The degree of projectification and its impact on work flexibility

An exploratory study of Norwegian businesses

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Preface and Acknowledgements

Writing the thesis has been an interesting and educational journey, being able to dig deep into one specific field and task. We have had the opportunity to use a lot of the knowledge accumulated over the years, especially within the strategy and organization fields. Additionally, we have been able to work on our analytical skills and learning how to use analytical tools.

Our interest for projectification as a subject was sparked in the autumn of 2022. The thesis itself became a project and we had to use digital tools to plan the ways forward, as Henrik was attending an internship in the US whereas Hans Jørgen was in Norway. Thus, the second concept regarding work flexibility was mentioned as an interesting notion to investigate in relation to the former mentioned concept. We quickly found literature stating that projects are flexible in their form. However, we were not able to find empirical evidence showing this as a fact. As a result, we therefore wanted to examine a part of the overall flexibility concept that has not been investigated yet. Indeed, the conclusions show that our results have yielded significant contributions that have increased knowledge on the concepts regarding projectification and work flexibility.

We would like to thank our supervisor, Professor Andreas Erich Wald, for guiding us through the master thesis writing and method. The professor provided us with relevant literature and previous studies on the subject, as well as providing us with the survey questions and questionnaire regarding projectification. He also helped us throughout the writing process with discussions and helpful insights that have strengthened our thesis. We also thank the participating businesses for their contribution to our thesis. Lastly, we thank the University of Agder and co-students for five years at the master´s programme.

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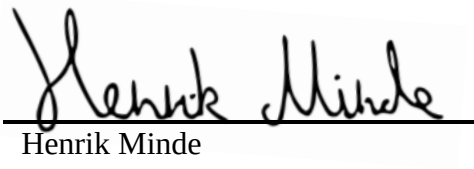

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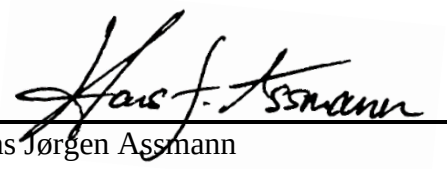

Hans Jørgen Assmann

Abstract

This study explores the relationship between projectification and its possible impact on work flexibility for Norwegian businesses. As firms are increasingly focused on project-based work, flexibility has become more popular among employers as well as employees. On one hand, projects contribute to flexibility in organizing expertise that solve complex problems. On the other hand, firms offer flexible work arrangements to ensure employee retention, loyalty and effectiveness. The exploratory study collects primary data from Norwegian organizations. We firstly establish the degree of projectification in Norwegian businesses for 2017, 2022, and 2027. Thereafter, we investigate and find that projectification has a statistically positive significant effect with work flexibility. Furthermore, results indicate that industry has a significant control effect on the relationship between the two variables. Our study contributes to research by strengthening the relevance of flexible work arrangements as a valuable subject among business professionals working in project-based contexts.

Key words: Projectification, project intensity, work flexibility, flexible work arrangements, HR flexibility, human resource practices

Sammendrag

Denne studien utforsker sammenhengen mellom prosjektifisering og dens mulige innvirkning på arbeidsfleksibilitet for norske bedrifter. Ettersom bedrifter i økende grad fokuserer på prosjektbasert arbeid, har fleksibilitet blitt mer populær blant arbeidsgivere så vel som ansatte. På den ene siden bidrar prosjekter til fleksibilitet i organisering av kompetanse som løser komplekse problemer. På den annen side tilbyr firmaer fleksible arbeidsordninger for å bevare ansatte samt sikre lojalitet og arbeidseffektivitet. Den eksplorative studien samler inn primærdata fra norske organisasjoner. Vi fastslår først graden av prosjektifisering i norske virksomheter for 2017, 2022, og 2027. Deretter undersøker vi og finner at prosjektifisering har en statistisk positiv signifikant effekt med arbeidsfleksibilitet. Videre indikerer resultater at industri har en signifikant kontrolleffekt på forholdet mellom de to variablene. Vår studie bidrar til forskning ved å styrke relevansen av fleksible arbeidsordninger som et verdifullt emne blant profesjonelle som arbeider i prosjektbaserte sammenhenger.

