, 2018). In the mid-20th century, projects became increasingly common in fields such as aerospace and defense, as well as in the construction and engineering industries. This led to the development of formal project management methodologies (Cleland, 2004). In the 1970s and 1980s, the concept of projectification began to be applied to a wider variety of industries, including information technology, healthcare, and government. This led to the development of new project-based methodologies such as Agile (Cleland, 2004).

Furthermore, while large projects still exist, the image of project work has become more varied and complex. This has led to the development of new project management techniques and has created a growing demand for skilled project managers (E. S. Andersen, 2018). The trend has been driven by a variety of factors, including increased competition, the need for greater flexibility and agility, and the rise of new technologies (Cleland, 2004). Today, many projects in the labor market are smaller in scale and have a short lifespan (E. S. Andersen, 2018). The newer approach of projectification therefore shifts away from traditional methods and instead embraces agile practices, which allow for greater flexibility and adaptability during the project's development (E. S. Andersen, 2018). This approach allows for improvements to be made during the project's development, rather than being set in stone from the beginning, providing more room for changes. In this thesis, projectification is thus defined as *"The institutionalization of project work in society and the growing trend of organizations moving towards project-based structures"* (Lundin & Söderholm, 1995).

2.3 Organizational agility

In an ever changing and dynamic market, organizational agility is more important than ever. Recently, the focus in research has changed towards innovation and IT and their effect on agility in organizations (Žitkienė & Deksnys, 2018). After analyzing 75 academic papers another research team found the following definition *"Organizational agility is learned, permanently-available dynamic capability that can be performed to a necessary degree in a*

quick and efficient fashion, and whenever needed in order to increase business performance in a volatile environment." (Walter, 2021). This definition sums up the concept and is widely accepted and supported by most scholars in the field.

In the literature three different viewpoints has often been used; (1) the perspective of enablers and capabilities that facilitate agility, (2) practices that give organizations agility and (3) how organizations interact with their environment through a sense-response dimension (Žitkienė & Deksnys, 2018). It is therefore reasonable to assume that these are the three main drivers of agility. In short it reflects the ability of a firm to sense and respond to changes in the market in which they operate (Zhen et al., 2021), this is therefore the basis for this thesis. Figure 2.1 provides a visual representation of organizational agility, and it is clear that the concept is complex and multifaceted. However, it is also clear that organizational agility is essential for firms seeking to succeed in today's fast-paced and unpredictable business environment. These factors will be elaborated further in the coming chapter 2.3.1.

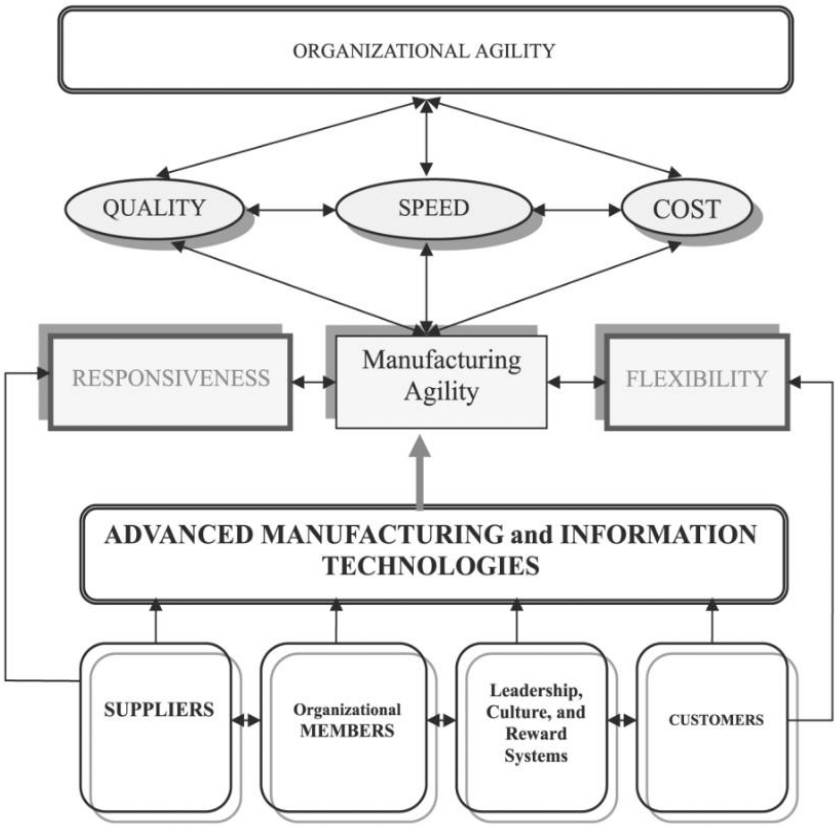

Figure 2.1: Factors affecting organizational agility (Crocitto & Youssef, 2003).

2.3.1 Factors affecting Organizational Agility

As with many other organizational characteristics, *leadership* is a fundamental part of creating agility in an organization (Crocitto & Youssef, 2003). A leader who can promote an environment where employees are empowered, engaged, and motivated to embrace change and take calculated risks is necessary. This requires leaders to encourage open communication, collaboration, and knowledge sharing among team members to foster a culture of learning and innovation. Furthermore, leaders must possess flexibility and adaptability to changing circumstances. They must be able to respond quickly and make decisions based on incomplete or uncertain information (Joiner, 2019). This quality is particularly important in today's rapidly changing business environment, where agility is critical to achieving success. Organizations with leaders who can create a culture accepting continuous change and adaptation from within, will lower the friction and increase responsiveness and flexibility resulting in a more agile organization (Crocitto & Youssef, 2003).

Organizational members are further an important component affecting organizational agility. Traditional organizational management with employees working by specialization may result in employees that are not interested in participating for organizational improvement. Working in projects possesses a mindset of teamwork where different employee specializations are working together with less segregation. The modification to these relationships across organizational borders has shown to increase the employee's responsibility for the firm creating a productive environment and at the same time maintaining valued workforces (Crocitto & Youssef, 2003).

An organization's relationship with its *suppliers* can affect its agility. This lays the foundation for the flow of supplies in and through the company. Connecting the organization to the suppliers there is often a sales team or person. Having a good relationship via this link can help both the supplier and the organization as they can have an open flow of information related to what products are needed and how they can both benefit from the relationship in a changing environment (Crocitto & Youssef, 2003). The sales team is here a key part as they get feedback both in the long and short-term from customers and can convey this to suppliers in order for them to adapt, thus increasing their agility. The suppliers also play a major part in how the organization meets the market as their input directly affects the end product (Yusuf et al., 1999).

The *customer* focus is also an important aspect when it comes to building organizational agility. In addition to building a long-term customer base, it is also important to focus on interpersonal aspects when it comes to organization-customer relationships. What is important here is that emphasis is placed on meeting the customers' needs through rapidity, quality, and interest (Crocitto & Youssef, 2003). When the organization knows its customers, it will thus be able to adapt more effectively to changes in market needs.

In our model we theorize that a higher degree of temporariness will have a positive effect on organizational agility. We believe this to be true as the shorter time horizon in a TO can make them more agile and therefore can increase the agility of the entire organization (Bechky, 2006).

2.4 Hypotheses and Research model

As explained earlier, today's fast-paced business environment provides organizations to be adaptable and flexible to succeed. The term "projectification" is, in this paper, described as *"The institutionalization of project work in society and the growing trend of organizations moving towards project-based structures".* At the same time, organizational agility is for this research defined as *"the ability of an organization to renew itself, adapt, change quickly, and succeed in a rapidly changing, ambiguous, and turbulent environment".* Both projectification and organizational agility are critical elements in today's business world, and there appears to be a strong relationship between the two.

However, there is still much to be learned about the relationship between projectification and organizational agility. While some scholars have stated that more project-based structures can lead to greater organizational agility (Walter, 2021), there is little empirical evidence to support this claim. Through this study, we will attempt to investigate if there in fact is a relationship between our independent variable (projectification) and our dependent variable (organizational agility). From our primary research question *"To what extent does projectification affect a firm's organizational agility?"* we have derived the primary hypothesis and the null hypothesis for this research:

H1: The extent of projectification has a positive significant impact on a firm's organizational agility.

H0: There is no significant relationship between a firm´s extent of projectification and organizational agility.

We will test these hypotheses using quantitative methods, which differ from previous studies that have taken qualitative approaches.

Furthermore, while there is a growing interest in project-based work across many industries, there is still a lack of empirical evidence regarding the development of projectification in the economy. Wald et al (2015) conducted a study on this topic, but it is now eight years old, and it is unclear whether the degree of projectification has increased or decreased since then. Therefore, in addition to our primary research question, we will also investigate the following: "Can empirical data validate the proposition that projectification is increasing as a trend?". To address this research question, we will include a survey question asking Norwegian firms about the percentage of their workers who are engaged in project work at any given time. Although we will not create a hypothesis related to this research question, we will use the survey data to explore whether projectification has indeed increased over the past eight years.

In any research study, it is essential to identify and consider potential moderating effects that could affect the relationship between the independent and dependent variables. By doing so, we can provide more accurate results by taking unique characteristics into account. In this particular study, we believe that one potential moderator is particularly relevant with an effect on the relationship between projectification and organizational agility: firm size.

Organizations comes in all shapes and sizes, and there is evidence to suggest that this variation in size might have a significant impact on the relationship between projectification and organizational agility. Further, the degree of projectification needed to achieve high levels of organizational agility may as well vary depending on the size of the organization. There have been found links between a firm's size and its agility (Kim & Lee, 2010). They hypothesize this is due to a larger company’s ability to draw advantage from economies of scope and derive greater synergic effects from their resources. Therefore, a second hypothesis is formulated for this research:

H2: There is a positive moderating relationship between the size of a firm and its organizational agility.

To ensure the validity of the model a control variable was added. From previous research, organizational theory the industry of a firm can have an effect on how a company operates (M. L. Andersen & Dejoy, 2011; Zhen et al., 2021). Therefore, industry type was included as a control variable. How this is done will be elaborated further in chapter 3.2.4. From the model below (fig. 2.2) one can see how this is incorporated by measuring if the industry of a firm influences organizational agility. Different industries have their own unique requirements and expectations, and some may be more complex, innovative, and competitive than others. Such differences can influence the extent to which firms within those industries engage in project-based structures and how agile they need to be. For instance, some industries are characterized by fast-paced changes and are often early adopters of new trends and technologies. Thus, organizations operating in such industries may need to be highly agile and project-oriented to manage the high levels of complexity and competition within their respective markets. On the other hand, other industries may have a slower adoption rate for project-based structures but may still require a certain degree of organizational agility to respond to changing customer demands and market trends.

To effectively investigate the hypotheses proposed for this study, a research model has been developed. A research model is a conceptual framework that outlines the relationships between variables and constructs of interest in a study (F. Hair Jr et al., 2014). It guides the research design and methodology by identifying the key variables to be studied and the possible causal relationships between them. The research model for this study has been developed based on the identified hypotheses and aims to explore the moderating effects of size on the relationship between projectification and organizational agility. Figure 2.2 presents a simplified illustration of our research model.

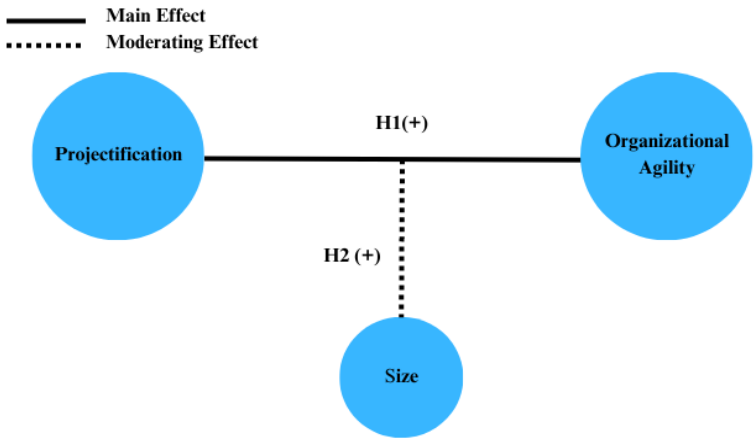

Figure 2.2: Research Model

Owing to the limitations of time and resources, it was imperative to focus and narrow down the scope of the research area. However, it is worth mentioning that other approaches may exist, and we intend to elaborate on these in our recommendation for further research. In order to gain a more comprehensive understanding of the subject matter, exploring different avenues of research could potentially yield valuable insights and contribute to the overall body of knowledge in the field. We will therefore explain more about possible other approaches in our recommendation for further research.

3 Method

The further section of this thesis describes the methods used for data collection and data analysis. In order to acquire primary data, an electronic survey was employed with the objective of reaching a substantial number of respondents within a constrained time frame. Chapter 3.1 will provide a more detailed explanation of which methods were used to carry out the survey and how it was prepared. Following this the ethical considerations for obtaining information will be explained.

Further, in chapter 3.2, we will provide a detailed description of the operationalization of the selected variables, which serve as the fundamental components under investigation in the study. These variables act as measurable indicators of the concepts being studied and will be

used to explore the relationships between them. Specifically, the study aims to investigate the relationship between organizational agility and projectification, while also considering the potential moderating impact of firm size and control for industry type.

Our chosen method for data collection is a quantitative questionnaire. From the collected data a PLS-SEM analysis will be conducted. This approach enables us to examine the relationships between the independent- and dependent variable, and between the variables and the indicators that measure them simultaneously.

3.1 Data collection and sampling

When collecting data for *quantitative research* such as this study, gathering enough data in an efficient and correct manner is crucial. Therefore, we will use an online questionnaire that is based on the one used in the replicated study. The objective of the data collection was to see the development in projectification in the Norwegian economy as well as its effect on organizational agility.

Our research aimed to gather primary data on the concept of projectification through collaboration with another master's thesis group. We partnered with this group, which was conducting a similar study on projectification, but with work flexibility as the primary variable. This partnership provided us with an opportunity to design a survey that would enable us to collect data effectively and efficiently, thus obtaining the information we needed in a timely manner. By working collaboratively, we were able to make the data collection process less extensive and time-consuming.

Our specific objective was to obtain quantitative data and identify correlations between projectification, organizational agility, and work flexibility. Since this research is a replication of the study that Wald et al. (2015) carried out on projectification and strategic flexibility in Germany in 2015, we used the same questionnaire as they conducted. To be able to compare our specific variables (organizational agility and work flexibility), questions from previous research were also attached so that the variables are measured in the same way as for our specific studies.

This approach enabled us to measure the variables of organizational agility and work flexibility in the same way as for former studies and compare our results with theirs. By replicating the methodology used by Wald et al. (2015) and Hair et al. (2017) expanding it to include organizational agility and work flexibility, we aimed to contribute to the body of knowledge on projectification and its impact on organizations.

3.1.1 Electronic questionnaire

In this research, an online questionnaire format was chosen to gather data. To ensure the study's validity and reliability, the same questionnaire used in a previous study was used, with variables to measure the effect of projectification on organizational agility added to answer the research question.

Online questionnaires are used regularly as they have several advantages. For this study the main advantage of an electronic questionnaire is its ability to be efficiently distributed to many potential respondents (Bougie & Sekaran, 2020). To ensure the validity of this research having a large enough number of respondents is crucial. For this study, reaching respondents with knowledge about projectification and inside information from different companies in Norway was important as this would give us the most rightful answers to base the following analysis on. To accomplish this, we sourced potential respondents from Proff Forvalt, a reputable website that provides updated accounts and market information. We selected this source as it offered a comprehensive list of organizations and provided us with a large number (±12 500) of email addresses to reach informants across various sectors of the Norwegian economic landscape.

To ensure clarity for all respondents, the questionnaire was sent out in both Norwegian and English, even though most Norwegian companies and project managers are proficient in English. The language clarity ensured that our respondents could easily understand and provide accurate responses. Further, we sent the questionnaire to all possible respondents in the population, filtering out companies that did not provide email addresses. This allowed us to maximize our sample size and reach a diverse range of organizations in the sector. However, to ensure data quality, we also conducted another filtration step to eliminate duplicate email addresses. This resulted in a final sample size of 205 unique organizations that we could survey.

One of the advantages of utilizing electronic questionnaires to survey the research question is its ability to let respondents answer in their own time and at their own pace (Bougie & Sekaran, 2020). For this study this feature is particularly important as many of the respondents in the target group are busy professionals with limited spare time and tight schedules. Giving them time to decide when to answer the survey in their own time can be presumed to heighten the response rate.

However, there are not only positive sides to using online questionnaires. One of the drawbacks is that they do not facilitate clarifying potential questions the respondents might have (Bougie & Sekaran, 2020). The response rate of questionnaires is typically rather low and there can occur an issue with sampling as some respondents might be more inclined to answer than others. This is typically referred to as non-response bias (Sedgwick, 2014). These factors can make it more challenging to generalize findings, but as this is the model the original study used, the reliability should be maintained.

3.1.2 SurveyXact

To construct the online questionnaire, the Scandinavian survey program SurveyXact was used. The program allowed us to explore the strategies and methods used during the respondents' most recent project, a critical component in assessing the degree of agility. The program provided an easy means of transferring our existing questionnaire into an online survey format, which enabled us to reach a larger sample in less time. SurveyXact is advantageous to use as the anonymity of the respondents is ensured and its flexibility and ease of use makes it simple to administer to large quantities of people and send reminders. Using this software does however not enable us to check whether the respondents are qualified or not - this is trust based which is the norm for this type of research.

3.1.3 Questionnaire design

The questionnaire we used for this thesis was the same used in the original study by Wald et. al (2015) and the replication by Skeibrok and Svendsson (2016) in order to generalize and compare our results. As for the previous research on this topic, this study does also ask for figures from the previous fiscal year (2022). The flow of the questionnaire was as follows:

Part A	Industry knowledge
Part B	Project work
Part C	General information about the firm ant the respondent
Part D	Work Flexibility
Part E	Organizational agility

Table 3.1: Questionnaire design

The Likert scale was used to assign the value and weight to each of the questions in the questionnaire, allowing respondents to choose the response most fitting to their situation and providing the answers needed to execute the analysis in this paper. For this questionnaire, the scale of choice was a seven-point ranging from strongly disagree to strongly agree (symmetric). Other information, such as the age of the company and monetary values, was collected by the respondents typing in their answers. The full questionnaire can be seen in the appendix C.

Based on the responses that are received from this questionnaire there can be drawn conclusions to answer the research questions posed in this thesis. It should give enough data to either establish or rule out a correlation between organizational agility and projectification via data analysis in SmartPLS.

3.1.4 Ethical considerations

Protection of personal data is important when research projects are carried out. The University of Agder's code of practice for processing of personal data in research obliges researchers to notify The Norwegian Agency for Shared Services in Education Research (SIKT) to ensure that the research survey meets requirements for data protection. The purpose of obtaining such approval is to ensure that the planned processing is in line with the legislation when it comes to personal data. Related documentation can be found in the appendix A.

3.2 Operationalization of variables

Although physical measuring devices are not available to measure abstract constructs, there are alternative methods for accessing these types of variables. One approach is to translate these constructs into observable behaviors or characteristics. This involves examining the specific

dimensions and characteristics associated with the concepts. The process of rendering abstract concepts measurable in a concrete way is referred to as operationalization (Bougie & Sekaran, 2020). In this section, we will examine how variables, constructs, and their associated items are measured. To ensure comparability with prior research, the experiment will utilize measurement units that are similar to those employed in previous studies to measure the same objects.