Nøkkelord: prosjektifisering, prosjekt intensitet, arbeidsfleksibilitet, fleksible arbeidsformer, HR fleksibilitet, human ressurs praktisering

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1. Introduction

This thesis investigates the relationship between the degree of projectification and work flexibility. The study aims at measuring the degree of projectification for Norwegian companies from all industries, which builds on research by Schoper et al. (2018). Thereafter, the project intensity measure is further used in investigations regarding a business' work flexibility. As a conclusion, we find that the projectification construct has a significant positive relationship with the work flexibility construct. In addition, we provide evidence revolving mediating effects of HR flexibility as well as various control effects, before discussing the findings in relation to previous research. Lastly, we provide managerial implications and guidance towards future research avenues.

On one hand, the term projectification is an approach that organizes work around specific projects rather than traditional hierarchical structures, as studied in the Renault case by Midler (1995). This approach allows for greater flexibility in terms of roles, responsibilities, and time resources, as well as increased opportunities for collaboration and creativity (Packendorff, 1995; Economist, n.d., p. 9; Lundin & Söderholm, 1995). Work flexibility revolves around work conditions for employees; the ability to adjust the time, location, and nature of work to better suit individual needs and preferences (Prem et al., 2021). This also relates to remote work, flexible hours, and job sharing (Dizaho et al., 2017, p. 9). Together, projectification and flexibility can help organizations become more agile, responsive, and productive, while also improving employee satisfaction and work life balance (Henning & Wald, 2019).

Since Midler's Renault case in 1995, the buzzword projectification has gathered exponential interest among practitioners and scholars (Bakker, 2010, p. 467-468; Schoper et al., 2018). Most recent, the evolution of temporary- and project work has furthermore been affected by the recent pandemic as professionals had to work from home. We therefore want to investigate if working in project-based settings has a relation with flexible work arrangements. We find several sources stating that this avenue might yield interesting results. For instance, The Economist (n.d., p. 4) claims that organizations with knowledge workers "*have increased both location and time flexibility in work arrangements since the onset of the covid-pandemic*".

Researchers further document that there is a growing number of organizations and workers that rely on short-term and project-based relationships by using digital platforms such as Upwork

and Fiverr (Jarrahi et al., 2021). Another article states that as organizations are getting increasingly projectified, changes in employee organization becomes apparent (Schoper & Ingason, 2019). More specifically, we find project-work and flexible work arrangements as interesting concepts to investigate in relation, as "*temporary organizations contribute to making firms more flexible*" (Henning & Wald, 2019, p. 807). However, we do not find empirical research or data on the relationship between project-based working conditions and flexible working arrangements. Therefore, we want to find out whether there is a relation between projectification and work flexibility in Norwegian companies. This is done by analysing primary data from questionnaires sent to individual companies. The primary problem statement is as follows:

Does projectification have an impact on organizations work flexibility?

Going forward, we investigate projectification in Norway and its relation to work flexibility on the firm level, building on theories of Wald et al. (2015), Schoper et al. (2018), and Spanuth et al. (2020). Our mission is to redo the quantitative study regarding the degree of project-based work in organizations (question 8, appendix A). Moreover, we use project intensity (question 10, appendix A) as measure in relation to the work flexibility concept. We expect that the use of flexible working arrangements has become more prevalent among businesses in Norway and that there is a correlation between the degree of project work and the degree of work flexibility (Hunter, 2019; Nuhn & Wald, 2016; Wald et al., 2015; Allvin et al., 2013).

The structure of the paper will be as follows: Section 2 provides literature in relation to projectification and work flexibility, followed by the research questions and hypothesis statements. Section 3 explains which method that is used for gathering data as well as why this scientific method is applied. Here, initial assumptions and calculations regarding the reliability and validity of the research model is provided (Hair et al., 2014, p. 98-100; Spanuth et al., 2020). Section 4 presents how the data has been collected and processed in addition to general findings. Section 5 presents the findings from the PLS-SEM and PLS-MGA algorithms, which are conducted using SmartPLS4. Results regarding hypotheses are discussed and concluded in section 6, regarding its limitations and implications on further research avenues.