3.2.1 Dependent variable

The primary aim of this study is to explore how projectification affects organizational agility, which is thus the dependent variable of the research. The topic of organizational agility can be a complex one to discuss, particularly when it comes to measurement. The question of how to measure organizational agility of a business can be difficult to answer. This is because there may not be a single measurement tool that is suitable for all organizations in all circumstances.

In this study we have chosen to measure the organizational agility of participating organizations through a series of statements. The measurement scales are adapted from Zhen et al (2021) and Ravichandran (2018) who explored how IT competencies affect organizational agility. The measures for the level of organizational agility consist firstly of five items to examine the company's internal view of agility, for instance *"We are quick to make appropriate decisions in the face of market change"* (Zhen et al., 2021). Further, the survey addresses questions where the company compares internal views on agility compared to its competitors in the market. The statements are designed to provide insight into the agility of an organization, considering a variety of factors that contribute to overall agility. It was for all items assumed that higher values indicated a higher degree of organizational agility.

3.2.2 Independent variable

The independent variables play a crucial role in any research that seeks to examine the relationship between different variables. These variables are those that have an impact on the dependent variable and can either positively or negatively influence it. Furthermore, the relationship between the independent and dependent variables can be of a linear or nonlinear nature (Bougie & Sekaran, 2020). A small change in the independent variable can lead to a noticeable change in the dependent variable (Bougie & Sekaran, 2020).

In this research, the aim is to understand the impact of transforming organizations into temporary structures, also known as projectification, on organizational agility. Projectification thus serves as the independent variable and will be evaluated by determining an organization's reliance on project-based structures and processes. Projectification is a widely adopted organizational trend and has significant implications for organizational agility, making it a relevant and important independent variable to study.

Furthermore, this independent variable allows the research to examine the effect of different levels of projectification on organizational agility. The research will be able to explore the impact of both high- and low levels of projectification, providing a comprehensive understanding of the relationship between projectification and organizational agility. This can be important as organizations may have varying levels of reliance on project-based structures and processes, and it is essential to understand how different levels can impact organizational agility. Using projectification as an independent variable in research about the relationship between projectification and organizational agility provides valuable insight into the impact of project-based structures and processes on organizational agility.

3.2.3 Moderating variable

According to Sekaran and Bougie (2020), a moderating variable is an independent variable that can either strengthen or weaken the relationship between the independent and dependent variable. When a third variable affects the relationship between two related variables, we have a moderating effect (Hair et al., 2017). The significance of moderating variables lies in determining if the relationship between the dependent and independent variables differs for certain groups in the research (Vij & Farooq, 2017).

Firm size is a moderating variable that can be useful in studying the relationship between projectification and organizational agility because it has the potential to affect the strength and nature of the relationship. Firm size may impact the level of project-based work within an organization, as well as its ability to quickly respond to changes in the environment. Smaller firms may be more agile due to their smaller size and flatter organizational structure, while larger firms may have more bureaucratic structures that can hinder their organizational agility. Additionally, larger firms may have more resources and capabilities to dedicate to project-based work, which could increase their projectification. The moderating effect of firm size can

therefore provide insight into the relationship between projectification and organizational agility and help to better understand how different firm sizes may experience the relationship differently (Solikhah et al., 2022).

3.2.4 Control variable

As one is collecting data to establish a cause and effect relationship, control variables are used to limit the possible other variables affecting the data. If other factors than those included in the model (independent variables) have a significant effect on the change in the dependent variable it renders the results invalid (spurious) (Bougie & Sekaran, 2020). These variables have little to none theoretical interest and are mostly included to clear the data from noise to highlight the true link in a cause and effect relationship (Spector & Brannick, 2011).

For this thesis the control variable used to ensure validity in the results was the industry of the organizations who responded. As this can have a profound effect on how a company operates and the nature of the firm. To get the most reliable results from adding control variables, they were bundled together in three groups: Industry 1: *Fisheries/agriculture/forestry* and *Oil and gas activities*, Group 2: *Manufacturing* and Group 3: *Other services (excluding financial), Information & Communication, Public Sector/education/healthcare, Financial Services and Sales/transport/service/tourism.* These groups are separated by primary, secondary and tertiary sectors.

3.3 Data analysis

3.3.1 PLS-SEM

In this research, the proposed model was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). This is a hybrid statistical model that combines the strengths of both PLS and SEM to analyze complex relationships between variables. It is a resourceful model that can be adapted to suit different research questions and data types, making it a valuable tool for organizational researchers.

PLS is a causal model technique that can handle small sample sizes, non-normal distributions, and a high number of variables. PLS also provides a more robust estimation of the relationship between the variables even if the relationship is weak or nonlinear (Hair et al., 2017). This is a

good measurement tool to examine the direction of causality between projectification and organizational agility. Further it can handle both formative and reflective measurement models, which means that it can capture the unique characteristics of the constructs being studied (Hair et al., 2017). This is particularly useful when examining constructs such as projectification and organizational agility, which can be difficult to measure directly.

The SEM-model can handle multiple variables simultaneously, allowing us for more comprehensive analysis of the relationship between projectification and organizational agility. It can account for measurement errors and provides a more accurate estimation of the relationship between the variables. Further, it gives the opportunity to test and validate theoretical models using both observed and unobserved variables. This means that it allows us to examine how projectification affects organizational agility while controlling for other factors that may also influence organizational agility.

The software of choice for this analysis is SmartPLS. This allows for building models in an efficient and understandable manner with the data collected in SurveyXact.

3.3.2 Data Preparation

To prepare the raw data from the questionnaire one firstly must prepare the dataset (Bougie & Sekaran, 2020). This entails removing partially and not answered responses, illogical answers, and inconsistencies. For most online questionnaire-based projects, this one included, the most common error is respondents opening the questionnaire only to close it again after answering few or no questions.

After removing the respondents that had only answered the first few or no questions, we were left with 205 respondents that had successfully answered the questionnaire. Out of these, there were some missing answers, however they all satisfied the demands of 5% per indicator (Hair et al., 2017). In planning this study, the two teams using this questionnaire and our supervisor had agreed on a lower limit of 200 respondents, thus this satisfied the expectation. This number also satisfies the rule of thumb proposed by Hair (2017) of 10 times the number of independent variables. The omitted responses can be a result of different factors, such as unwillingness to fully answer or the respondents opening the questionnaire without planning to answer it.

In this questionnaire, respondents were repeatedly asked to fill in their answers manually. These questions were generally about the earnings, turnover and other numerical values. For q16 many respondents have misunderstood the scale used and written their responses in NOK instead of MNOK. To adjust for this numbers that were clearly a result of misunderstandings were modified to the correct format. For the few missing values, these were removed in the data analysis. Further illogical and inconsistent answers were assessed and corrected. For example, one respondent had as many people working in projects as there were people working in the company without a high degree of project work; this was adjusted to avoid bias in the answers. Another common inconsistency was respondents giving a range instead of one specific answer. This was typically a firm with 12-20 employees, here the average between the two was used to give the most correct value that could be used in an analysis. In this example the assigned value was 16.

$$\frac{(12 + 20)}{2} = 16$$

Coding the answers entails writing all values in numbers to prepare them for SmartPLS and further analysis. For this questionnaire substituting yes/no answers (q6, see appendix C) to 1 / 2 was needed to get values suitable for analysis. Other necessary coding included changing written answers such as “not in use”, “far worse” and “not successful” to 1 and “used a lot”, “far better” and “particularly successful” to 7. These numbers were used to compare these values to those gathered using the 7-point Likert scale described in chapter 3.1.3.

3.3.3 Distribution of the data

Data distribution refers to the pattern in which the values in a dataset are distributed across a range of possible values. In order to examine the data distribution and to test the normality of the data, a skewness and kurtosis test was employed. Skewness, as a statistical measure, helps us understand whether the distribution of our variables is symmetrical around its mean. On the other hand, kurtosis provides a convenient way to determine whether the distribution of our data is too peaked or too flat. According to Hair (2014), a sample is considered to be normally distributed when both skewness and kurtosis are zero, although this is rarely the case in practice. As a rule of thumb, it is suggested that skewness values above +1 or below -1 indicate

a significantly skewed distribution, while kurtosis values above +1 or below -1 indicate a distribution that is too peaked or too flat, respectively.

The statistical method that is being employed in this study (PLS-SEM) is a non-parametric approach that does not require the data to be normally distributed (Hair et al., 2014). However, it is crucial to ensure that our data is not too far from normal, as this can create issues concerning the significance of the parameters. Therefore, it is important to analyze the skewness and kurtosis values of our data and take appropriate measures to correct any significant deviations from normality. This will ensure that our analysis is robust and that the results produced are reliable.

As we examine the normality of our sample in SPSS, the skewness falls within the acceptable range of -1 and +1 for the majority of the items. However, items 11.3, 11.4, and 11.5 exhibit skewness values that are slightly less than -1. Additionally, items 11.3 and 21.1 have kurtosis values that are a bit above 1. Nonetheless, these deviations are not far from the interval of -1 and 1, and as previously mentioned, they will not cause any issues when employing PLS-SEM as long as the data is not too far from normally distributed. The overview of the skewness and kurtosis values are illustrated in Table 3.2.

Items	Skewness	Kurtosis
11.1	-0.653	-0.385
11.2	-0.799	-0.182
11.3	-1.329	1.159
11.4	-1.180	0.477
11.5	-1.216	0.756
21.1	-0.964	1.095
21.2	-0.962	0.798
21.3	-0.099	-0.317
21.4	-0.997	1.001
21.5	-0.721	0.685
22.1	-0.290	-0.063
22.2	-0.311	-0.116
22.3	-0.421	-0.013
22.4	-0.191	-0.011
22.5	-0.230	-0.110

Table 3.2: Skewness and kurtosis

Overall, our sample does not exhibit substantial skewness or high kurtosis. Therefore, although there are some issues related to the normality of our sample, they are not critical for the statistical method we are using. PLS-SEM does not require normality, as long as the data is not too far from normally distributed, which we believe is the case with our sample. In conclusion, while we have identified some deviations from normality in our sample, they are not substantial.

3.3.4 Common Method Bias

In order to ensure the validity and reliability of the research result, it is important to check for common method bias. Common method bias occurs when the same method is used to collect data for multiple variables in a study, and it can lead to spurious correlations among the variables, inflated effect sizes, and biased estimates of model fit (Kock, 2015). These issues can have significant implications for the accuracy of the study findings, potentially leading to incorrect conclusions and invalidating the study's results. In addition, common method bias can limit the generalizability of the findings and make it difficult to replicate the study results in different contexts. By checking for common method bias and taking steps to address it, the quality and credibility of the research can be improved, increasing the likelihood that the findings accurately reflect the relationships among the variables of interest (Kock, 2015).

In order to examine the presence of common method bias within the dataset, a Harman's single-factor test was administered, as utilized by Tyssen, Wald and Heidenreich (2014). Harman's single-factor test involves conducting a factor analysis on all the variables in the data set and assessing whether a single factor accounts for a large portion of the variance in the variables. If a single factor accounts for a majority of the variance in the variables, it suggests the presence of common method bias (Kock, 2015). The results from the test conducted in SPSS indicated that the general factor accounted for 42.47 % of the overall variance, which is lower than the typical threshold of 50% (Tyssen et al., 2014), suggesting that common method variance is unlikely to be a significant concern in this study.

We further utilized the Lindell-Whitney marker variable test also conducted in Tyssen, Wald and Heidenreich (2014). The Lindell-Whitney marker variable test is a statistical method used to test for the presence of common method variance in a data set. This is a type of bias that can occur when a single method is used to collect data for multiple variables in a study, leading to

spurious correlations and potentially invalidating the study's findings (Lindell & Whitney, 2001). The Lindell-Whitney marker variable test involves including a marker variable in the data set, which is unrelated to the other variables in the study but is measured using the same method. By including a marker variable, the test assesses whether the variance in the other variables can be explained by the marker variable, indicating the presence of common method variance (Lindell & Whitney, 2001).

To conduct this test, an unrelated marker variable was implemented to the model with random numbers in SmartPLS. High correlations among any of the study´s principal constructs and the marker variable would indicate common method bias (Kock, 2015). All factor-level VIFs resulting from the full collinearity test were below 3.3 as illustrated in table 3.3. And as indicated in Kock (2015), values below 3.3 thus reveal that the model is free of common method bias.

	VIF
Organizational agility -> Random	1.141
Projectification -> Random	1.141

Table 3.3: VIF-values for common method bias

3.3.5 Path Model specification

The model that is being referred to comprises two fundamental components: a structural model and a measurement model. The structural model, also known as the inner model, focuses on establishing the connections between the constructs or variables within the system. It explains the underlying factors and how they interact with each other to generate the observed phenomena. It provides the paths between the constructs and enables us to test the hypotheses regarding the relationships between them.

On the other hand, the measurement model, or the outer model, is concerned with identifying and representing the relationship between the constructs and their respective indicator variables. It involves selecting a set of measures or indicators that accurately reflect the constructs of interest and then determining the extent to which these measures are related to the constructs they represent.

Further, in PLS-SEM we differentiate between two measurement scales to measure the latent constructs. In a reflective measurement model, the observed indicators are thought to be caused by the underlying latent construct. The indicators are considered to be interchangeable and are used to measure the same construct from different perspectives (Hair et al., 2017).

In contrast, in a formative measurement model, the latent construct is thought to be created by the observed indicators. This means that the observed indicators are not interchangeable and may have different effects on the latent construct. The main difference between a formative and a reflective measurement model is the direction of causality between the indicators and the latent construct. In a reflective model, the indicators are caused by the latent construct, while in a formative model, the latent construct is caused by the indicators (Hair et al., 2017).

In this particular model, the observed indicators are caused by the underlying construct and they are used to measure the same construct from different perspectives. Therefore, all the items are reflective. The path model of this research is thus illustrated in figure 3.1.

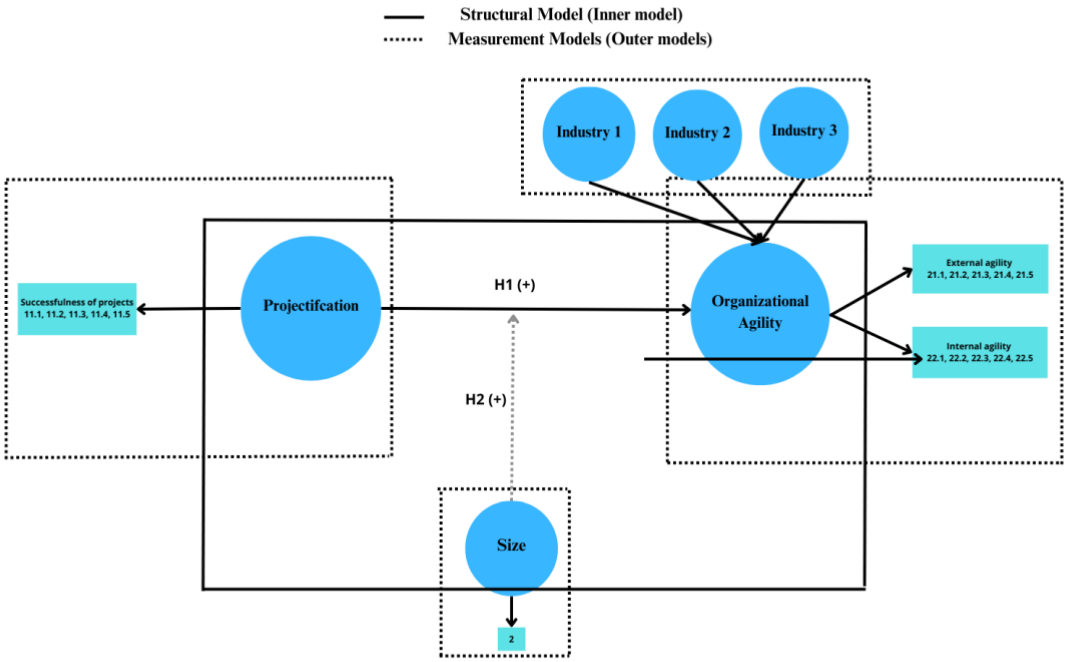

Figure 3.1: Path model

3.3.6 Outer Model Evaluation

When it comes to conducting research, it is essential to ensure that the measures being used are reliable and valid. In our study, we examined the reflective outer models of our research and employed various methods to evaluate their internal consistency and validity. Composite reliability was used to assess the consistency reliability of the construct measures, which is an important consideration in determining the accuracy and consistency of the results obtained. Composite reliability ranges from 0 to 1, with higher values indicating better reliability. According to the PLS-SEM algorithm, the composite reliability of our independent variable, projectification, was calculated to be 0.971, while our dependent variable, organizational agility, had a composite reliability of 0.921. These results indicate that both variables exhibit good reliability.

To further establish the validity of the constructs, we examined convergent validity by looking at the outer loadings of the indicators. According to Hair (2014), a convergent validity of a construct is supported when each item has outer loadings above 0.7. However, Hair (2017) suggests that although outer loadings between 0.4 and 0.7 may not contribute significantly to the overall construct, they may still be valuable indicators for the construct and should be considered before elimination. Therefore, it is important to consider both the magnitude of the outer loadings as well as their statistical significance in determining the convergent validity of a construct. Figure 3.2 and 3.4 shows the outer loadings for the final items of the outer models for projectification and organizational agility.

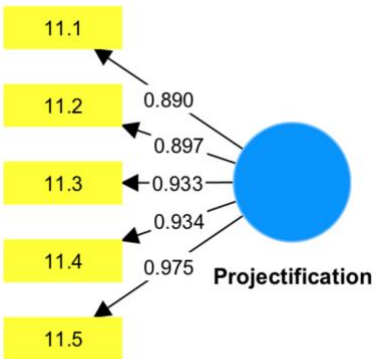

Figure 3.2: Indicator outer loadings- projectification

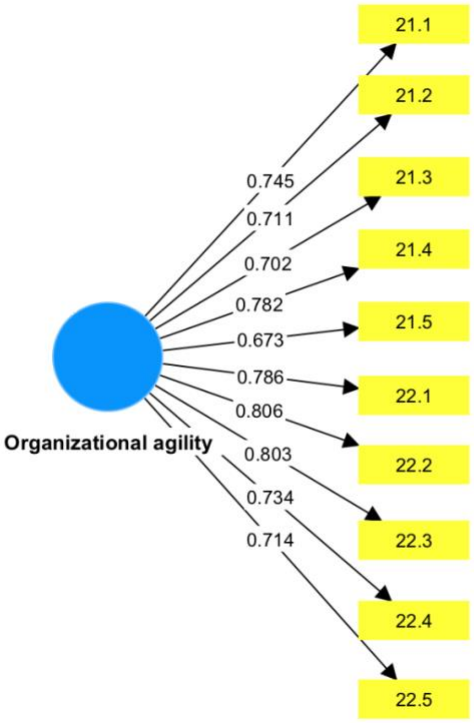

Figure 3.3: Indicator outer loadings- organizational agility

Additionally, we considered the average variance extracted (AVE) of the constructs as a means of establishing their validity. AVE is a measure of how much of the variation in the indicators can be attributed to the construct, with a score of 0.5 or higher indicating satisfactory construct validity (Hair et al., 2017). It is a valuable tool for ensuring that the construct measures what it is intended to measure and that it is distinct from other constructs.

During our testing, we discovered that some of the items intended to be used as indicators for organizational agility had low outer loadings and an AVE for organizational agility under 0.5, indicating that they were not contributing significantly to the construct. This was the measurement scale adapted from Ravichandran, 2018 in question 20 in the survey. Therefore, we decided to eliminate these items to ensure the validity and reliability of our measures.