2. Theoretical framework

Organizational structures based on projects have gained increased interest by scholars. This interest might have increased due to projects introducing the notion of flexibility (Johnson et al., 2017, p. 448). Going forward, we review relevant literature in relation to project-based structures and consequently projectification (2.1.). Thereafter, we review terms related to flexibility (2.2.) and revolving concepts.

2.1. Projectification

There are many different ways of organizing firm. However, we focus on the project-based structure, which is one of the five most common organizational configurations (Johnson et al., 2017). In recent decades, working in project-based forms has become more popular among businesses (Bechky, 2006; Packendorff & Lindgren, 2014). This has contributed to the emergence of projectification as a buzzword among academics (Midler, 1995). The reason for increased popularity is that firms can organize cross-functional business expertise in rapid changing and complex markets (Hobday, 2000, p. 871; Lundin et al., 2015; Schoper et al., 2018).

It is difficult to pinpoint an exact date or period for when project-work first began as the concept of working on a specific task or goal with a defined end date. In all likeliness, working in projects has existed for thousands of years. Some of these includes building the Great Wall of China, the Egyptian Pyramids, and the Suez Canal (Lundin et al., 2015, p. 20). The modern concept of project work developed in the 20th century, but it was not until 1930s the term was used in industrial organization context. A specific project that required alternative ways to organize in comparison to traditional work during the following period included the Manhattan Project in late 1940s to 1950s, but also construction, civil engineering, oil and gas, shipbuilding, film, and consultancies, to name a few. Furthermore, an increased proportion of work during the aforementioned time-period was conducted outside of traditional industries, being service oriented and knowledge intensive (Lundin et al., 2015). Nonetheless, project orientation was also practiced to a larger extent inside traditional industries, because of innovation pressures due to shorter product life cycles. Thus, project work in forms of temporary organizations (TO), had come to prevail in the 1960s. Bennis went so far to say that "*organizations of the future will have some unique characteristics. The key word will be*

'temporary'; there will be adaptive, rapidly changing temporary systems" (Bennis, 1965, p. 34).

During the 1970s, Bakker (2010, p. 468) claims that the usage of TOs became more popular among scholars and practitioners. This was due to increased amounts of R&D projects, film sets, and construction projects, all of which could be described as having short life spans when compared to permanent organizations. In addition, temporary work inside organizations became more apparent as projects had a one-time task, which was to be finished within a specific date, by a group comprised of experts from different functional units (Lundin & Söderholm, 1995; Packendorff, 1995, p. 320). Thus, temporariness was not only constricted to one-time projects such as films, but also with the temporary work in organizations.

As a result of literature by Lundin & Söderholm (1995), Burke & Morley (2016, p. 1236) argue that the contribution of the former researchers was followed by an exponential growth in research on TOs. The latter researchers claim that literature on the theme was ambiguous with several interpretations. Therefore, Lundin & Söderholm might arguably be two of the most important researchers on TOs. To illustrate this, Bakker (2010, p. 467) documented the exponential increase in growth of literature on temporary organizational forms from late 1990s through the 2000s. The same researcher also documents a variety of terms explaining the similar phenomenon. For instance, he states that ephemeral organizations, temporary teams, transitory organizations, short-term projects, disposable organizations, and temporary organizations all holds commonalities. However, there are also differences in how temporary organizations are defined. For instance, Lundin & Söderholm (1995) focuses on action rather than decision, whereas Goodman & Goodman (1976, p. 494) presented a task oriented TO as *"a set of diversely skilled people working together on a complex task over a limited period of time"*.