After eliminating these items, we found that the AVE for projectification was 0.858, indicating strong construct validity, and the AVE for organizational agility was 0.558, indicating satisfactory construct validity. Although the loading for item 21.5 was less than 0.7, we decided to retain this item as it is a part of the measurement scale as it was thus not too far from 0.7.

To further ensure that the constructs were distinct from each other, we conducted a test of discriminant validity. Discriminant validity refers to the extent to which the construct is empirically distinct from other constructs, and it is essential for establishing construct validity

(Hair et al., 2014). To perform this test, we utilized the method of cross-loadings of the indicators, carefully verifying that the loadings of each indicator were consistently higher than the cross-loadings of the other indicators. Upon analyzing our results, we discovered that all the cross-loadings were indeed lower than the outer loadings, providing strong evidence for the construct validity of our measures. These findings are further detailed in Table 3.3.

Latent variable	Indicator	Loadings	Cross loadings	t-value	Composite reliability	AVE
Projectification	11.1	0,890	0,310	43,987	0,971	0,858
	11.2	0,897	0,309	43,134		
	11.3	0,933	0,368	59,601		
	11.4	0,340	0,411	74,194		
	11.5	0,750	0,410	74,194		
Organizational agility	21.1	0,745	0,326	11,573	0,921	0,558
	21.2	0,711	0,252	9,954		
	21.3	0,702	0,279	13,485		
	21.4	0,782	0,304	12,427		
	21.5	0,673	0,229	9,502		
	22.1	0,786	0,345	19,420		
	22.2	0,806	0,324	20,642		
	22.3	0,803	0,369	22,086		
	22.4	0,734	0,226	14,649		
	22.5	0,714	0,228	13,346		

Table 3.4: Loadings, Cross Loadings, t-values, composite reliability and AVE

In summary, our evaluation of the outer model revealed that consistency reliability, convergent validity, AVE, and discriminant validity have satisfactory results for this study. By ensuring these standards were met, we were further able to establish the reliability and validity of our study's outer model and can have greater confidence in the accuracy of our findings. The use of these methods is critical in establishing the validity and reliability of measures in research and ensures that the conclusions drawn from the study are accurate and trustworthy.

3.3.7 Inner Model Evaluation

Evaluating the performance of the inner model is a critical step before testing the theoretical frameworks or models that include multiple variables and their relationships. However, these models can be subject to a range of biases and limitations, which can impact their accuracy and generalizability. Therefore, it is essential to employ appropriate techniques and criteria to evaluate the performance of the inner model and to ensure that it meets the necessary standards for scientific research.

One important aspect of evaluating an inner model is assessing whether there are any collinearity issues that could impact the accuracy of the model estimates. Collinearity refers to the situation where predictors in the model are highly correlated, leading to biased estimates and unstable results. For example, if two predictor variables in the model are highly correlated, it can be challenging to determine which variable is driving the relationship with the dependent variable (Hair et al., 2017). Therefore, detecting and addressing collinearity is essential to ensure that the model estimates are accurate and reliable.

To detect collinearity, the variance inflation factor (VIF) technique will be employed. The VIF value measures the inflation of the variance of the regression coefficients due to the presence of correlated predictors. As recommended by Hair et al. (2017), a VIF value of 5 or higher indicates a potential collinearity problem. Examination of the VIF values of the dependent variable, organizational agility, was assessed in smartPLS. Table 3.5 shows that all the values were below 5 and thus collinearity is not a concern for this study.

	VIF
Projectification -> Organizational agility	2.540
Size -> Organizational agility	2.440
Size x Projectification -> Organizational agility	3.911

Table 3.5: VIF values

Once collinearity issues have been addressed, we can further move on to evaluating the theoretical and empirical support for the path model. This involves assessing the hypothesized relationships within the inner model using appropriate criteria and statistical techniques. In PLS-SEM, the model uses sample data to obtain parameters that best predict the endogenous constructs, which in this study is organizational agility. Unlike other statistical methods, PLS-SEM does not have a standard goodness-of-fit statistic. Instead, the quality of the model is assessed based on its ability to predict the endogenous construct (Hair et al., 2017).

Chapter 4.3 of the research paper will examine the hypothesized relationships and assess the criteria for facilitating the key results. These criteria include the coefficient of determination (R-square), cross-validated redundancy (Q-square) and assessing the path coefficients. Each of

these criteria provides important information about the performance of the inner model and the strength of the relationships between the variables in the model. By evaluating these criteria, we can determine whether the inner model provides a good fit to the data and whether the hypothesized relationships are supported by the empirical evidence.

In addition to evaluating the hypothesized relationships we employed the bootstrapping method to estimate the inner and outer model parameters. Bootstrapping is a statistical technique that involves randomly selecting a sample of observations from the original dataset, computing the statistic of interest, and repeating this process many times to obtain a distribution of the statistic. This technique allowed us to estimate the standard error of the statistic and construct confidence intervals. By using bootstrapping, we obtain more accurate estimates of the model parameters and increase the reliability of the findings. For this procedure we used a subsample of 5000 with a corresponding significant level of 0.05.

3.3.8 Advanced topics- Moderation

To fully assess the proposed hypotheses, we conducted a comprehensive analysis that delved deeper into the potential impact of the path models' moderator; size. Specifically, the hypothesis H2 was concerning the moderating effect of size on the relationship between projectification and organizational agility. To research this, we employed a partial least squares multiple-group analysis (PLS-MGA), a sophisticated statistical technique that allowed us to better understand the interplay between different variables.

Hypothesis H2, which explores whether the size of a firm has a moderating effect on the relationship between projectification and organizational agility, was analyzed using the size moderator. To ensure that our analysis was as precise as possible, we split the firms into two groups based on their number of employees: small and medium-sized firms with fewer than 100 employees, and large firms with 100 or more employees. By comparing the two groups, we were able to determine whether size played a significant role in shaping the proposed relationship.

Through our analysis, we were able to calculate the absolute difference of the group-specific path coefficient, and the results of these tests will be fully presented in chapter 4.3. By conducting this thorough analysis and exploring the potential moderating effect of size of the

company, we were able to gain a more nuanced understanding of the complex relationship between projectification and organizational agility, and to determine a factor that may impact this relationship.

4 Results

In the following chapter the results of the data that has been collected will be presented through both the descriptive- and PLS-SEM analysis. Firstly, the descriptive data of the sample will be elaborated upon, following this the degree of projectification is explored. Further, we will take a closer look at the degree of organizational agility in our sample. Lastly, the results of the PLS-SEM analysis will be presented chronologically for the two hypotheses.

4.1 Descriptive data

In chapter 4.1 and 4.2 the descriptive data will be analyzed, and the findings presented. The sample will be elaborated on and commented on before looking at the degree of projectification and organizational agility respectively.

4.1.1 Sample description

Before diving deeper into the analysis, we will present our sample. After a long process of data collection, the final number of respondents was 205. These represented a wide variety of characteristics and industries. The main differences between the respondents were in industry, size and their project types and usage, these will all be represented in this chapter.

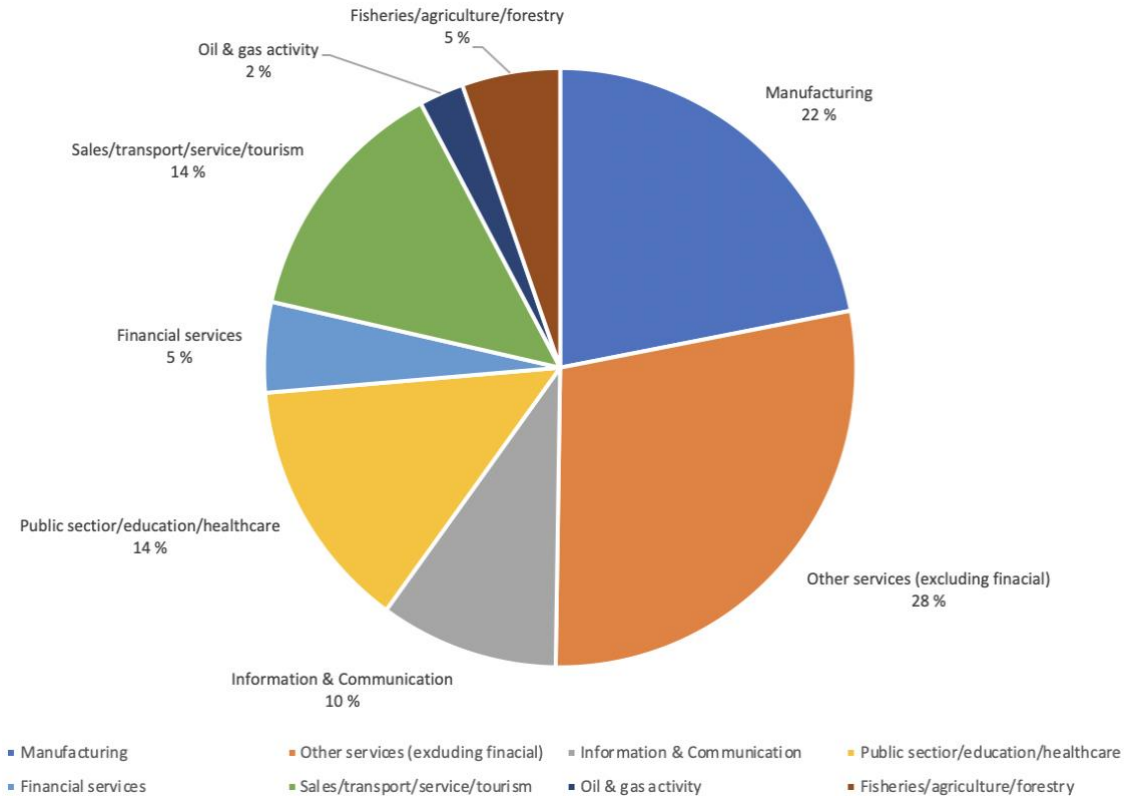

Figure 4.1: Distribution of Industry

The different industry types are presented in the diagram above. As we can see other services (excluding financial) and manufacturing are very well represented with a total of 50% (103) of the respondents being from these two industries. These findings are in line with the expectations as most companies in Norway are in these industries. Another notable industry in this model is Oil & gas activities. With a total of 5 respondents (2,4%) it is the smallest of our response groups. This is despite Oil & Gas being the biggest source of income (measured in GDP) in Norway (Norsk næringsliv, 2022). As most of the companies in this industry are very large and represent a rather small portion of the workforce in Norway, having few respondents from this sector could be expected.

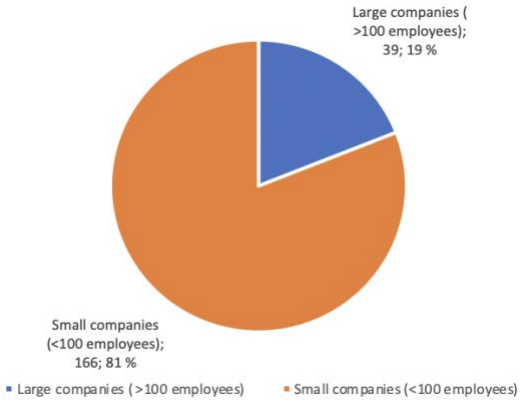

Figure 4.2: Firm Size

In a country such as Norway, which is a relatively small country, having many smaller companies is natural. This is also reflected in our respondents, with only 19% of the respondents being firms with 100 or more employees (See fig. 4.2). The largest firm in our survey was a financial service firm with 22 000 employees that pulled the average for financial service firms up substantially as they only constituted 9 out of 205 respondents. The average number of employees in all industries was 258 with Information & Communication having the least, with an average of 63 respondents.

Sector	Respondents	Avg. Employees pr company
Manufacturing	45	162
Other services (excluding finacial)	58	223
Information & Communication	20	63
Public sector/education/healthcare	28	170
Financial services	10	2281
Sales/transport/service/tourism	28	93
Oil & gas activity	5	84
Fisheries/agriculture/forestry	11	81
Sum	205	258

Table 4.1: Employee overview

4.1.2 Degree of projectification

To measure the degree of projectification we used eight different questions (4-12, see appendix C). Most of these were related to the number of working hours spent in project work, the financial means used in projects and how successful these were. On average, between all

companies, we found an average of 38,95% of working hours being spent on projects. The sector seems to have a profound effect on both the amount and size of the projects. Per sector the percentage varied between 25,7% (financial services) and 84,8% (Oil and gas activities). Most sectors averaged between 35% and 43% with only minor variations between them. In the Norwegian economy, oil and gas have a rather unique position as it is partially private and partially public and in 2022 contributed to 73,4% of the exported value from Norway with an export value of 1 933,4 billion NOK (SSB, 2023a). Due to its high profitability it is also taxed with a rate of 78% (petrsktl, 1975, §5) to ensure a fair distribution of wealth. Therefore, having deviating numbers in this sector in relation to the rest of the economy can be expected. It must also be mentioned that with only 205 respondents the numbers collected can be affected by a couple large companies in each sector that somewhat skews the results.

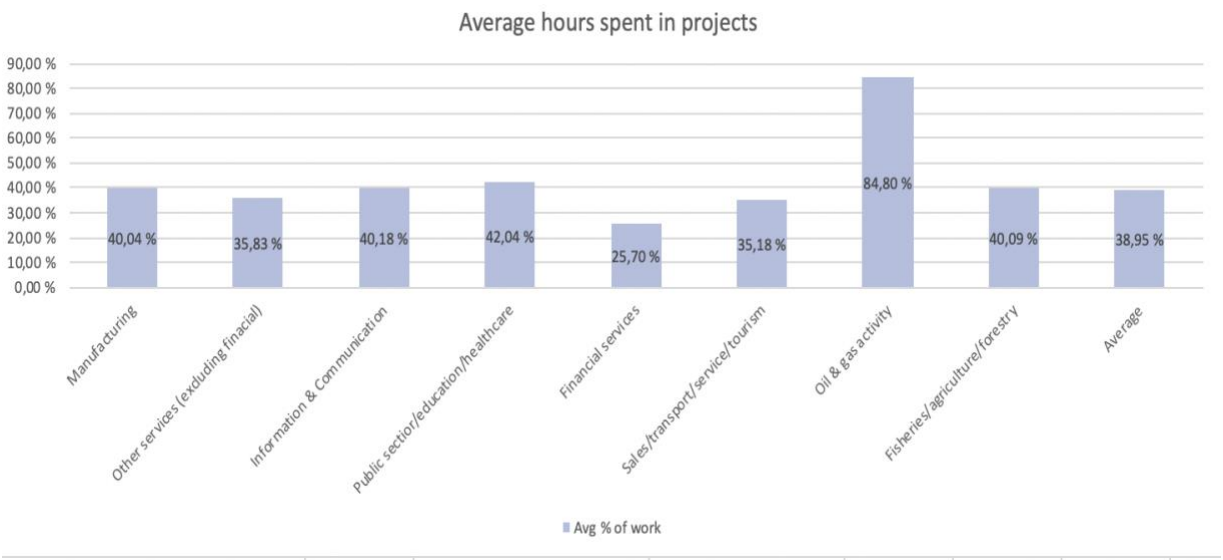

Figure 4.3: Average hours spent in projects.

From the figure 4.4 below we can read the percentage of revenue created in projects is slightly higher in small firms (<100 employees), however the smaller companies have a far higher discrepancy between working hours and revenue created in projects. This can indicate that having larger projects and more sizable organizations can make the projects more efficient. Differing company sizes have previously been found to have a significant effect on the way projects are carried out (Turner et al., 2012). Some of this can be attributed to the tools available for larger companies or the need for interpersonal relationships in smaller companies.

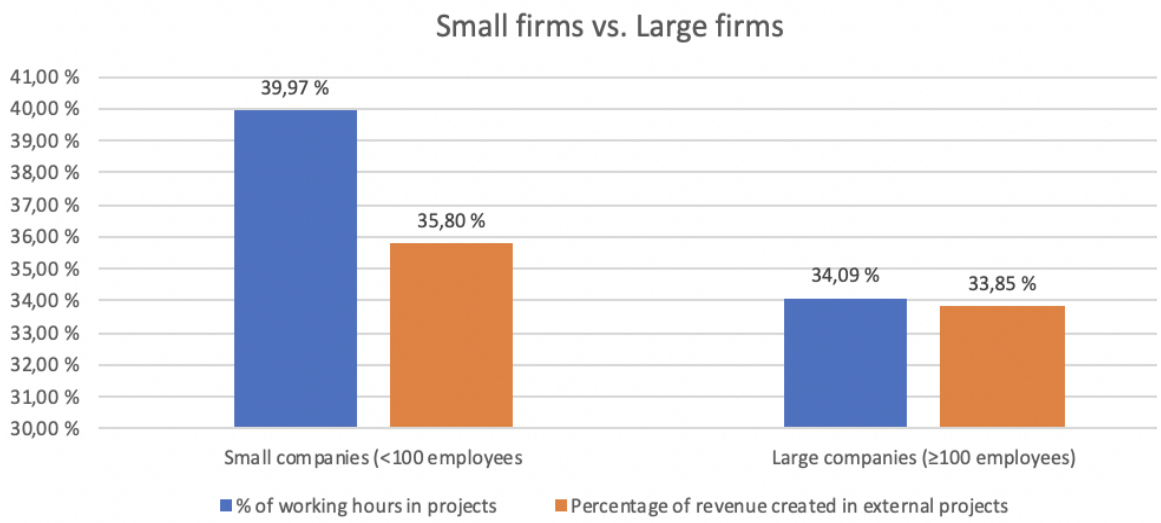

Figure 4.4: Small firms vs. Large firms

Larger companies have a far larger cost per project than can be seen in smaller companies. This would be expected as most of these companies have larger orders, customers, and budgets. Companies with 100 or more employees had almost six times as high project budgets as small companies, however this can to a large extent be attributed to the nature of the matter.

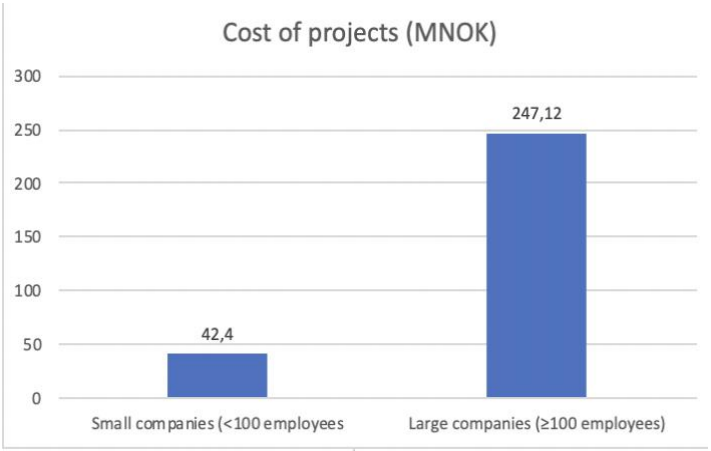

Figure 4.5: Cost of projects (MNOK) company size

More interesting than firm size the industry if a company is a rather good predictor on project size. Again, oil and gas is an outlier with an average cost per project of 452 MNOK. As offshore

oil and gas production is expensive and a large industry in Norway, we can expect these results because of this industry consisting of rather few, very large and valuable companies with a big part of their value creation happening in projects. Between *Oil and Gas activities* and the second highest average project cost, *Other Services*, there is a difference of more than 300 MNOK. On the other side of the spectrum, *sales/transport/service and tourism* had an average of 20,32 MNOK in cost per project. Together with financial *services* (21,68 MNOK) they were quite a bit behind the other sectors. This can be a result of the nature of these firms or other factors within the Norwegian economy. Besides this, most of the respondents' groups in our survey used around 40-50 MNOK pr projects. Somewhat surprisingly *Fisheries/agriculture and Forestry* averaged 78,34 MNOK, this can be attributed to larger investments in for example fish farms which is a sizable business in Norway contributing with 146,6 billion NOK to GDP in 2022 (SSB, 2023b).