Overall, in recent years it has been stated that even though there are apparent differences in focus on action or task, researchers agree that TOs are finite and limited to a time constraint, and therefore define temporary organizations as "a *temporally* bounded group of interdependent organizational actors, formed to complete a complex task" (Burke & Morley, 2016). Nevertheless, we follow Lundin & Söderholm (1995, p. 438-439) definition of the term, who summarize temporary organizations as

- *"A unique task or one-time project.*
- *With a time limitation.*
- *Constituted by allocation of resources.*
- *There is a before and after, i.e., transition that relates to accomplishments".*

In pair with developments in the projectification of society, technology has developed from being able to mass produce products towards customers to meeting demands of single individuals (Lundin et al., 2015, p. 12). This does not only include demands from external stakeholders, but also working people within the organization. For instance, by stating that employees go from fixed workplaces to extend one's "*time/room*" dimensions (Lundin et al., 2015, p. 14). This means that one could work in one place while being at another location. Thus, project organizations are able to meet demands regarding flexible ways of working. As a consequence, this has increased the importance of projects (Manning, 2017, p. 1399).

Our research builds upon research by Wald et al. (2015, p. 24) and the following definition of a project which builds on the aforementioned research by Lundin & Söderholm (1995). The former researcher defines projects as "*largely characterised 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 organisation exists, which is defined as different from the standard organisation 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."*

Wald et al. (2015, p. 19) furthermore claims that the "new economy" comprising of digitalization, globalisation, and knowledgeisation, contributes to new ways of organizing businesses. These forms are less dependent on hierarchical control and bureaucracy, which lead to organizations being ambidextrous (Wald et al., 2015, p. 9). Thus, increased degree of project work, or *projectification,* can be observed in western economies. The results show an increase in project work to 34.7% in Germany in 2013. A replicated study built on the aforementioned

article indicate that projectification is 32.6% in Norway and 27.7% in Iceland (Schoper et al., 2018). Thus, the high degree of projectification entails a lower risk when it comes to the relevance of its subject (Wald et al., 2015, p. 21).

The Scandinavian Journal of Management has published several of the aforementioned articles which we use as a theoretical basis. Midler (1995) is one of the articles which marks a breakthrough in the projectification-term, when he researched the French automotive manufacturer Renault. In the Renault case, the company transitioned from being oriented in line with Taylorism to project-orientation in which departments collaborated across their functional silos. Reasons for the transition was due to increased complexity and growth in number of products in the 1970s, as well as increased competition from Japanese automotive manufacturers which put innovative pressures on the firm. Midler followed the firm through four phases, in which experienced project managers with knowledge from the operations gained enough status to coordinate with all functional departments and outside suppliers. More importantly, the company had two avenues that could be pursued in phase four. One of which was to continue to reinforce project structures, being to move employees from their respective departments into projects when needed. The other alternative that Renault went to pursue was balancing the department and project identities, *"and setting up a complementary relationship between the two"* (Midler, 1995, p. 371).

Wald et al. (2015) continues to divide the projectification term in two dimensions which are viewed on firm-, industry, and economy-level. In the first dimension, projectification on the firm level can be viewed as a share of project work on total work in an organization. For instance, it is possible to ask how much time of a 40-hour work week is being spent on working in projects. Thus, we arrive at a ratio-measurement, in percentage, which is further applicable on industry- and economy-level. Nonetheless, to the best of our knowledge, only a handful of researchers has considered projectification with a quantitative focus. Further, we are interested to see if the estimations on previous projectification research hold, increase, or decrease (Wald et al., 2015; Schoper et al., 2018). Additionally, project intensity is used to measure the relation with work flexibility. This is a measure that consists of five Likert scales which describes the overall concept of projectification.

The second dimension, being the qualitative dimension, considers using *projects as flexible, less bureaucratic, innovative forms of organizing in an organization* (Wald et al., 2015, p. 20).

In qualitative terms, we observe relatively more literature on projectification. Among quantitative studies after Wald et al. (2015), Schoper et al. (2018) examines the amount of project work in comparison with different countries. As aforementioned, the study found that about 1/3 of total time at work was spent on working in projects in Iceland, Germany, and Norway, proving that there are similarities between the Nordic and western countries. More interestingly, the researchers suggested to redo the test in conditions when there is an economic recession, rising unemployment or restructuring of an organization, i.e., when there is rising uncertainty. The suggestion in pair with the recent covid-pandemic and flexibility implications, makes an interesting research avenue to pursue.

2.2. Flexibility

In this section, we define, describe, and draw from literature regarding the flexibility concept. Depending on the context, the term flexibility can be defined in various ways. Nonetheless, the work flexibility of organizations and its relation to projectification are the main topics of this thesis. Next, we review literature regarding the flexibility theories and concepts.

In the recent decades, usage of information technology (IT) has increased exponentially in pair with global operations (Prem et al., 2021, p. 1). This has further led to changes in norms and regulations of working practices becoming more decentralized, as business professionals are not required to meet in organizational headquarters. Ten years ago, Allvin et al. (2013, p. 100) stated that there was a "*general trend in organization and management toward decentralization, entrepreneurship, and flexibility* …". This relates to the aforementioned case of Midler (1995), who stated that teams have become the basic unit of a production. Consequently, the projectification of teams, flexibility, and work decentralization are all prevalent terms among business practitioners which are seen in similar contexts. From a business perspective, one of the most important assumptions is that being flexible or agile increases the likeliness to respond and overcome the changes in the market, and possibly utilize fluctuations to gain experience and access new opportunities (Martinez Sanchez et al., 2007, p. 42-64). Nonetheless, we are assessing the notion of work flexibility, which is a more specific term than the abovementioned general concept.

The intention of work flexibility is to, in part, give employees freedom to choose where to work from, when to work, and whether to practice a flexible work schedule (Dizaho et al., 2017, p.

9). Depending on whether it is employee- or employer focused, work flexibility can more specifically be divided into two categories (Kelliher & De Menezes, 2019, p. 4). From the perspective of an employer, flexibility concerns how to become more efficient, productive, and competitive with the usage of the workforce within a firm. From the perspective of an employee, flexibility concerns how to achieve better work life balance through making it easier for employees to combine their work-life with their social life. Thus, businesses today are finding it increasingly necessary to be able to offer employees flexibility to retain existing staff and attract new hiring candidates. In sum, we include the perspectives of an employer and employee when defining the notion of work flexibility.

The overall view in today's business environment is that organizations must respond to rapid changes and fluctuations in the market. By allowing themselves and their employees to become flexible, they are better prepared compared to less flexible businesses. The focus on becoming more flexible has been an increasingly important factor for organizations during the 20th century, as stated by Volberda (1998, p. 1). The researcher further argues that only the flexible firm can react to the rapid changes in present markets, and the ones that are not practicing flexibility lacks the ability to defend and regroup themselves in uncertain situations.

Going further back, the concept of flexibility can further be divided into internal and external flexibility (Ansoff, 1965, p. 55-57). The external flexibility is both a defensive and offensive method and seeks to adapt to uncertainties. External flexibility is about reducing the risk of catastrophes in a proactive sense. Here, one investigates new business markets and gain opportunities from these. In contrast, the internal flexibility is trying to react to uncertain events. In this case, we will focus on both flexibility terms. As the internal method mainly focus on how to react and adapt to unforeseen events in the market, which are relevant for rapid changes in organizations and it projects. Developing and adding new methods of work flexibility, is a way of acting defensively in order to reduce the harm of changes in the business and the market it operates in, through external flexibility.

To become flexible, it is expected that businesses need to become more decentralized and allow for their employees to have more control over how to organize their work-life and decision making (Prem et al., 2021, p. 28). This focus is dependent on a management that allows for employees to be flexible and learn how to manage a flexible staff. To survive, it is important that organizations are prepared for both real and potential changes and fluctuations in the

market (Eriksson-Zetterquist et al., 2006). The best way to prepare for those fluctuations is to look ahead and allow for change and flexibility, not only being focused on what worked best in the past.

We define work flexibility as the need for businesses to become more decentralized and allow for their employees to have more control over how to organize their work-life and decision making (Prem et al., 2021, p. 3). In a more general sense, Chatterjee et al. (2022, p. 1501-1512) explains that flexibility is a prevalent term among hirers, in relation to work, commitment, productivity, and creativity. More importantly, workplace- and worktime-flexibility when working remote has increased in interest because of technological alternatives with the usage of IT. Work flexibility has become increasingly important for both employees and employers throughout the years, and the importance of being flexible was shown during the recent pandemic (Kelliher et al., 2019, p. 1). Nonetheless, Kossek & Lautsch (2018, p. 5-36) state that flexibility to control work location is rarely available for lower-level jobs, it does on the other hand benefit middle- and upper-level employees. Also, due to strict rules, regulations, and norms in the public sector, flexibility has for a long time been practiced the most in the private sector. During the last years, flexibility on the other hand became increasingly more interesting and necessary for the public sector because of the opportunities it offered in relation to distancing rules during the peak-pandemic period.