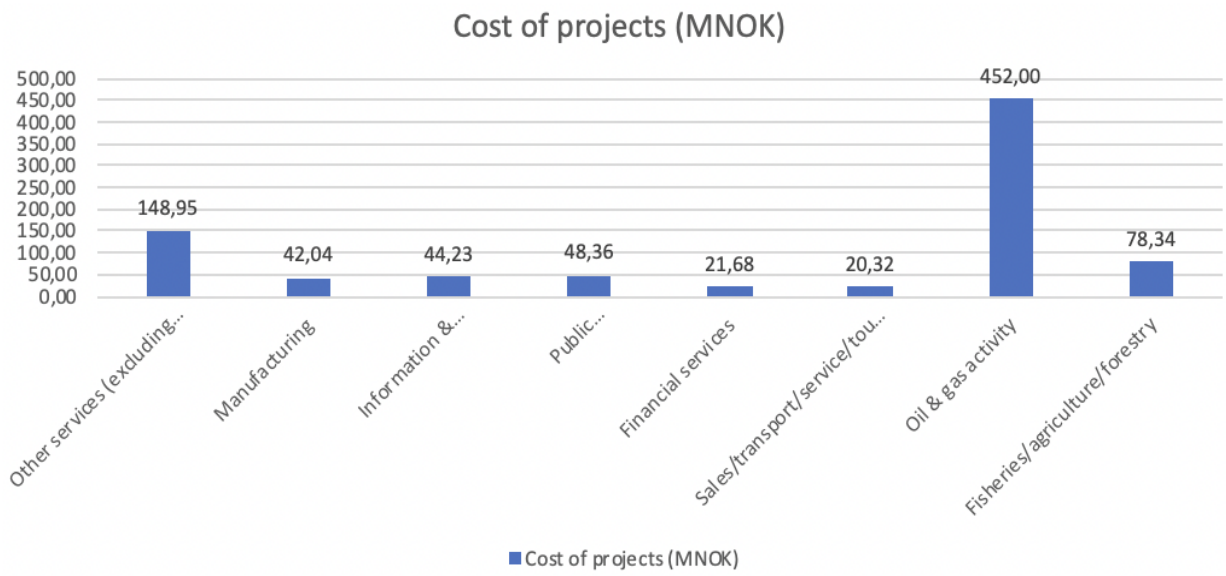

Figure 4.6: Cost of projects (MNOK) industry

Other services have quite a high average cost of projects with 148,95 MNOK. There can be several reasons for this, however one possible explanation is that this bundle group includes construction. Construction traditionally has an almost exclusively project-based value creation model. For this reason, one could argue that they should have their own sector in this study. However, to make it more comparable to the previous studies on this theme (Schoper et al., 2018; Skeibrok & Svensson, 2016) this was not done.

Looking at the percentage of revenue created in external projects it is rather small differences ranging from Financial Services with 28,6% to Manufacturing with 40,69%. The average was just over 35% with most companies being within a couple percent of this. From the figure below one can tell that the major differences seen in project cost are all but gone. However, Oil and gas were still among the highest with 39,6% and the second highest percentage.

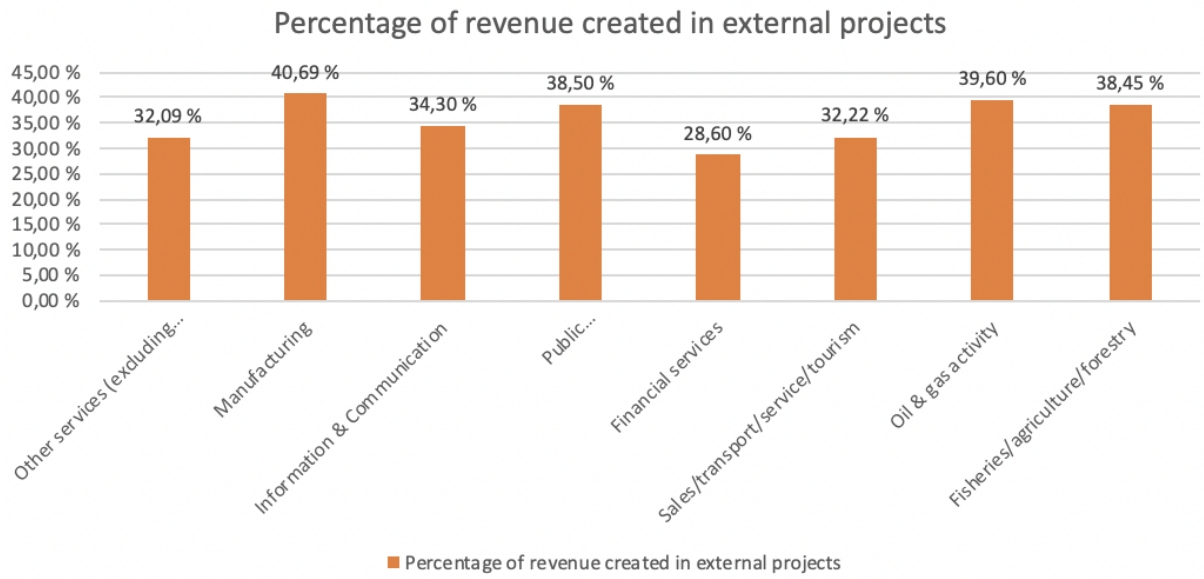

Figure 4.7: Percentage of revenue created in external projects.

4.1.5 Project types

In the following text the different project types used in each studied sector will be presented. As expected, there is a significant difference in the usage of project types between the eight sectors. Most notably we have the *Oil and Gas industry* that significantly differs from the rest in several aspects. Across all sectors external (commissioned) projects are most utilized and the sector with the highest score here is oil and gas activities with a score of 7 in external projects. Internal infrastructure projects are generally the least used project type in this study.

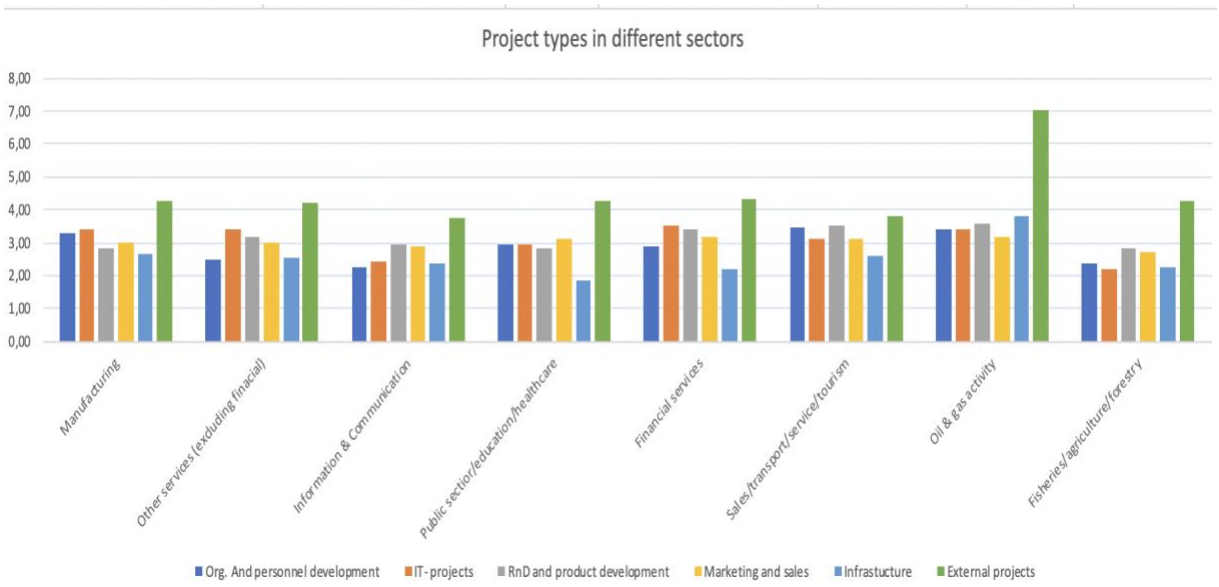

Figure 4.8: Project types in different sectors

The lowest average score (2,77) is reached by *Fisheries/agriculture/forestry,* with the lowest score in IT projects (2,18). The nature of these companies can explain this; however, they do follow the trend of a large amount of their projects (4,27) being external projects. In the data collected, *public sector/education/healthcare* has the overall lowest score, with 1,86, in internal infrastructure. On the complete other end of the spectrum, we have external projects for the *Oil and Gas sector* with a score of 7. Continuing with this sector, oil and gas differs from the rest in the internal infrastructure projects as this is their second most used project type where for the other sectors this is generally one of the least used project types. *Manufacturing, public sector/education/healthcare, financial services* and *sales/transport/service/tourism* all have internal infrastructure as their least used project type.

As oil and gas has a very unique position in the Norwegian economy and a particularly high degree of project work in relation to the other sectors included in this study (*Norsk næringsliv*, 2022), it seems logical that they differ from the rest in several aspects. One particularly notable finding was in Fisheries/agriculture/forestry where the internal differences between different companies was far larger than expected. Most of the respondents in this group had very low degree of use for most of the project types whereas two of them had far higher than average amounts of project work over all different types.

4.2 Findings

4.2.1 Projectification

As was discussed in chapter 2.2 the consensus in the literature is that the degree of projectification is increasing, but at a falling rate. In our findings (q8 a-c, see appendix C) we see the same trend. The companies were asked to state how much of their working hours was spent in project work as a percentage in 2017, 2022 and 2027. In 2017 this number was 34,58% increasing to 38,85% in 2022. The 2022 percentage is in line with the previously measured number from chapter 4.1.2 only differing by 0,1%. This shows an increase of 4,27% over five years, averaging an annual increase of 0,85%. In the figure below the estimated values are colored light blue, whereas the orange observations are reported by the respondents for 2017, 2022 and their future forecasts for 2027.

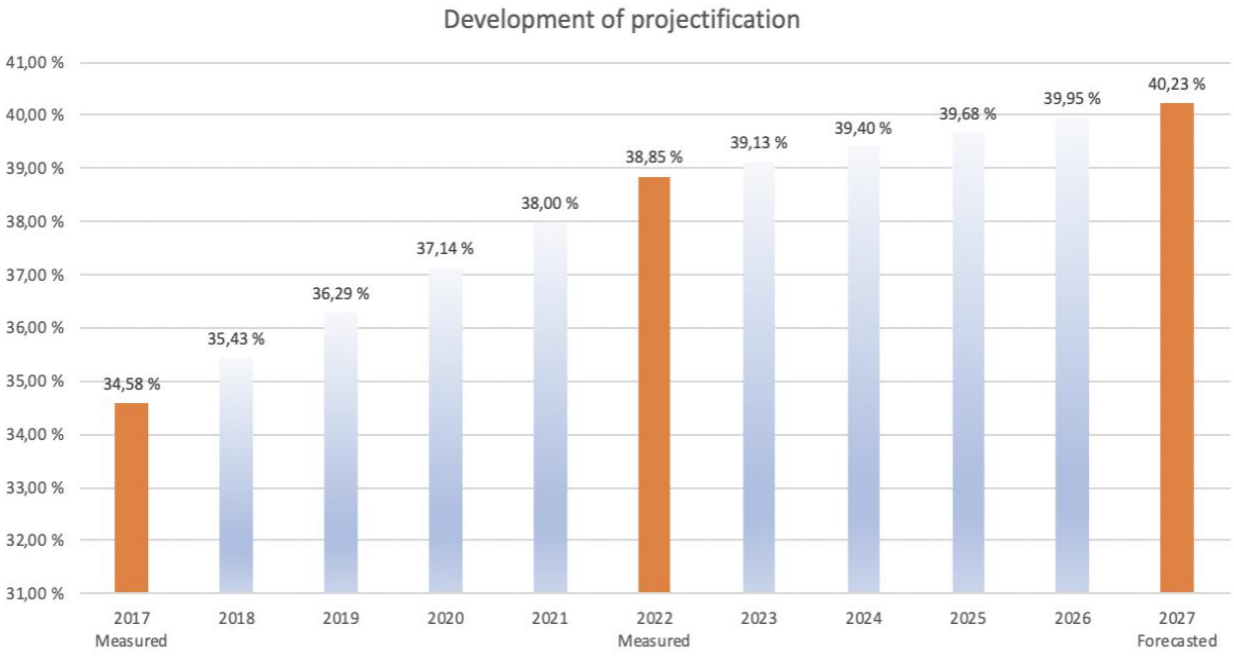

Figure 4.9: Development of projectification

Moving forwards, the expectation falling rate of increase in projectification seems to hold up. The average forecasted degree of projectification in 2027 was forecasted to be just over forty percent (40,23%) this gives a difference over five years of 1,38% or 0,28% per annum. The average increase over all ten years was 0,565% p.a. These findings can imply that the increase

of projectification in the Norwegian economy is slowing down and will continue to do so after 2027 if the current trend continues.

Most sectors followed this trend; however, the petroleum industry and information & communication sectors predict falling activities in projects. It is reasonable to believe that this to some extent can be explained by the number of respondents in these sectors being rather low and therefore the results are somewhat skewed as a result of this. In the table underneath one can see all the percentages for all sectors.

Sector	2017	2022	2027
Manufacturing	37,99 %	40,40 %	42,42 %
Other services (excluding financial)	30,61 %	35,50 %	37,08 %
Information & Communication	39,98 %	40,18 %	37,33 %
Public sector/education/healthcare	34,36 %	42,04 %	45,89 %
Financial services	20,20 %	25,70 %	29,70 %
Sales/transport/service/tourism	32,35 %	35,18 %	36,96 %
Oil & gas activity	54,80 %	84,80 %	69,80 %
Fisheries/agriculture/forestry	39,64 %	40,09 %	43,18 %

Table 4.2: Percentage of projectification per industry for 2017, 2022 and 2027

4.2.2 Organizational agility

In the questionnaire, question 20-22 measured the organizational agility of the sample group (see appendix C). The respondents were asked to rate their company on a series of statements on a scale of 1 to 7 (Likert scale, see chapter 3.1.3). Question 20 was designed to measure how agile the respondent's company was in relation to their market whereas question 21 and 22 measured how agile the companies were in relation to the top 3 firms in their sector. The difference between the last two questions (21 & 22) was the scope, q21 focused on the customer and external factors whereas q22 focused on internal factors. Question 20 had four statements for the respondents to answer whereas 21 and 22 had five each. From making a heatmap

(appendix G) of all the respondents one can see that companies in general see themselves as more agile towards the market than internally.

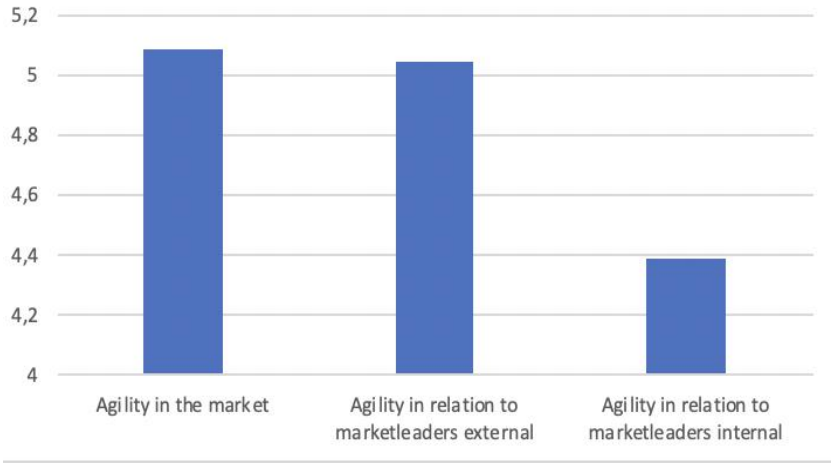

Figure 4.10: Agility in the market and agility in relation to markets leaders external and internal

As can be seen in the model the measured internal agility in relation to the top 3 companies in the market was significantly lower than externally. This can be a result of the market leaders being particularly agile companies or a result of the respondents not having the inside information of the other company and thus assume that others are more internally agile. Dividing the results for large (>99 employees) and small (<100 employees) we find that smaller companies see themselves as more agile in the external market than larger companies. However, the tables have turned for internal agility where large companies are more agile. A possible explanation for this can be that most of the top 3 firms are large companies and thus have more insight to the internal organizational agility of these firms. Again, the highest score was reached in market agility, without comparison to the market leaders.

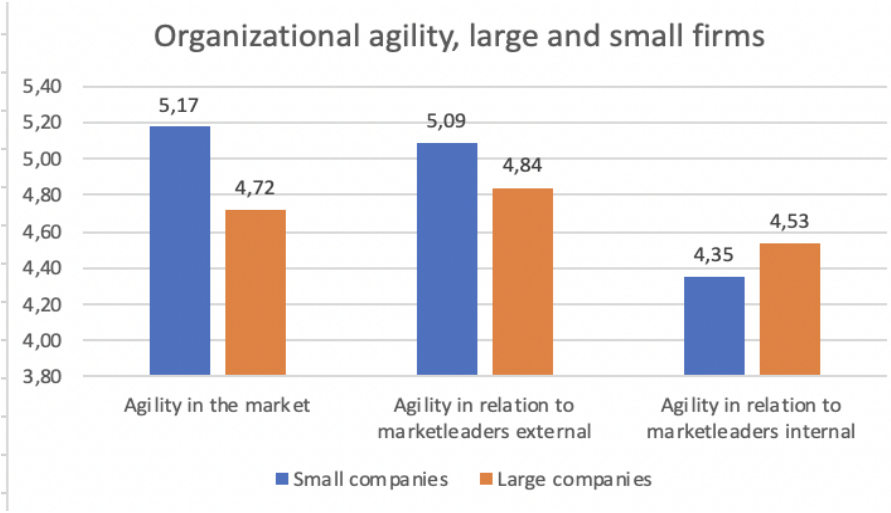

Fig 4.11: Organizational agility in small and large firms

4.2.3 Organizational agility and industry

When asked to rate the external organizational agility of the company on a scale from 1-7 most companies rated themselves rather highly at an average score of 5,6 in the market. There are some differences between the sectors where fisheries/agriculture/forestry had the highest average score of 5,45 and Oil and Gas activities had the lowest score with 4,8. The highest deviation from the average was found in Oil and Gas with a deviation of -0,56.

When taking a look at how the different sectors and their organizational agility in relation to the top 3 firms in their sector we can see that these differ rather much from each other. This is especially true for the external agility of the firms. However, most sectors follow the same trend of having the lowest score in Agility in comparison to market leaders internally, with the exception of Oil and Gas activities.