Most organizations in both private and public sector is forced to show some kind of flexibility to stay competitive (Kelliher et al., 2019, p. 2). By being flexible, one goal for the employer is to attract new employees and reduce turnover, as well as stay competitive and work more effectively. However, other research shows lower work-life quality if the employee must work in shifts, weekends, or fixed hours (Dizaho et al., 2017, p. 9).

The covid-pandemic brought about a significant shift in the way organizations operate, with many companies quickly implementing remote work policies to ensure the safety and well-being of their employees (Amankwah-Amoah et al., 2021; Franken et al., 2021). This led to the widespread adoption of working from home for many organizations, to continue business operations while also complying with social distancing guidelines. The sudden shift to remote work presented some challenges for organizations, such as maintaining productivity and communication among employees, but it also highlighted the benefits of remote work, such as increased flexibility, cost savings, as well as IT-competence. Overall, the pandemic has

accelerated the trend of working from home, which may have long-term implications for the future of work.

As remote work has continued to develop, the ability of working from home has developed into working from anywhere in some organizations (Choudhury et al., 2010, p. 655). Working from anywhere opens for not only temporal flexibility but also geographic flexibility, meaning that employees are able to work from anywhere in the world in a certain period. This poses an opportunity for individuals that would be able to gain motivation and become more efficient when they are allowed to live in another geographic location.

Furthermore, flexitime and schedule flexibility are some of the most used and well-known methods of work flexibility. These offers the employee to decide when to work and have the power to decide to schedule their own meetings, deadlines, and work tasks (Hill et al., 2010, p. 349). To remain some control, employers often have core hours during the day where the employees must be available at work, unless they have received special permission to be absent. Flexitime and schedule flexibility will regardless keep the employee's flexible outside of the core hours.

By combining schedule flexibility and allow employees to work from home, researchers have found that this will contribute to reduced stress levels, increased work life balance and overall health of their employees (Hill et al., 2010, p. 356). Results has also shown that combining these two will have a positive effect both on employee overall health and work-life balance as well as it contributes to a better result for the business. Also, the employees are more effective and have more capacity to work longer hours.

There are studies speaking in favour of using flexible work arrangements, as well as studies that speak in disfavour of these solutions. Research has found that flexible working arrangements has a positive effect on employee performance, by increasing productivity and work endurance (Altindag & Siller, 2014, p. 6; Chatterjee et al., 2022). The findings in the former article had sector limitations and 200 individual respondents, which offers a research avenue that increases the generalizability across industries. In addition to this, it is found that businesses that allow for flexibility gain loyalty from their employees. As a consequence, this contributes to reducing the turnover rate in businesses.

In contrast, Van Der Lippe & Lippényi (2020) found that individual employees perform better when their colleagues do not work from home. In other words, the best-performing employees might be more productive when working from home, but employees who might lag or need help seem to be less productive. The extent to which co-workers' work from home appears to be consequential for the functioning of the individual employee. In summary, different research on the work flexibility topic therefore includes both advantages and disadvantages when it comes to working from home. Thus, the scholars and practitioners are not certain regarding work from home in relation to productivity, effectivity, and overall organizational performance.

Remote work in projects has become increasingly better and more accessible as digital solutions has developed and improved over the last years (Hunter, 2019). Several video-conference solutions and other digital tools contributes to remote work gaining the same advantages as office-work. Although video-conference platforms are getting better and better, they still do not offer the same advantages as meeting face to face. The researcher further state that the best video conference platforms are limited by specificality of tools and the pre-installed hardware in conference rooms.