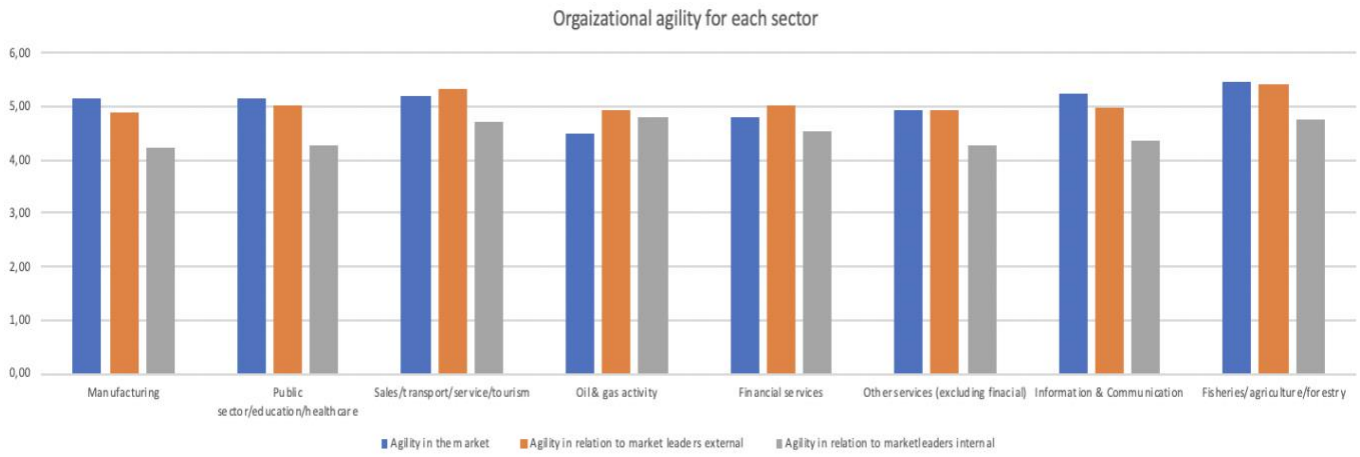

Figure 4.12: Organizational agility for each sector

4.3 Hypothesis supported/rejected

4.3.1 PLS-SEM results from the primary hypothesis

The PLS Algorithm's critical outcomes are depicted in Figure 4.13 providing insights into our primary hypothesis, H1, investigating the correlation between projectification (X) and organizational agility (Y). The figure showcases both the structural model's path coefficient and the R^2 value of the dependent variable (Y), indicating the degree of variance in Y accounted for by X.

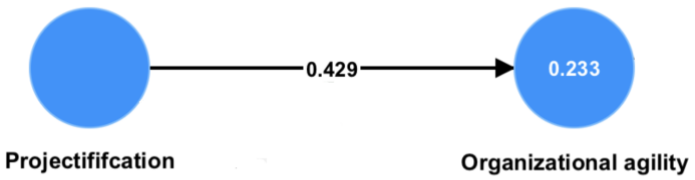

Figure 4.13: Path coefficient and R^2 value

Structural modeling is an important tool used to assess the relationship between different variables. One key output from this type of analysis is the path coefficient, which indicates the strength and direction of the association between variables. In this study, the path coefficient between projectification and organizational agility is 0,429. This result suggests a moderate

positive relationship between these two variables, indicating that an increase in projectification is associated with a proportional increase in organizational agility. However, it is important to note that the strength of this relationship is not particularly strong, which suggests that other factors may also play a role in determining organizational agility.

In addition to the path coefficient, the R^2 value provides an estimate of the extent to which the independent variable predicts the variance in the dependent variable. R^2 ranges from 0 to 1, with a higher value indicating greater predictive accuracy. The R^2 value in this study is 0.233, indicating that approximately 23.3% of the variance in organizational agility can be explained by projectification. While this suggests a statistically significant relationship between the variables, it also suggests that other factors not included in the model may also contribute to the variance in organizational agility.

Moreover, the evaluation of the model's quality relies on its capacity to anticipate the endogenous variable, which in this instance is organizational agility. To evaluate this criterion, it is necessary to take into account the cross-validated redundancy (Q^2). Q^2 is a measure of the internal model's predictive capability, and the closer the predicted values are to the actual values, the higher the Q^2, indicating greater predictive accuracy (Hair 2017). According to Hair et al. (2017), a Q^2value greater than 0 indicates the predictive relevance of the path model for the specific construct. Using the blindfolding technique in smartPLS, we determined the Q^2 value for the hypothesized relationship to be 0.097 which is > 0. This indicates that the path model has predictive relevance for the organizational agility construct.

To determine the statistical significance of the results, the t-value must be considered. From the bootstrapping procedure in SmartPLS, the t-value of the test is 4.706. The significance level determines the maximum allowed probability of making a type I error, which is the probability of rejecting the null hypothesis when it is actually true. With a sample size of 205, the degrees of freedom for the t-test would be 204, which affects the critical value used to determine statistical significance. Using a 0.05 significance level and 204 degrees of freedom, the critical value for a two-tailed t-test is approximately 1.97. This means that a t-value greater than 1.97 would be considered statistically significant at the 0.05 significance level with 204 degrees of freedom.

Given a t-value of 4.706, which is far greater than the critical value of 1.97, the difference between the sample means and the null hypothesis is highly significant. This result indicates that the probability of obtaining such a difference by chance alone is less than 0.05, or 5%. In other words, the probability of the observed difference being due to random variation is extremely low, providing strong evidence in favor of rejecting the null hypothesis and supporting the alternative hypothesis.

4.3.2 PLS-SEM results from the second hypothesis

To test if the company size had a moderating effect on the relationship between projectification and organizational agility a Partial Least Squares-Multi-Group Analysis (PLS-MGA) was conducted. This was used to compare the strength of the relationship between small and medium firms (less than 100 employees) and large firms (100 or more employees) and how this relationship varied based on the firm's organizational agility. The PLS-MGA analysis is particularly useful when testing if there is a significant moderating effect of a particular variable on the relationship between two other variables (Hair et al., 2017).

To conduct the PLS-MGA in SmartPLS, the sample was first divided into two groups: firms with less than 100 employees and firms with 100 or more employees. A bootstrap multiple group analysis was then selected for calculating the path coefficient and R^2 value for each group to determine the strength of the relationship between projectification and organizational agility. The path coefficient measures the strength and direction of the relationship between two variables, while the R^2 value indicates the proportion of variance in organizational agility explained by projectification. The result of the test is represented by table 4.3.

Size	Path Coefficient	R-square
< 100 employees	0.397	0.157
≥ 100 employees	0.477	0.228

Table 4.3: Path coefficient and R^2 value for the difference in firm size

The findings revealed that firm size does play a significant role in moderating the relationship between these variables. The analysis showed that the path coefficient and R^2 value for firms with less than 100 employees were 0.397 and 0.157, respectively. These results suggest that projectification had a weaker relationship with organizational agility for smaller firms, indicating that small and medium-sized firms might not benefit as much from implementing project management practices as compared to larger firms when it comes to achieving organizational agility.

However, for firms with 100 or more employees, the path coefficient and R^2 value was 0.477 and 0.228, respectively, which implies a stronger relationship between projectification and organizational agility for larger firms. This finding indicates that larger firms might benefit more from implementing temporary organizations in achieving organizational agility. This could be because larger firms have more resources and a larger organizational structure, making them more equipped to handle complex projects and respond to changes in the market.

The difference between the two groups was found to be statistically significant using bootstrap MGA, with a p-value of 0.259 (1-tailed) and 0.518 (2-tailed). This indicates that the impact of projectification on organizational agility varies depending on the size of the firm. Specifically, larger firms tend to benefit more from projectification in terms of increasing their organizational agility compared to smaller firms.

In terms of the hypothesis H2, which stated that there is a significant moderating relationship between the size of a firm and its organizational agility, the results of the PLS-MGA analysis provide support for this hypothesis. The findings indicate that firm size does indeed moderate the relationship between projectification and organizational agility.

4.3.3 Analysis of the control variable

To investigate if organizational agility could be influenced by any other factors than projectification, the control variable of industry type was examined to check for potential effects. Since industry is a binary variable, we divided the three groups into three dummy variables. We conducted the bootstrapping procedure in SmartPLS to investigate if industry type had any significant effect on organizational agility. The result of the analysis is depicted in table 4.4

Industry	Path coefficient	R-square	t-value	p-value
Primary	0.276	0.161	0.848	0.396
Secondary	-0.183	0.162	1.198	0.231
Tertiary	0.056	0.157	0.365	0.715

Table 4.4: Results from bootstrapping regarding the control variable

The results of the analysis show the path coefficients, R-square, p-values and t-values of the different industry groups' effects on organizational agility. Upon examination of the results, it was found that while there were effects of the industry groups on organizational agility, these effects were not significant at a significance level of 0.05. This implies that the control variable of industry type did not have a significant impact on organizational agility in the context of the study. This could be due to several reasons, such as the similarity of the industries in terms of organizational agility.

5 Discussion

The aim of this study was to determine whether the development of the degree of projectification has followed the theorized development and to unveil a potential relationship between the degree of projectification and organizational agility. From previous research there is an expectation that the degree of projectification will continue to rise, but at a slowing rate (Schoper et al., 2018). To measure this, well established scales used in both Germany, Iceland and Norway were used to generalize the findings more easily. The scales used to measure organizational agility are not as well established, but as far as current research goes, the most accurate way of measuring organizational agility to date. It allows there to be a spectrum of responses rather than a binary answer to the degree of organizational agility. From the responses gathered and using SmartPLS and analytic tools in Excel we were able to determine certain links and establish certain values found in our sample.

Two hypotheses were developed in this thesis, they are as follows:

H1: The extent of projectification has a positive significant impact on a firm's organizational agility.

H2: There is a significant moderating relationship between the size of a firm and its organizational agility.

The study that has been conducted is a descriptive study where both descriptive statistics of our sample and PLS-SEM analysis of the relationship between the dependent variable (projectification) and the independent variable (organizational agility). All the collected data from the questionnaire was primary data describing the entire Norwegian economy, in a similar manner to what has been done previously to be able to compare to previous findings and thus see the development. To our knowledge there has not been conducted research on the potential links between projectification and organizational agility before this study. These are our results:

5.1 Descriptive results

In the following the most important and noticeable descriptive results will be discussed. These will be mainly related to chapter 4.1 in this thesis.

In our findings an average, between all firms, established 38,95% of working hours were spent in projects. This shows an increase from earlier findings in Norway. Previously, this figure was 32,3% (Skeibrok & Svensson, 2016). In another study this figure was 32,6% in 2014 (Schoper et al., 2018). In this paper the research team hypothesized a rise of the projectification in Norway as well as in the other economies in the study. In relation to the previous findings ours are a little higher, however there can be many reasons for this. One example can be changes in oil price which in the Norwegian economy has a significant effect on the business life in Norway. In the numbers collected in this thesis the petroleum industry had the highest degree of all by a good margin, measuring 84,8% of working hours spent in projects. This is quite a bit higher than has been measured earlier, but in the Norwegian economy this has been the sector with the highest degree of TO usage over time (Schoper et al., 2018; Skeibrok & Svensson, 2016). This is mainly down to the nature of this industry as it depends on continuous exploration and new technology to retrieve and refine the raw material. For this study only 2% of the responding firms were in the petroleum industry which can have affected these numbers.

In the literature it is hypothesized that projectification in Norway would stagnate and flatten around 2020 (Schoper et al., 2018). Our findings, however, argue against this as it seems like the development in projectification will go further in Norway. Although the development will

drop off somewhat, but not as early as previously thought. It is worth mentioning that the previous study claiming this did have over 1 400 respondents where we had 205, which can explain the differing findings somewhat. Our findings do however support that there will at some point be a stagnation of projectification, only a couple years later than previously thought. The flattened growth rate described in Schoper et. al. (2018) of 1% is not far from the one found from 2022 to 2027 of 0.85%. This can imply that the stagnation of projectification in Norway is still to come in the next 5-10 years, and not between 2014 and 2020 as previously theorized.

5.2 Theoretical contribution

The present section aims to provide a comprehensive discussion on the outcomes of the hypothesized relationships that were explored in chapter 4.3 in the context of the study´s literature presented in chapter 2. The primary objective of this research was to investigate the impact of projectification on the organizational agility of companies. Given the scarcity of academic literature regarding this particular relationship and topic, the findings of this study hold significant importance as they contribute towards the advancement of further research about this field.

Upon examining the theoretical foundations for this study, it becomes evident that several factors play a crucial role in determining a firm's level of organizational agility. Crocitto and Youssef (2003) assert that leadership is a fundamental component in achieving organizational agility. A key aspect of effective leadership in this context is the ability to foster a culture that embraces continuous change and adaptation, which in turn reduces friction and enhances responsiveness and flexibility, ultimately resulting in a more agile organization. Additionally, the individuals who make up an organization are essential in achieving organizational agility. By promoting collaboration and reducing segmentation, workers are more motivated to create a productive environment while maintaining the values of the firm. We believe that these factors are also critical to the essence of project-based work, and therefore the aim of this thesis was to test and analyze this potential relationship.

The main hypothesis put forth in this research posits that the degree of projectification within a firm has a significant and positive impact on its organizational agility. Previous research has suggested that temporary organizations have a positive association with various organizational

factors that are crucial in today's business environment. In the study conducted by Thomas Spanuth, Sven Heidenreich, and Andreas Wald (2020), it was discovered that the connection between temporary organizations was positively linked to a firm's innovative capacity. In order to achieve innovative capacity, we believe that organizational agility is a key factor.

Therefore, this study can significantly reinforce the idea that projectification is connected to an organization's ability to renew itself, adapt to change quickly, and thrive in a rapidly changing, uncertain, and turbulent environment, as stated by Walter 2021. The importance of temporary organizations in today's business world cannot be overstated, as they provide firms with the flexibility and adaptability necessary to respond to changing market demands, technological advancements, and evolving customer needs. As such, it is essential to recognize and leverage the benefits of projectification, which can help firms enhance their organizational agility, increase innovation, and achieve long-term success in an ever-changing business landscape. And after being able to test the relationship between projectification and organizational agility, our findings support this belief and demonstrate that the primary hypothesis was indeed supported as we expected based on the given theory.

The second hypothesis examined whether the size of a firm plays a role in moderating the relationship between projectification and organizational agility. The study conducted by Skeibrok & Svensson (2016) showed that there were no moderating effects between projectification and a firm's strategic flexibility. However, this study reveals that there is a significant moderating effect of the size of a firm on the relationship between projectification and organizational agility in this research. The findings regarding which firms had the strongest relationship were thus unexpected. One could suggest that small and medium-sized firms are more agile than larger ones, owing to their ability to respond quickly to market demands and changes. However, our findings revealed that larger firms had a stronger positive moderating effect on the relationship between projectification and organizational agility than small firms. This could be attributed to the larger firms having greater resources and capabilities to adapt to changes in the external environment. However, it is essential to note that this study had a limited sample size, and that further research is necessary to validate these assertions.

5.3 Managerial implications

This study has unveiled several different implications for practitioners. Firstly, larger companies have more success in their project work and a more significant positive relationship between projectification and organizational agility. Therefore, the importance of leadership that allows for more project work is particularly important for larger firms. Moreover, companies should strive for a higher degree of projectification as it in most cases will lead to a more agile company. Secondly, companies must adapt their need for projects in accordance with the market and sector in which they operate to make the most agile version of the company possible.

5.4 Limitations

As with most research, this one has its limitations. Even when trying to mitigate these with incentives and established scales to ensure the most correct and representative data some limitations were found.

Potentially the largest limitation for this project was the choice of online questionnaires. This was chosen due to its ability to reach many potential respondents and its cheap price tag. However, the response rate of these questionnaires is low. As a result of this a lot of extra work had to be put into retrieving responses. After sending the form out to 12,5 thousand emails we were only left with 205 usable responses. This made the findings hard to generalize and some models are not usable for all sectors included in the study. Another weakness of this mode of data collection is that it does not facilitate the respondents asking for clarification to potential questions they might have.

Secondly, the respondents did have some freedom to estimate some answers and, in some questions, they were asked to estimate future values. This introduces some degree of human error being present. However, this was a rather limited part of the questionnaire and therefore should not have a significant influence on the findings.

In this study construction fell under *the other services* category, this can be a weakness as this industry generally has a particularly high degree of TO usage. Therefore, one can argue that they should have their own category as this can skew the result for the rest of the other services category. However, to ensure comparability to previous studies this was not done here.

5.5 Further research

This particular study explored the relationship between projectification and organizational agility, revealing that there is indeed a relationship between the two factors. The findings indicate that the effect is moderately positive, though not particularly strong. While it cannot be conclusively stated that having a larger proportion of project-based work will necessarily result in greater organizational agility, it is clear that projectification certainly may make the organization more agile.

However, it is important to note that the results of this study are not conclusive, and more research is needed to explore the relationship between projectification and organizational agility further. For instance, conducting case studies and using alternative methodologies, such as interviews, can help confirm this relationship. Moreover, it may be useful to explore different measurements of organizational agility that can provide more nuanced insights into this connection.

Furthermore, future research can explore how projectification impacts other aspects of organizational agility, such as responsiveness, resilience, and innovativeness, to name a few. This can help identify other variables that play a role in determining organizational agility and provide a more comprehensive understanding of the relationship between projectification and organizational agility from a broader perspective.

One of the limitations of the current study is its relatively low respondent rate and focus on the Norwegian economy only. Hence, future research can investigate whether the results of this study differ for larger groups of respondents or other economies. Comparing the findings from different economies and industries can help gain a better understanding of the relationship between projectification and organizational agility.

Another important aspect to consider is the moderating effects of different factors such as industry type, age of the company, different project types, the success rate of projects, and the firms' economic situation by their net income or turnover. These factors may play a significant role in determining the relationship between projectification and organizational agility, and hence warrant further investigation. Though data on these factors were collected, limitations in

time and capacity, as well as lack of existing literature measuring these effects in similar relationships, prevented a more extensive analysis of their potential effects.

Generally, while this study provides valuable insights into the relationship between projectification and organizational agility, further research is needed to fully understand this complex phenomenon. Future research should consider exploring alternative measurements, moderating effects, and investigating how projectification impacts different aspects of organizational agility. By doing so, we can gain a better understanding of how organizations can become more agile in today's dynamic business environment.

6 Conclusions

In the following part, the conclusion of the study paper will be provided. We will utilize both the descriptive data and PLS-SEM analysis to explicate the findings in the context of the literature provided in the former sections. The central aim of the study was to examine the prevalence of projectification within the Norwegian economy and its influence on organizational agility.

Despite the growing popularity of project-based structures in the economy and labor market, there is a lack of research examining the degree of projectification in economies. Thus, this study aimed to replicate the research conducted by Wald et al. (2015) and extend it by exploring the evolution of projectification in the Norwegian economy from 2014 to 2023 and projecting its growth until 2027. Our study yielded fascinating results, confirming the trend of increasing project-based work in recent years, and it is projected to continue to grow in the future, although at a slower pace. This finding is consistent with the existing literature that posits that the economy and labor markets are shifting away from traditional hierarchical structures towards project-based work. Therefore, this research contributes to the existing literature by providing empirical evidence of the degree of projectification in the Norwegian economy and its anticipated growth in the near future.

Furthermore, in today's fast-paced business environment, factors such as new technologies, increasing market demands, and environmental challenges have led to the continuous growth of new businesses. As a result, it has become crucial for businesses to be able to quickly adapt to changing environments to remain competitive. In this study, an organization's ability to

rapidly make such changes and adaptations is referred to as organizational agility. With the increasing degree of project-based work in today's business environment, we found it interesting to explore whether projectification influenced an organization's agility. Therefore, we also investigated the effect of projectification on organizational agility in the Norwegian economy. Our findings revealed a significant positive correlation between the two variables, indicating that organizations that adopt project-based structures have better conditions to be more agile and better equipped to respond to changes in the environment.

However, as stated, our study had some limitations due to small sample sizes, and further research is needed to confirm this conclusion. Nevertheless, our study is a crucial step towards understanding the evolution of projectification and the relationship between projectification and organizational agility in the Norwegian economy. It is also interesting to note that the findings of our study may be applicable to other countries and regions, although further research is needed to confirm this. Overall, our study highlights the importance of organizational agility in today's business environment and suggests that adopting project-based structures may be a useful strategy for improving an organization's agility. By doing so, organizations can become more agile and better equipped to respond to changes in the environment, which is crucial for long-term success.

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Appendices

Appendix A	Meldeskjema, SIKT
Appendix B	Spørreskjema, Norsk
Appendix C	Questionnaire, English
Appendix D	Discussion paper, Julie Wiese-Hansen
Appendix E	Discussion paper, Henrik Lyngtun Vik
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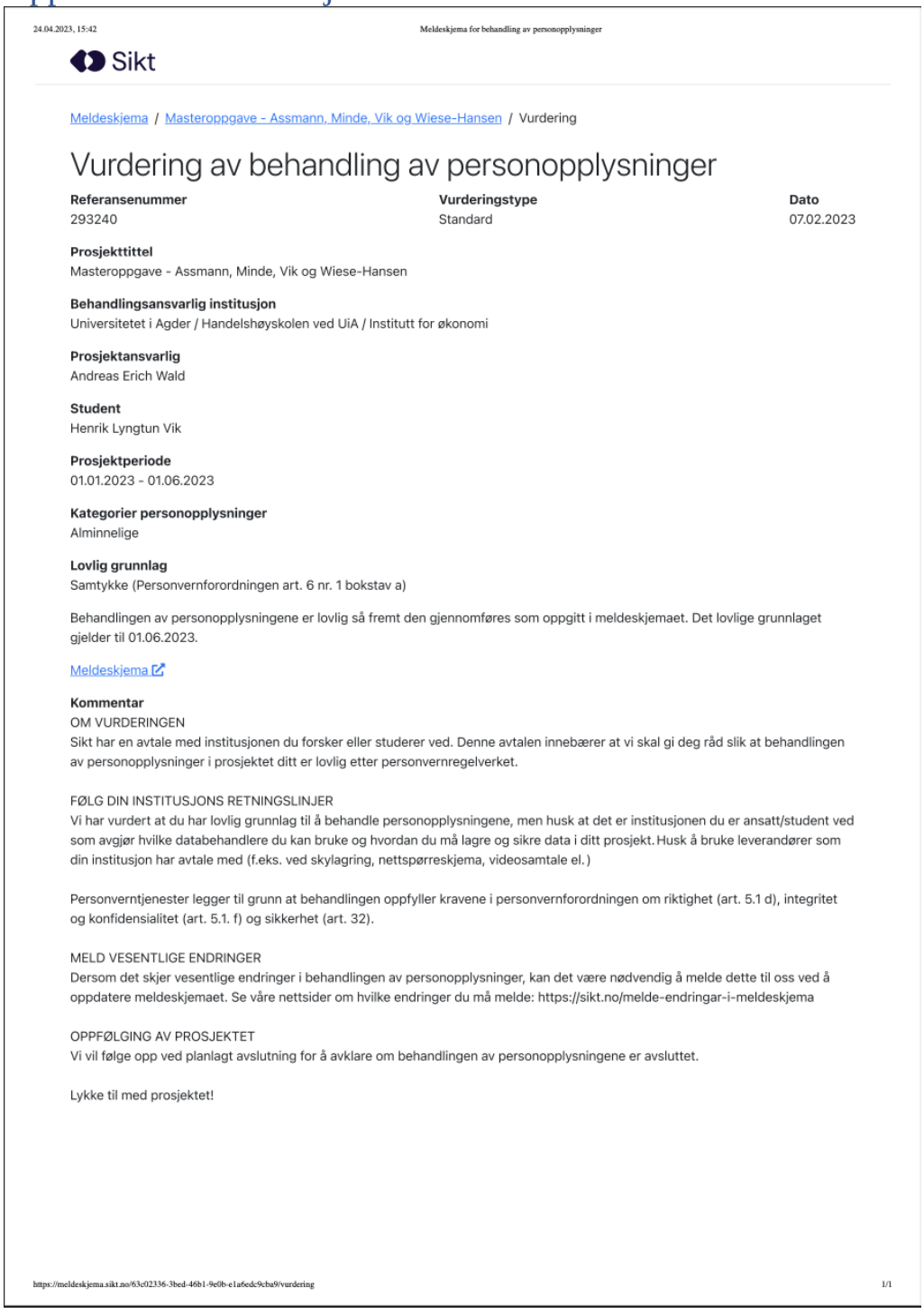
Appendix A: Meldeskjema



24.04.2023, 15:42 Meldeskjema for behandling av personopplysninger

Sikt

Meldeskjema / Masteroppgave - Assmann, Minde, Vik og Wiese-Hansen / Vurdering

Vurdering av behandling av personopplysninger

Referansenummer
293240

Vurderingstype
Standard

Dato
07.02.2023

Prosjekttittel
Masteroppgave - Assmann, Minde, Vik og Wiese-Hansen

Behandlingsansvarlig institusjon
Universitetet i Agder / Handelshøyskolen ved UiA / Institutt for økonomi

Prosjektansvarlig
Andreas Erich Wald

Student
Henrik Lyngtun Vik

Prosjektperiode
01.01.2023 - 01.06.2023

Kategorier personopplysninger
Alminnelige

Lovlig grunnlag
Samtykke (Personvernforordningen art. 6 nr. 1 bokstav a)

Behandlingen av personopplysningene er lovlig så fremt den gjennomføres som oppgitt i meldeskjemaet. Det lovlige grunnlaget gjelder til 01.06.2023.

Meldeskjema

Kommentar
OM VURDERINGEN
Sikt har en avtale med institusjonen du forsker eller studerer ved. Denne avtalen innebærer at vi skal gi deg råd slik at behandlingen av personopplysninger i prosjektet ditt er lovlig etter personvernregelverket.

FØLG DIN INSTITUSJONS RETNINGSLINJER
Vi har vurdert at du har lovlig grunnlag til å behandle personopplysningene, men husk at det er institusjonen du er ansatt/student ved som avgjør hvilke databehandlere du kan bruke og hvordan du må lagre og sikre data i ditt prosjekt. Husk å bruke leverandører som din institusjon har avtale med (f.eks. ved skylagring, nettspørreskjema, videosamtale el.)

Personverntjenester legger til grunn at behandlingen oppfyller kravene i personvernforordningen om riktighet (art. 5.1 d), integritet og konfidensialitet (art. 5.1. f) og sikkerhet (art. 32).

MELD VESENTLIGE ENDRINGER
Dersom det skjer vesentlige endringer i behandlingen av personopplysninger, kan det være nødvendig å melde dette til oss ved å oppdatere meldeskjemaet. Se våre nettsider om hvilke endringer du må melde: https://sikt.no/melde-endringar-i-meldeskjema

OPPFØLGING AV PROSJEKTET
Vi vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Lykke til med prosjektet!

https://meldeskjema.sikt.no/63c02336-3bed-46b1-9e0b-e1a6edc9cba9/vurdering 1/1

Appendix B: Spørreskjema, Norsk

Spørreskjema

Omfanget av prosjektbasert arbeid i den norske økonomien

Vår, 2023

Mål og omfang av studien

Andelen prosjektarbeid øker, men det finnes få eksakte mål på graden av prosjektarbeid, eller *prosjektifisering*.

I 2015 ble prosjektifisering i Norge målt for første gang, og viste at prosjektifisering var utbredt i alle sektorer i norsk økonomi.

Ettersom det har skjedd store endringer i markedsforholdene de siste årene, gjentar vi undersøkelsen for å se hvordan prosjektifisering i Norge har endret seg.

Denne undersøkelsen blir gjort av en gruppe forskere fra Handelshøyskolen ved Universitetet i Agder.

Hensikten med undersøkelsen er å måle utbredelsen av prosjektarbeid på selskaps-, industri-, og totalt i hele det norske arbeidslivet.

I tillegg til dette, har vi noen spørsmål knyttet til organisasjonsfleksibilitet og arbeidsfleksibilitet.

Varighet

Vi kommer til å guide deg gjennom vårt spørreskjema (intervju), som vil vare ca. 10-15 minutter.

Konfidensialitet

Vi behandler alle person- og selskapsdata som privat og strengt konfidensielt. Dataene vil kun bli brukt til vitenskapelige formål. Dine svar vil ikke kunne knyttes til deg, og det vil heller ikke være mulig å identifisere hvilken bedrift eller offentlig etat du arbeider for.

Kontakt

Vårt forskningsteam svarer gjerne på eventuelle spørsmål du måtte ha.

Vitenskapelig leder:	Prof. Andreas Wald	andreas.wald@uia.no
Intervjuer:	Hans Jørgen Kyte Assmann	hjassm17@uia.no
Intervjuer:	Henrik Lyngtun Vik	henriklv@uia.no

Intervjuer:	Henrik Minde	henrm18@uia.no
Intervjuer:	Julie Wiese Hansen	juliew18@uia.no

Takk for at du ønsker å delta!

A. Generelt: Industri / Firmastørrelse

1. Med tanke på din bedrifts eller organisasjons hovedaktiviteter, hvilken industri tilhører den?

q Produksjon

q Finansielle tjenester/ Forsikring

q Offentlig sektor/ Utdanning/ Helse

q Andre tjenester (eksklusive finansielle)

q Salg/ Transport/ Service/ Turisme

q Informasjon/ Kommunikasjon

q Olje/ Gass aktiviteter

q Fiskeri/ Skogdrift/ Jordbruk

2. Hvor mange personer er ansatte i din bedrift? *(Vennligst oppgi antall fulle årsverk, hvis mulig)*

Antall ansatte, mål i årsverk

B. Prosjektarbeid

Spørsmålene som følger bygger på følgende definisjon av prosjekt. Et prosjekt kjennetegnes av de følgende forhold:

- Et **spesifikt mål** har blitt definert for prosjektet.
- Prosjektet **er tidsbegrenset** (start og slutt).
- Prosjektet krever **spesifikke ressurser** (finansielle, personell ressurser o.l.)
- En **selvstendig prosessorganisasjon**
- Prosjektet arbeider med **unike oppgaver**.
- Prosjektet har en **varighet på minimum fire uker**.
- Prosjektet har **minst tre medarbeidere**.

[B.1 Prosjektlandskapet]

Følgende spørsmål refererer til prosjektlandskapet i din bedrift. Vi ber deg om å anslå prosjekt- landskapet for **hele din bedrift.** Vær vennlig å ikke oppgi prosjektlandskapet knyttet til individuelle avdelinger/organisatoriske enheter (dvs. produksjon, FoU), men prøv å estimere aktivitetene knyttet til **hele** organisasjonsnivået. Dette kan særlig inkludere deler av organisasjonen med mye prosjektarbeid, men også deler av organisasjonen der kun noen få prosjekter blir gjennomført.

3. I hvilken utstrekning bruker din bedrift de følgende **prosjekttypene**?

	Ikke i bruk						*Brukes svært regelmessig*
Interne prosjekter innen organisasjons- og personalutvikling	q	q	q	q	q	q	q
Interne IT-prosjekter	q	q	q	q	q	q	q
Interne prosjekter innen forskning og utvikling (FoU) og produktutvikling	q	q	q	q	q	q	q
Interne prosjekter innen markedsføring og salg	q	q	q	q	q	q	q
Interne infrastrukturprosjekter	q	q	q	q	q	q	q
Eksterne prosjekter	q	q	q	q	q	q	q

Om andre, vennligst utdyp: _____

4. Hva er gjennomsnittlig **omfang** av prosjekter i din bedrift (antall ansatte og prosjektbudsjett)?

	I gjennomsnitt hvor mange personer i din bedrift/ organisasjon deltar til enhver tid i prosjektarbeid?
	I gjennomsnitt millioner NOK i prosjektbudsjett

5. Gjennomsnittlig varighet for prosjekter?

	Måneder

6. Har din bedrift/ organisasjon en sentralisert prosjektorganisering?

q Ja q Nei

7. Hvis «Ja», har dere et prosjektkontor?

q Ja q Nei

[B.2 Andelen av prosjektarbeid]

8. Hva er andelen av prosjektarbeid (i %) i forhold til antall arbeidstimer i din **bedrift totalt**, dvs. hvor mye av den totale arbeidstiden brukes på prosjekter? Hva var denne andelen for 5 år siden (2017) og hva vil det være om 5 år fra nå? (2027)? (Vennligst gi et estimat!)

2022	For fem år siden (2017)	Fremtidig utvikling (2027)

Andelen av prosjektarbeid (i %) I forhold til totalt antall arbeidstimer til alle ansatte I hele din bedrift.

9. Hva var andelen av bedriftens **inntekter generert fra salg** av oppdragsprosjekter til eksterne kunder (2022)?

Andel av inntekter i forhold til inntekter skapt av (eksterne) oppdragsprosjekter (i %)

[B.3 Prosjektintensitet]

10. De følgende påstandene viser til intensiteten av prosjektarbeid. I hvilken utstrekning er påstandene dekkende for din bedrift/organisasjon?

	Svært enig						*Svært uenig*
Vår bedrift/ organisasjon kjennetegnes av en stor grad midlertidige arbeidsformer.	q	q	q	q	q	q	q
Mesteparten av aktivitetene i vår bedrift blir utført som prosjekt	q	q	q	q	q	q	q
Mesteparten av arbeidet i vår bedrift blir investert i prosjekt	q	q	q	q	q	q	q

Mye av arbeidet som utføres i vår bedrift kan tilskrives midlertidig organisering	q q q q q q q
Midlertidig arbeid har generelt en høy grad av viktighet i vår bedrift	q q q q q q q

[B.4 Prosjektsuksess]

11. Hvor mange av prosjektene er vellykkede med hensyn til…

	Ingen						*Alle*
… tidsbruk	q	q	q	q	q	q	q
… kostnad/ budsjett	q	q	q	q	q	q	q
… kvalitet	q	q	q	q	q	q	q
… fornøyde interessenter	q	q	q	q	q	q	q
… totalt sett	q	q	q	q	q	q	q

[B.5 Ytelse]

12. I forhold til gjennomsnittet i din sektor, hvordan presterte din bedrift/ organisasjon de tre siste årene med tanke på de følgende indikatorene?

	Mye verre						*Mye bedre*
Kundetilfredshet/ renommé	q	q	q	q	q	q	q
Driftsresultat	q	q	q	q	q	q	q
Overskudd	q	q	q	q	q	q	q

Markedsandel	q q q q q q q
Utvikling av nye produkter og/eller tjenester	q q q q q q q
Utgifter til forskning og utvikling	q q q q q q q

C. Generelle innstillinger/ personalinformasjon

13. For hvilken avdeling/ enhet jobber du?

q Styret

q Controlling/ Økonomiavdeling

q Prosjektkontoret

q Annet: _____

14. Hva er din posisjon i din bedrift?

q Styremedlem

q Avdelingsleder

q Teamleder

q Ansatt i en avdeling

q Administrativ støtte for styret

q Annet: _____

15. Hvor mange år er selskapet?

År

16. Vennligst oppgi de følgende selskapstallene for året 2022:

	Millioner NOK total omsetning (For eksempel: Svar "2,64" betyr 2.640.000 NOK)
	Millioner NOK netto inntekt for året (For eksempel: Svar "2,64" betyr 2.640.000 NOK)

D. Arbeidsfleksibilitet

Følgende spørsmål vil dreie seg om arbeidsfleksibilitet i organisasjonen. Begrepet «HR» relaterer til «*Human Resources*» eller «menneskelige ressurser».

17. I vår virksomhet, …

	Liten grad						*Stor grad*
… hjelper HR-fleksibiliteten (e.g., skiftarbeidere, deltidsansatte) oss med å tilpasse oss til endret etterspørsel	q	q	q	q	q	q	q
… blir HR-systemet tilpasset for å holde tritt med skiftende konkurransemiljøer (e.g., identifiserer rekrutteringsbehov)	q	q	q	q	q	q	q
… er HR-innstillinger utformet slik at de raskt tilpasser seg endrede forretningsforhold	q	q	q	q	q	q	q
… endres HR-praksisen ofte for å tilpasse seg endrede arbeidskrav (e.g., færre ansatte enkelte perioder i året)	q	q	q	q	q	q	q
… gjør endringer innenfor HR at vi kan forbli konkurransedyktige i markedet	q	q	q	q	q	q	q
… tilpasses endringer innenfor HR seg hensiktsmessig med endrede markedsforhold	q	q	q	q	q	q	q
… er HR system og praksis totalt sett fleksibel	q	q	q	q	q	q	q

18. I vår organisasjon …

	Liten grad						*Stor grad*
… deltar ansatte i telearbeidsprogrammer (jobbe hjemmefra)	q	q	q	q	q	q	q
… er det flere virtuelle arbeidere (på PC) enn tradisjonelle arbeidere (på «fabrikkgulvet»)	q	q	q	q	q	q	q

… er hjemmekontor tilgjengelig og brukt av ansatte	q q q q q q q
… bruker ansatte fjernarbeid grunnet formelle/ uformelle årsaker (e.g., arbeid/ familiære årsaker)	q q q q q q q
… har ansatte alternativer for arbeid andre steder enn kontoret	q q q q q q q
… kan ansatte jobbe utenfor arbeidsplassen minst to dager per uke	q q q q q q q
… kan ansatte jobbe utenfor arbeidsplassen minst tre dager per uke	q q q q q q q

19. I vår organisasjon …

	Liten grad						*Stor grad*
… bestemmer ansatte når de vil komme og dra fra jobb	q	q	q	q	q	q	q
… rapporterer ansatte at de har fleksible arbeidstider	q	q	q	q	q	q	q
… kan ansatte utøve noe valgfrihet over tidspunktet for når arbeidet utføres	q	q	q	q	q	q	q
… kan ansatte utøve mer valg rundt fleksitid, 1 år etter introduksjonen av fleksitid	q	q	q	q	q	q	q
… kan ansatte utøve mer valg rundt fleksitid, 2 år etter introduksjonen av fleksitid	q	q	q	q	q	q	q
… kan ansatte velge mellom arbeidsordninger (kjernetid, varierende timer, faste, osv.)	q	q	q	q	q	q	q
… er det flere brukere av fleksible arbeidsforhold enn ikke-brukere av fleksible arbeidsforhold	q	q	q	q	q	q	q

… benytter ansatte hjemmekontor av jobbrelaterte årsaker	q q q q q q q
… benytter ansatte hjemmekontor av personlige og/eller familiære årsaker (e.g., hente barn, tannlegetime)	q q q q q q q
… kan ansatte selv bestemme når de vil bruke hjemmekontor	q q q q q q q

E. Organisatorisk fleksibilitet

20. Følgende spørsmål vil dreie seg om **organisatorisk fleksibilitet**.

	Liten grad	*Stor grad*
Vi oppfyller kravene til rask respons, spesialbestillinger fra kunder når slik etterspørsel oppstår	q q q q q q q	
Vi kan opp- eller nedskalere vår produksjon eller våre tjenester for å tilpasse oss endringer i markedet	q q q q q q q	
Vi kan raskt ta riktige beslutninger for å tilpasse oss endringer i markedet	q q q q q q q	
Vi ser etter måter vi kan omstrukturere eller tilpasse vårt firma for å bedre dekke markedsbehovene	q q q q q q q	

21. Hvor suksessfull er selskapet sammenlignet med topp 3 ledende organisasjoner i samme industri til å …

	Ikke suksessfull	*Veldig suksessfull*
… identifisere kundenes behov	q q q q q q q	
… skreddersy produkter/tjenester til kundenes behov	q q q q q q q	
… identifisere kundegrupper firmaet ikke tjener	q q q q q q q	

… tilpasse seg kunders tjenestebehov	q q q q q q q
… gi informasjon til kundene	q q q q q q q

22. Hvor suksessfull er selskapet sammenlignet med topp 3 ledende organisasjoner i samme industri til å …

	Ikke suksessfull						*Veldig suksessfull*
… integrere interne prosesser	q	q	q	q	q	q	q
… integrere på tvers av organisasjonens verdikjede	q	q	q	q	q	q	q
… forbedre fleksibiliteten i forretningsprosesser	q	q	q	q	q	q	q
… øke hastigheten på produktutvikling	q	q	q	q	q	q	q
… øke hastigheten på logistikkaktiviteter	q	q	q	q	q	q	q

Appendix C: Questionnaire, English

Questionnaire

Measuring Projectification in the Norwegian Economy

Spring, 2023

Aim and scope of the study

The share of project work is increasing, but there are only few exact measures of the degree of projectification in the economy.