Moreover, Hunter (2019) explains that remote project work functions optimally when all team members has met and got to know each other physically and participated in a workshop or similar. Once the team members have met physically, this contributes to the team working more efficiently and it also makes for a more pleasant teamwork. Meeting the team in person gives the opportunity to connect on a more personal level. This opens for better collaboration and understanding between individuals in the team, as well as it opens for better work life balance and conversations that not only has to do with work. Project teams incorporating flexible working arrangements will enhance the quality, productivity and autonomy when solving complex problems (Hunter, 2019; Nuhn & Wald, 2016).

Overall, there are consensus among scholars and practitioners towards the notion that flexibile working arrangements in organizations is important for both the employers and employees. As industries today changes rapidly, the main importance is that businesses can react and cope with the changes efficiently, for instance when unexpected events like the covid-pandemic occur. We therefore assume that flexible businesses can respond better to these changes and unforeseen events in contrast to the ones that are not flexible.

2.3. Problem statement

To arrive at a problem statement, we must first explain the meaning of theories, questions, testing, and hypothesis (Hair et al., 2014, p. 37-43). Theory is a set of systematically related statements, including law-like generalizations that can be tested empirically. These theories provide inputs into the research process and aims at explaining phenomena occurring in business contexts, also called descriptive theories. To arrive at a descriptive theory, the research must conduct scientific methods to gain knowledge, which is done by asking questions. Thus, research questions either approve or disapprove formal problem statements, assumptions, speculations, suppositions, or ideas. More specific, a hypothesis is an unproven tentative supposition or proposition that explains a phenomenon which we want to test (Hair et al., 2014, p. 145).

As stated in part 2.1. and 2.2., there is an assumption that projectification has a relationship with work flexibility as researchers assume that project-based organizations are flexible (Henning & Wald, 2019). However, there are no empirical studies concerning the relation between the two concepts. On one hand, to measure the projectification concept, we use the project intensity scale as previously used by Wald et al. (2015). On the other hand, to explain the work flexibility concept, we use generic and schedule flexibility measures which are used in flexible work arrangements (De Menezes & Kelliher, 2011, p. 456). Thus, we can arrive at a conclusion regarding whether there is a significant relation. As a result, the research question offers the following primary null hypothesis and alternative hypotheses:

H_1: The degree of projectification has a significant relationship with work flexibility.

H_0: There is no significant relationship between a firm's degree projectification and its work flexibility.

The symbol ρ stands for correlation, meaning that the null hypothesis is expressed as follows: $H_0: \rho = 0$. The alternative hypothesis would therefore be expressed as: $H_1: \rho \neq 0$, meaning that we hypothesize the correlation between projectification, and work flexibility is significantly higher than 0.

We must also quantify the extent of projectification in the Norwegian economy to establish if there have been any changes with previous research (Schoper et al., 2018). Thus, we first use

the degree of projectification to measure this. Furthermore, we use project intensity to investigate if there is a link between projectification and work flexibility, but also HR flexibility as a mediating factor. We therefore draw on scales by De La Lastra et al. (2014), to see if there is a significant mediating effect. In this case, we hypothesize that HR flexibility has a mediating effect on flexible working arrangements (De La Lastra et al., 2014, p. 10). The researchers implies that HR flexibility might contribute to more ambidextrous ways of organizing, i.e., that HR flexibility has an effect on flexible working arrangements. The measurement on projectification will be applied as the variable "X" to explain to what degree projectification is related to work flexibility "Y", as well as to which degree HR flexibility "Z" is a mediator. Their corresponding indicators is shown in appendix A, which is the questionnaire.

Thus, the following hypothesis represents investigations regarding the mediating and control relationship. These are further illustrated in the research model below, as well as in section 3:

H_2: The degree of projectification has a significant relationship with HR flexibility.

H_3: HR flexibility has a significant relationship with work flexibility.

Furthermore, there might also be variables that affects the relationship between X and Y. Therefore, we control for variables that relates to whether businesses are in the manufacturing or other industries, are young or old, and/or are small or large, as explained in the method-section.