In 2015, the degree of projectification was measured for the first time in Norway, showing high prevalence of project work in all sectors in the Norwegian economy.

After significant changes in the business environment over the last couple of years, we are now replicating the study to see how the projectification in Norway has changed.

This survey is being carried out by a group of researchers from the School of Business & Law at University of Agder.

The aim is to measure the degree of projectification at the company level, the industry level and in the entire economy.

In addition to this, we will ask some questions related to work flexibility and organizational agility.

Duration

We will guide you through our questionnaire (interview) which will last approx. 10-15 minutes.

Confidentiality

We treat all personal and company data as private and strictly confidential. The data will only be used for scientific purposes. Your answers will not be linked to you, nor will it be possible to identify which company or public agency you work for.

Contact

Our research team is happy to answer any questions you might have.

Scientific supervisor:	Prof. Andreas Wald	andreas.wald@uia.no
Interviewer:	Hans Jørgen Kyte Assmann	hjassm17@uia.no
Interviewer:	Henrik Lyngtun Vik	henriklv@uia.no
Interviewer:	Henrik Minde	henrm18@uia.no
Interviewer:	Julie Wiese Hansen	juliew18@uia.no

Thank you for participating!

A. General: Industry / Firm size

1. When looking at your companies‘ main activities, to which industry do you belong?

q Manufacturing

q Financial Services & Insurance

q Public Sector / Education / Health Care

q Other Services (excluding financial)

q Retail / Transport / Hospitality / Tourism

q Information / Communication

q Oil and Gas activity

q Fishery / Forestry / Agriculture

2. How many people are employed by your firm? *(Please indicate full-time equivalent (FTE) if possible)*

Number of employees (FTE)

B. Project work

All of our following questions depart from the following definition of a project. A project is an undertaking largely characterized by the uniqueness of the conditions in their entirety, i.e.,

- A **specific target** has been defined for the project.
- The project **is limited in terms of time** (start and end).
- The project requires **specific resources** (e. g. financial, staff, …).
- An **independent process organization** exists, which is defined as different from the standard organization in the company.
- The projects work on **non-routine tasks**.
- The project has a **minimum duration of four weeks**.
- The project has at least **three participants**.

[B.1 Project landscape]

The following questions refer to the project-landscape in your company. We kindly ask you to estimate the project-landscape for your **entire company**. Please **do not** indicate the project landscape for individual departments/organizational units (e.g., manufacturing, R&D) but try to estimate the activities on the level of the **entire organization**. In particular, this may include parts of the organization with **a lot** of project work, but also parts or the organization where **only few** projects are carried out.

3. To which extent does your company use the following **project types**?

	Not used at all						*Used Very frequently*
Internal: Organizational- / HR-projects	q	q	q	q	q	q	q
Internal: IT-Projects	q	q	q	q	q	q	q
Internal: R&D projects / new product development projects	q	q	q	q	q	q	q

Internal: Marketing projects / sales projects	q q q q q q q
Internal: Infrastructure projects	q q q q q q q
External: Commissioned projects	q q q q q q q

Other, please specify: _____

4. What is the average **volume** of projects in your company (number of employees and project budget)?

	Average number of employees working in a project
	Million NOK project budget (average project budget)

5. Average duration of projects?

	Months

6. Does your company have a centralized project organization?

q Yes q No

7. If yes, do you have a **Project Management Office (PMO)**?

q Yes q No

[B.2 SHARE OF PROJECT WORK]

8. What is the share of project work (in %) to total working hours in your **entire company**, i.e., how much of the total working time is spend in projects? What was this share five years ago (2017) and how will it be in five years from now (2027)? (Please give an estimate!)

2022	Five years ago, i.e., (2017)	Future development (2027)

Share of project work (in %) to total working hours of all employees in the entire company.

9. What was the proportion of company **revenues** generated by (external) commissioned projects (2022)?

Share of revenues to revenues generated by (external) commissioned projects (in %)

[B.3 PROJECT INTENSITY]

10. The following statements refer to **the intensity of project work** in your company. To what extent do the following questions apply for the overall organization?

	Strongly disagree						*Strongly agree*
Our firm is characterized by a high level of temporariness	q	q	q	q	q	q	q
Most of the activities in our firm are conducted within projects	q	q	q	q	q	q	q
Most of the work in our firm is invested into projects	q	q	q	q	q	q	q
Much of the work done in our firm is attributable to temporary organizations (TOs)	q	q	q	q	q	q	q
Temporary work has in general a high importance in our firm	q	q	q	q	q	q	q

[B.4 PROJECT SUCCESS]

11. How many projects create, in general, adequate results in terms of:

	none	*all*

…Time	q q q q q q q
…Costs / Budget	q q q q q q q
…Quality	q q q q q q q
…Stakeholder satisfaction	q q q q q q q
… In general	q q q q q q q

[B.5 PERFORMANCE]

12. When compared to the industry average, how did your company perform over the last three years regarding the following indicators?

	Much worse						*Much better*
Customer satisfaction / reputation	q	q	q	q	q	q	q
EBIT (earnings before interest, taxes, depreciation, and amortization)	q	q	q	q	q	q	q
Return (profit) on sales	q	q	q	q	q	q	q
Market share	q	q	q	q	q	q	q
Development of new products and/or services	q	q	q	q	q	q	q
Expenses for R&D	q	q	q	q	q	q	q

C. General settings/personal information

13. For which **department/unit** do you work?

q Management board q Controlling

q Project Management Office (PMO) q Other: _____

14. What is your **position** in the company?

q Member of the management board q Head of department

q Team leader q Employee of a department

q Assistant to the board q Other: _____

15. How **old** is your company?

	Years

16. Please indicate the following company data for the year 2022:

	Million NOK total turnover (Answer "2,64" equals to 2.640.000 NOK)
	Million NOK net income for the year (Answer 2,64 equals to 2.640.000 NOK)

D. Work flexibility

The following questions will be about work flexibility in your company.

17. In our organization, **human resource (HR)** …

	Low degree						*High degree*
… flexibility (e.g., shift workers, part-time workers) helps us to adjust to changing demands	q	q	q	q	q	q	q

… system is modified to keep pace with the changing competitive environments (e.g., identifies recruitment needs)	q q q q q q q
… settings are designed so that they quickly adjust to changes in business conditions	q q q q q q q
… practice is frequently changed to cope with changing work conditions (e.g., less employees in certain periods of the year)	q q q q q q q
… changes enable us to remain competitive in the market	q q q q q q q
… changes adjust meaningfully to changed business scenarios	q q q q q q q
… system and practice are in general flexible	q q q q q q q

18. In our organization …

	Low degree *High degree*
… employees participate in teleworking programs (work from home)	q q q q q q q
… there are more virtual workers (with PC's) than traditional workers (on the "factory floor")	q q q q q q q
… home working is available and used by employees	q q q q q q q
… employees use remote working due to formal/ informal reasons, e.g., work/ family conditions	q q q q q q q
… employees have options for working remotely	q q q q q q q
… employees are able to work away from the workplace at least two days per week	q q q q q q q

… employees are able to work away from the workplace at least three days per week	q q q q q q q

19. In our organization, **employees** …

	Low degree						*High degree*
… decide when to arrive and leave work	q	q	q	q	q	q	q
… report having flexible work hours	q	q	q	q	q	q	q
… are able to exercise some choice over time when work is carried out	q	q	q	q	q	q	q
… are able to exercise more choice over flexi-time, 1 year after introduction of flexi-time	q	q	q	q	q	q	q
… are able to exercise more choice over flexi-time, 2 years after introduction of flexi-time	q	q	q	q	q	q	q
… are able to choose between working arrangements (core + varying hours, fixed, etc.)	q	q	q	q	q	q	q
… consist of more users of flexible working conditions than non-users of flexible working conditions	q	q	q	q	q	q	q
… use home office for job related reasons	q	q	q	q	q	q	q
… use home office for personal and/ or family reasons (e.g., child pickup, dentist appointment)	q	q	q	q	q	q	q
… can decide for themselves when they want to use home office	q	q	q	q	q	q	q

E. Organizational flexibility

20. The following questions will be about **organizational flexibility** in your company.

	Low degree						*High degree*
We fulfill demands for rapid responses, special requests of our customers when such demand arise	q	q	q	q	q	q	q
We can quickly scale up or scale down our production/service levels to support fluctuations in demand form the market	q	q	q	q	q	q	q
We are quick to make appropriate decisions in the face of market changes	q	q	q	q	q	q	q
We look for ways to reinvent/reengineer our firm to better serve the market	q	q	q	q	q	q	q

21. How successful is your firm compared to the top 3 firms in the industry …

	Not successful						*Very successful*
… identifying customers needs	q	q	q	q	q	q	q
… tailoring products/ services to customers needs	q	q	q	q	q	q	q
… identifying customer groups not served by the firm	q	q	q	q	q	q	q
… responding to customer service requests	q	q	q	q	q	q	q
… providing information to customers	q	q	q	q	q	q	q

22. How successful is your firm compared to the top 3 firms in the industry …

	Not successful						*Very successful*

… integrating internal processes	q q q q q q q
… integrating across its supply chain	q q q q q q q
… enhancing business process flexibility	q q q q q q q
… increasing the speed of product development	q q q q q q q
… increasing the speed of logistics activities	q q q q q q q

Appendix D: Discussion paper, Julie Wiese Hansen

Discussion paper

Master´s Programme in Business Administration

INTERNATIONAL

Julie Wiese-Hansen

Word count: 2080

As part of my final master's thesis in collaboration with the University of Agder, this discussion paper is developed to contribute to the continuous improvement of the master's program and UIA's AACSB accreditation for the school of business and law. The study program for economics and administration has consistently emphasized the importance of an "international" perspective on learning outcomes. In this context, my discussion paper will examine my master's thesis in relation to this concept, providing an introduction to the thesis and exploring its various aspects in light of the international perspective.

In the context of AACSB accreditation, my understanding of "international" encompasses the goals and values of AACSB accreditation. These goals include fostering global connections among business schools to promote positive social change worldwide (*Global Business Education Network | AACSB*, n.d.). When we share common learning objectives with other

universities globally, and possess a shared understanding of international business, it leads to the formation of a community of global cooperation. Drawing on our five years of studies with particular focus on international trails and markets, my master's partner and I have developed an assignment based on a former study of projectification in Germany. Our study builds upon the work of our supervisor who conducted a study in Germany in 2015 and adapts it to the Norwegian economy. Specifically, we investigate the prevalence of project work in Norwegian companies and explore how it impacts organizational agility. In essence, our study is a republication of our supervisor's research, customized to address the specific context of the Norwegian economy.

The main topic of our master thesis was "Exploring the impact of projectification on organizational agility: A qualitative study of Norwegian firms" and in this research we wanted to investigate the development of the amount of project-work in the Norwegian economy as well as if projectification had an effect on organizational agility. The rapid pace of technological advancements and evolving market demands has resulted in an increase in the number of project work undertaken by companies worldwide (Andersen, 2018). As a result, many organizations have undergone significant changes in their structures and processes to adapt to the demands of the market. We believed that in Norway, like in many other countries, the trend of projectification had been on the rise, and it is important to examine the implications of this trend on organizational agility. The research questions for the thesis was thus;

"To what extent does projectification affect a firm's organizational agility?"

And

"Does the size of a company have a moderating effect on the relationship between projectification and organizational agility?"

Organizational agility is the ability of an organization to respond to changes quickly and effectively. It is a critical factor in a company's success, as it allows them to adapt to market changes and seize opportunities faster than their competitors (Walter, 2021) . The importance of agility has increased in recent years, and it is crucial for companies to be able to adapt to the constantly changing business environment. Projectification, on the other hand, refers to the increased use of project-based work in organizations. Working in projects is becoming

increasingly common as companies strive to remain competitive in the market (Jacobsson & Jałocha, 2021). Projects provide an efficient way of organizing work, and they enable companies to focus on specific goals and objectives (Cleland, 2004). We thus believed that the degree of projectification had a positive relationship on organizational agility, and the following hypothesis were considered and tested;

H1: The extent of projectification has a positive significant impact on a firm's organizational agility

H0: There is no significant relationship between a firm´s extent of projectification and organizational agility

H2: There is a positive moderating relationship between the size of a firm and its organizational agility.

Therefore, the aim of this study was to examine the relationship between projectification and organizational agility in Norwegian companies. By examining the degree of projectification and its impact on organizational agility, this study seeks to provide insights into the implications of projectification on organizational agility in Norwegian companies.

In order to achieve this, we utilized an online questionnaire to collect data from various organizations across all sectors in Norway. The items in our questionnaire were carefully crafted based on recurring factors related to organizational agility, ensuring that we captured relevant data. After distributing the questionnaire to several organizations, we received a total of 205 responses which formed the basis of our analysis. The results of our data collection indicated that projectification was a growing trend in the Norwegian economy compared to the study of Wald et. Al (2015), with companies expecting an increase in project-based work in the nearest future. To analyze the data we collected, we utilized PLS-SEM in SmartPLS.

Our analysis revealed that projectification had a significant positive effect on organizational agility. This finding was important as it suggested that working in projects could have a positive impact on a firm's agility, allowing it to adapt to changing circumstances and remain competitive in a rapidly evolving market. Furthermore, our research revealed that company

size acted as a moderator in the relationship between projectification and organizational agility. Specifically, we found that larger firms experienced greater benefits to agility from project-based work than smaller firms. Our research contributes to the growing body of knowledge on projectification and organizational agility by identifying critical success factors that influence the level of agility in projects. Our findings offer new insights into the benefits of project-based work for organizational agility and underscore the importance of considering company size in developing organizational agility from projectifiaction.

The topic of this research can be related to international trends in various ways. In recent years, there has been a growing trend towards projectification in organizations worldwide. This trend has been driven by various international forces such as globalization, increased competition, and the need for innovation. These forces have necessitated the adoption of project-based structures to work to enhance organizational efficiency, improve project outcomes, and promote innovation (Cleland, 2004). One of the key international trends that relate to this thesis is the increasing demand for organizational agility. As the business environment becomes more complex and dynamic, companies need to be more agile to remain competitive (Žitkienė & Deksnys, 2018). This has led to a growing emphasis on agility in many countries, including Norway. By examining how projectification affects organizational agility, this study can provide insights into how companies can improve their agility by adapting project-based structures.

In addition, the trend of globalization has also had a significant impact on projectification in organizations internationally. Globalization has created a more competitive business environment, where companies are under pressure to innovate and deliver products and services faster and more efficiently (Andersen, 2018). Project-based approaches are seen as a way to achieve these objectives, as they enable companies to undertake complex projects across borders and collaborate with partners and stakeholders in different countries. By examining the relationship between projectification and organizational agility, this study can provide insights into how organizations can adapt to the challenges and opportunities of globalization while maintaining their agility. For example, if the trend of globalization continues, organizations may be more inclined to invest in project-based work to remain competitive in the global marketplace. The finding that projectification positively affects organizational agility may reinforce this trend and encourage organizations to continue to invest in project-based work.

Another international trend that is relevant to this thesis is the growing focus on sustainability and corporate social responsibility (CSR) in organizations worldwide. This growing trend has been driven by the need to balance economic growth with social and environmental concerns (Cerne & Jansson, 2019). In countries like Norway, there has been a strong emphasis on sustainability and CSR (Vormedal & Ruud, 2009), and project-based approaches may emerged as a promising tool to promote these values. Project-based work can enable organizations to undertake initiatives that have positive social and environmental impacts. By examining the impact of projectification on organizational agility, this study can provide valuable insights into how organizations can balance their focus on sustainability and CSR with their need for efficiency and flexibility. This balance is crucial, as organizations should be able to adapt to changing market conditions and shifting consumer preferences. By focusing on projects that use resources more efficiently and minimize waste, organizations can reduce their environmental impact while also reducing costs. Additionally, project-based work may increase social and environmental responsibility by focusing on initiatives that benefit the community and promote sustainable practices. The findings of this thesis could encourage organizations to invest in sustainability-oriented project-based work to enhance their agility and promote sustainability. By incorporating sustainability and CSR into their project-based approach, organizations can achieve their goals while also making a positive impact on society and the environment.

Technology is another international trend that can impact the way actors react to these findings. The impact of technology on business practices cannot be understated, particularly in the context of project-based environments (Cleland, 2004). With the rapid advancement of technology, businesses are now able to undertake increasingly complex projects, collaborate with teams across borders, and streamline communication and coordination processes (Andersen, 2018). Indeed, the use of technology has most likely been a crucial factor in the development of projectification, as it can enabled companies to take on more ambitious and challenging projects. Our research has uncovered some interesting findings on project-based industries in Norway. Specifically, we have found that the oil and gas, fisheries/agriculture/forestry, public sector/education/healthcare, and information & communication industries are among the most heavily invested in projects. This is likely due to the fact that these industries are highly dependent on technology to drive innovation and improve efficiency.

Finally, economic trends and forces can also have an impact on the relationship between projectification and organizational agility. One such factor could be economic uncertainty, which can cause companies to prioritize short-term results over long-term agility. It is therefore crucial to understand how project-based approaches can contribute to overall strategic goals while balancing short-term and long-term objectives (Andersen, 2018). By examining the impact of projectification on organizational agility, this study can provide valuable insights into how organizations can optimize their approach to project-based work. In particular, it can help businesses understand the trade-offs between short-term results and long-term agility and identify strategies for achieving both. Moreover, economic trends and forces can shape how organizations respond to these findings. For instance, if the economic environment becomes more challenging, companies may become even more focused on short-term results and less willing to invest in long-term agility. However, the finding that projectification positively affects organizational agility may encourage organizations to prioritize project-based work that can provide both short-term results and long-term agility.

To summarize, the trend towards the increased use of projects in organizations is a global phenomenon that has driven the development of projectification and its relationship to other critical organizational factors, such as organizational agility. Our master thesis offers a fresh perspective on projectification by measuring its degree of development in the Norwegian economy while also exploring the factors that affect organizational agility. The process of writing this thesis has been an engaging and enlightening experience that has provided valuable insights into the complex interplay between projectification and organizational agility. Throughout our research, we have encountered many challenges that have required us to develop new analytical skills and techniques. We have learned to analyze data using partial least squares structural equation modeling (PLS-SEM), a method that has enabled us to identify the most significant factors affecting organizational agility in project-based environments. By utilizing this innovative approach, we have been able to offer a more nuanced understanding of the complex relationship between projectification and organizational agility.

Beyond the practical skills we have gained, writing this discussion paper has also prompted me to reflect on the broader implications of our findings for global themes such as globalization, innovation, responsibility, and technology. As organizations increasingly adopt project-based approaches to work, the development of projectification is likely to have far-reaching consequences for businesses, economies, and society as a whole. Understanding the

complexities of projectification and its impact on organizational agility is essential for organizations looking to thrive in an increasingly competitive and rapidly changing business landscape. In conclusion, our master thesis has provided us with a wealth of knowledge and experience, and we are excited to share our findings with the wider academic and business communities. By offering new insights into the relationship between projectification and organizational agility, we hope to contribute to a more comprehensive understanding of this critical area of research.

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Appendix E: Discussion paper, Henrik Lyngtun Vik

Discussion paper

Master´s Program in Business Administration

INTERNATIONAL

Henrik Lyngtun Vik

Word count: 1967

This discussion paper is related to the master thesis "Exploring the impact of projectification on organizational agility; A study of Norwegian firms". The origins from this thesis is from a study conducted in Germany by Wald et. al (2015) in the study "*Towards a Measurement of "Projectification": A Study on the Share of Project Work in the German Economy".* Here the research team found a method of measuring the amount of project work used in organizations in Germany, which was measured to slightly over 1/3 (34,5%). This study has later been replicated in different countries such as Iceland, Norway and Germany (Skeibrok & Svensson, 2016; Spanuth et al., 2020) to establish a picture of how the development of *projectification* is and to se if there are differences between countries. The replications have in addition to measuring the degree of projectification measured a relationship between the degree of projectification and another factor such as *strategic flexibility*. For this thesis we looked at the relationship between projectification and organizational agility.

In this thesis we replicate the aforementioned studies to look at the development in the Norwegian market. To find the necessary data we utilized a questionnaire based on the ones used previously to get consistent data. These were adapted to suit our research question and to reflect the change in the markets. Our data was collected and fed into an analysis program (SmartPLS) and further analyzed from there to find the relationships between *temporary organizations* (TO) usage and organizational agility. This was then put into system with the theoretical foundation that was presented in part II of the thesis on TOs, projectification and organizational agility.

This thesis was structured into four parts. Part I included the background and research gap the project covered in addition to give the paper its structure to increase the readability for the reader. Part II laid the theoretical framework of the thesis namely going through what TO and project work meant for this paper and giving the rest of the work a theoretical foundation to build on. Part III Methodology described how the data was collected and why it was done in this manner. In addition to this the variables were operationalized and given a meaning. The ethical implications and challenges with data collection were also discussed at length in this chapter. In this part the analysis method *partial least squared structural equation modelling* (PLS-SEM) was given a solid introduction and the data was explained. For the last part the results of the research were given.

Projectification as a phenomenon has been on the rise in the last few years. It relates to the increasing trend of organizing work in the form of project and using temporary organizations to create more adaptability and thus a stronger organization. The project is potentially the most used form of temporary organizations. Internationally, projectification had affected how different companies can adapt to trends seen in an international market gives a heightened possibility to take advantage of emerging markets outside their "home-market". This can lead to a number of advantages in for the firms who are able to efficiently implement it. One of the most prevalent advantages is the ability for projects to include people from different areas to a team thus giving the TO more multinational knowledge that in turn results in better adaptability in the different markets. The ripple effect of this can also be a considerable advantage for the firm.

International projects, however, aren't all advantageous. The tendency for them is to become hard to manage as they must take differences in culture, market and ither factors into consideration. A typical difficulty in international TO can be communicative differences leading to a slow flow of information and misunderstandings that can result in lack of coordination and poor results of the TO. Addressing these issues in a timely manner, can be crucial for the organization. This can be done by implementing tools that support effective communication and trust building. Technology can also be used to leverage the changes needed to make the TOs as efficient as possible.

Organizational agility refers to an organization or firms' ability to adapt to changes swiftly and in an efficient manner. This is often achieved by proactively looking for new challenges,

opportunities and threats in the market. I many cases this can be seen as a competitive advantage for the companies that are able to adapt to the fast-paced business environment as market conditions change quickly and can make it challenging for a company to stay afloat if they do not adapt to changes. The demands on a company trying to implement this are high and will in many cases demand a culture change from within the organization.

From the aforementioned factors there is reason to believe that there is a relationship between projectification, and organizational agility and this link has been noted more in recent years. However, to our knowledge there have not been any studies exploring this. As stated in the opening of this paper several related links have been explored such as flexibility. These studies have in recent years been conducted in several countries like Germany, Norway, and Iceland. All these studies have shown that a significant part of business life is conducted in projects, however, most of these countries are rather similar and all western economies of varying size. Therefore, it is not unreasonable to assume that they will have rather similar degrees of projectification.

The European economies are generally tight knit through collaboration and trade deals such as the EEA (European Economic Area) and other smaller agreements. This should lead to many of these countries having many similarities. As the unit of analysis in this study is Norwegian firms the international viewpoint is not a main point of this thesis. However, as Norway is a rather small and particularly wealthy country many of the included respondents can be assumed to operate either in or with foreign areas. The petroleum sector in Norway is a large contributor to Norwegian wealth and is fully dependent on cooperating with many foreign countries as most of the oil is exported either for use or for refining abroad. Doing this study in Norway also helps comparing the Norwegian economy to those of the other countries in which the degree of projectification has been done.

For the thesis we had two research questions form which we extrapolated our hypothesizes:

“To what extent does projectification affect a firm's organizational agility?”

“Is there a moderating relationship between the firm-and industry size and its organizational agility?”

The way technology has evolved in the last half century the world has been brought significantly closer together. As a result of this the competition between companies is now between not only the competitors in the same geographical area as you, but all major companies in the same or related sector as you operate in. An example of this can be two of the biggest competitors in the shoe and athletic textile industry, Nike, and Adidas. They have the majority of sales in their industry but are from two widely different parts of the world, namely the USA and Germany. This describes the new type of global economy well. This does also mean that innovation comes from the entire world at the same time. A firm's ability to adapt to new and innovative solutions swiftly and in an economical manner is increasingly important.

This is where an organization's agility comes into the picture, if there can be established a positive link between projectification and organizational agility this would imply that a company can seek to increase their amount of project work in order to faster adapt to international trends and therefore strengthen their position in the market. Further, it can help understand the reason for the hypothesized increased degree of projectification by Schoper et. Al (2018). After analyzing the data in SmartPLS we found that there is a significant, but moderate relationship between organizational agility and the degree of projectification. With a path coefficient of 0,429 and an R^2 of 0,233, we can say that there is a relationship between the two variables.

From this we can say that 23,3% of the increase in organizational agility came from increased projectification. As this is almost 1/4 of all movement it seems the effect relationship is rather strong, but that there are some other factors that also have their effect on the agility of a company.

On an international scale the Norwegian economy is rather small, much due to the size of the sparsely populated country. Therefore, it is relevant to see if the size of the different firms and industries had any effect on the findings. Here there are some opposing arguments for the form size relationship with organizational agility, on the one hand a large company will in most cases have more resources to heighten their agility, but on the other a smaller company might be easier to adapt as there are fewer people involved and less things to change.

In this context, the RQ of whether there is a moderating relationship between firm-or industry size becomes increasingly important. A larger company can make for a less agile one as larger organizations tend to be slower and make it harder to swiftly turn around. For a large industry there might be more innovation as there are more contenders and more money going around. In addition to this the size of contractors to the main industry will introduce more dimensions to the competition as the amount of cooperation, contracts, coopetition and other factors increase exponentially.

From our PLS-MGA analysis we found that there is a moderating relationship from firm size on organizational agility by projectification. We divided the companies between small and large companies, with less than 100 employees and over 100 employees respectively.

Size	Path Coefficient	R2 Value
< 100 employees	0.378	0.237
≥ 100 employees	0.516	0.390

From the table above one can see that the relationship is stronger for larger companies, indicating that larger companies have better agility than smaller ones do.

When analyzing if the industry had a moderating effect, we found that the relationship between the dependent and independent variables varies across different industry groups. The Public sector/education/healthcare and Information & Information and Communication groups showed the strongest positive relationship, while the Manufacturing, Sales/transport/service/tourism, and Other services (excluding financial) groups showed a moderate positive relationship. The Fisheries/agriculture/forestry group had a negative relationship between the variables.

Industry	Path Coefficient	R2 Value
Manufacturing	0.475	0.226
Financial services	-	-
Public sector/ education/ healthcare	0.704	0.495
Other services (excluding financial)	0.492	0.242
Sales/ Transport/ Service/ Tourism	0.319	0.102
Information & Communication	0.564	0.319
Oil & Gas activity	-	-
Fisheries/ agriculture/ forestry	-0.515	0.265

From the table one can see that two sectors were not analyzed. This is due to these sectors did not have sufficiently many respondents to satisfy the 10 times rule and were therefore excluded.

Conclusively, this research project is important in an international setting. As the world is brought closer together adaptability in increasingly important. We attempt to find and describe the relationship between projectification and organizational agility. Using advanced methodology such as PLS-SEM and PLS-MGA analysis to find the most correct values for the different relationships in the thesis should ensure the correctness and generalizability of the findings. Taking into consideration the difficulties in creating an agile company in a world where innovation is a continuous process. Collecting more data on the relationships mentioned in this discussion paper will be needed to further the knowledge on the topic on an international basis. However, the tight knit nature of EEA and other international trade deals makes it reasonable to assume that many other countries have a lot of similarities with the findings in this thesis. After researching the degree of projectification in Norway, Germany, and Iceland, collecting comparable data from the other major economies in the world such as northern America and Asia would be interesting as it would give an international view on the topic that could be interesting for both the scientific communities and the organizations themselves.

References:

Skeibrok, J., & Svensson, F. L. (2016). *The degree of projectification in organizations, and its impact on strategic flexibility:*

Spanuth, T., Heidenreich, S., & Wald, A. (2020). Temporary organisations in the creation of dynamic capabilities: Effects of temporariness on innovative capacity and strategic flexibility. *Industry and Innovation*, *27*(10), 1186–1208. https://doi.org/10.1080/13662716.2020.1842723

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Appendix F: Indicator constructs and their respective items

Construct	Indicator	Items
Projectficication	*8.1*	*What is the share of project work (in %) to total working hours in your **entire company**, i.e., how much of the total working time is spend in projects?*
	11.1	How many projects create, in general, adequate results in terms of: Time
	11.2	How many projects create, in general, adequate results in terms of: Costs/ Budget
	11.3	How many projects create, in general, adequate results in terms of: Quality
	11.4	How many projects create, in general, adequate results in terms of: Stakeholders satisfaction
	11.5	How many projects create, in general, adequate results in terms of: In general
Size	2.1	How many people are employed by your firm? *(Please indicate full-time equivalent (FTE) if possible)*
Industry	1.1	When looking at your companies‘ main activities, to which industry do you belong?

Organizational agility	*20.1*	*We fulfill demands for rapid responses, special requests of our customers when such demand arise*
	20.2	*We can quickly scale up or scale down our production/service levels to support fluctuations in demand from the market*
	20.3	*We are quickly to make appropriate decisions in the face of market changes*
	20.4	*We look for ways to reinvent/reengineer our firm to better serve the market*
	21.1	How successful is the firm compared to the top 3 firms in the industry in identifying customers´ needs?
	21.2	How successful is the firm compared to the top 3 firms in the industry in identifying customer groups not served by the firm?
	21.3	How successful is the firm compared to the top 3 firms in the industry in responding to customer service requests?
	21.4	How successful is the firm compared to the top 3 firms in the industry in increasing the speed of product development?
	21.5	How successful is the firm compared to the top 3 firms in the industry in increasing the speed of logistics activities?
	22.1	

	22.2	How successful is the firm compared to the top 3 firms in the industry in integrating internal processes?
	22.3	How successful is the firm compared to the top 3 firms in the industry in integrating across its supply chain?
	22.4	How successful is the firm compared to the top 3 firms in the industry in enhancing business process flexibility?
	22.5	How successful is the firm compared to the top 3 firms in the industry in increasing the speed of product development?
		How successful is the firm compared to the top 3 firms in the industry in increasing the speed of logistics activities?

- Items written in gray cursive were excluded due to low outer loadings

Appendix G: Heatmap, project success

Question 20-22 from left to right

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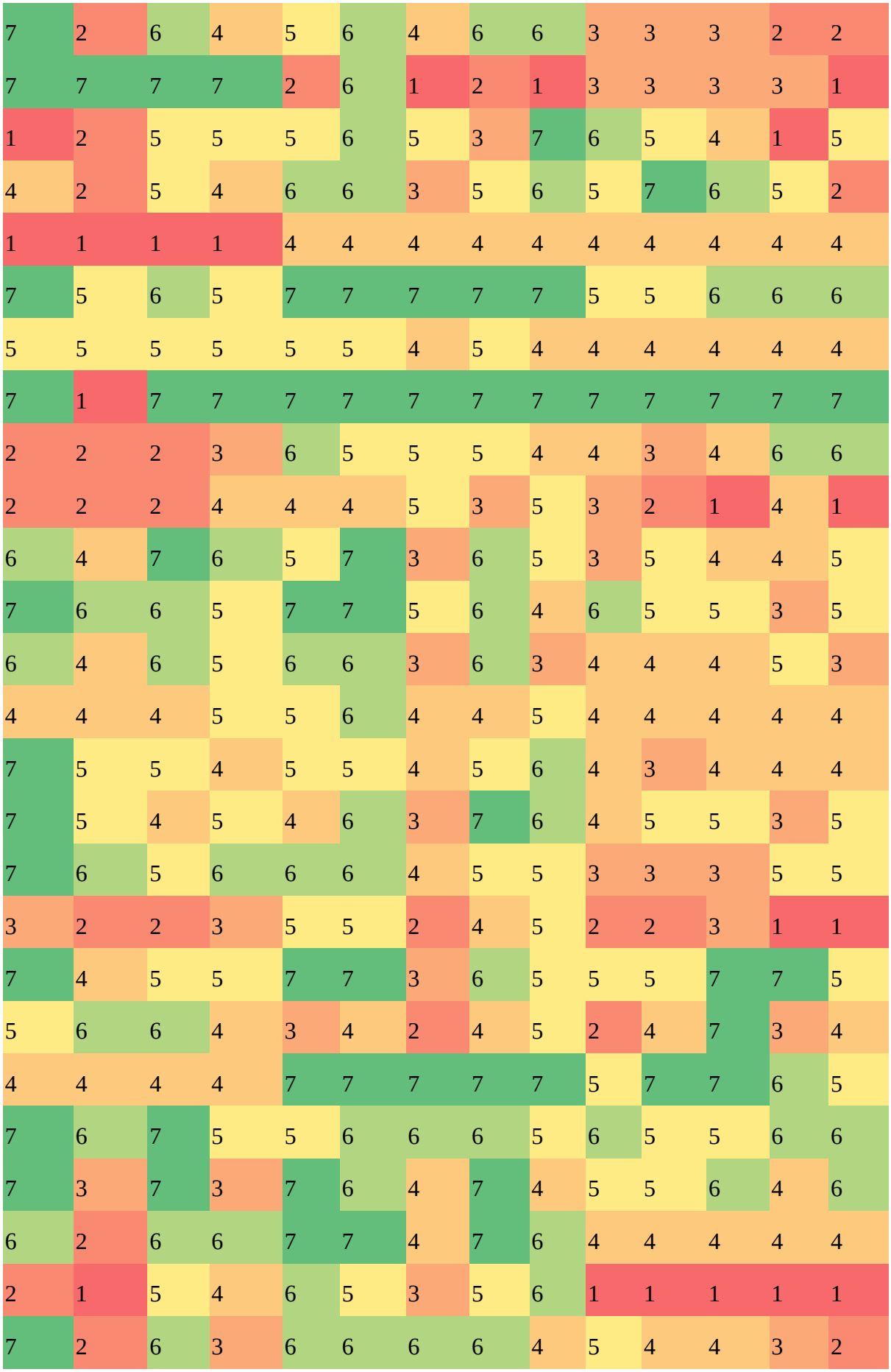
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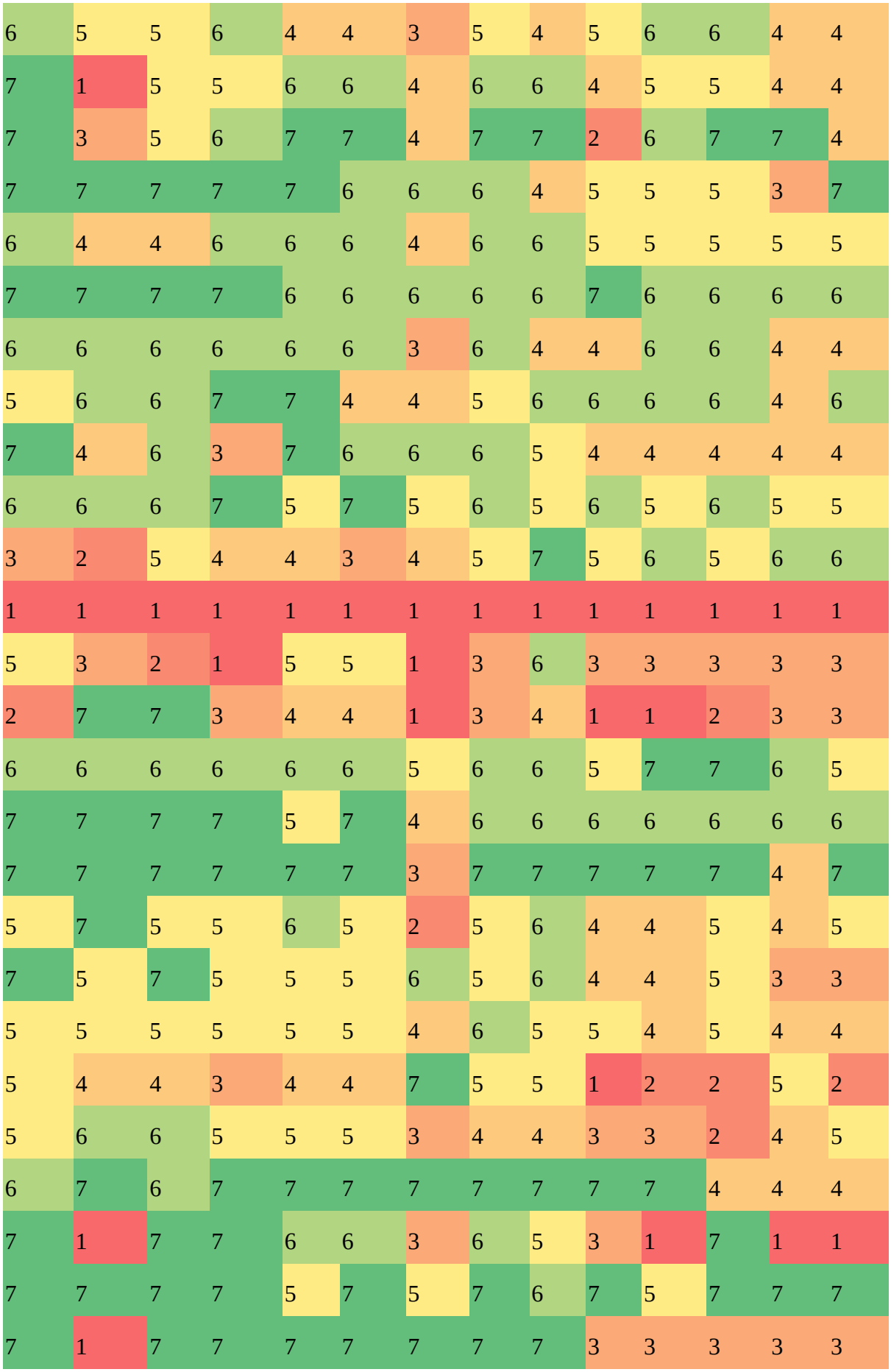
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