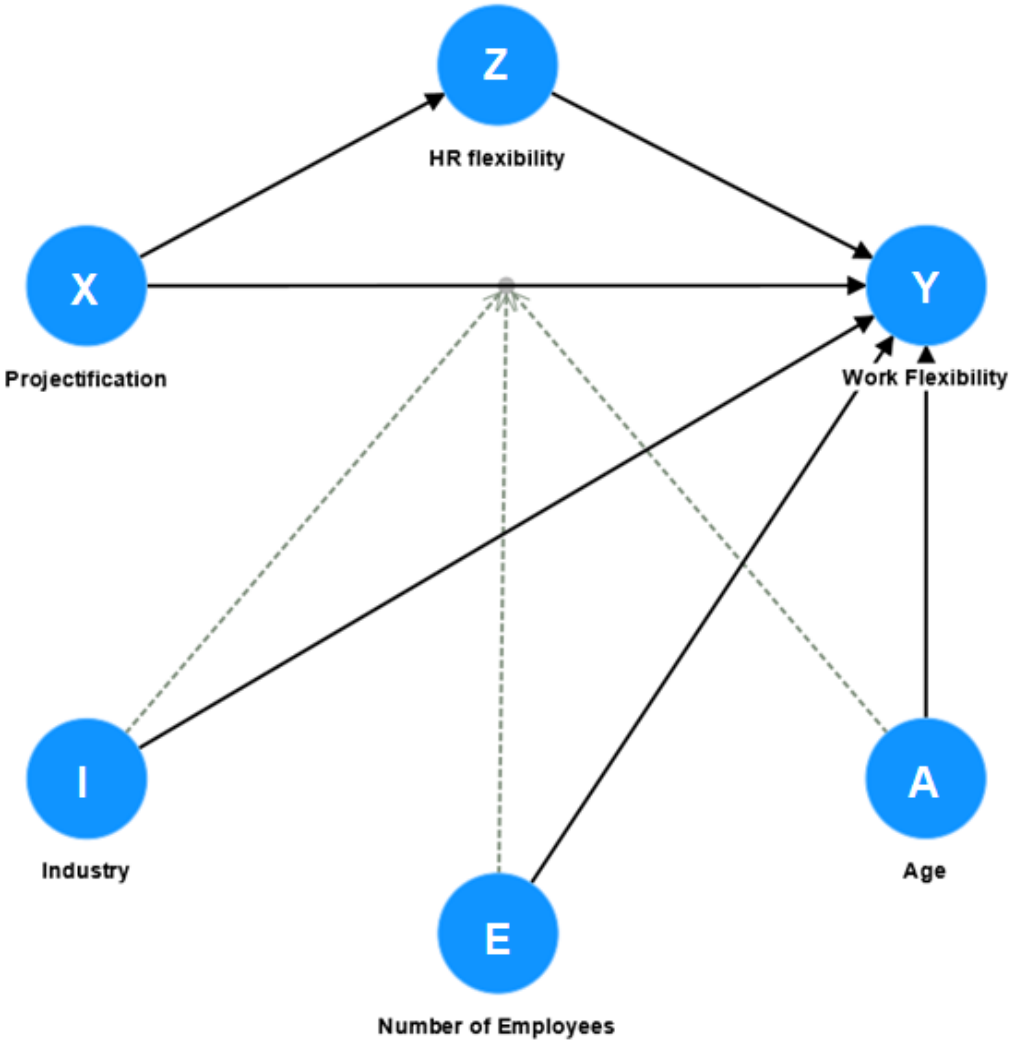

Figure 1: Research model

3. Methodology

In this section, we first explain how the data was measured. Thereafter, we present which method we use to collect and analyse the data. Our research builds on previous findings and implications by Wald et al. (2015), Schoper et al. (2018), and Spanuth et al. (2020). With this theoretical foundation, our supervisor provided us with the questionnaire which had been used in previous research regarding the abovementioned reports. Thus, it was clear that the data collecting method was going to be in form of a questionnaire that provided primary data which could be compared with previous studies. The next step in gathering data from respondents considered finding email addresses to which the questionnaire could be sent. The group contacted proff.no for access to their database and was granted this to export email lists, as well as supplying this list with emails from different business regions in Norway. In sum, about 13 000 addresses were provided.

In this thesis, we analyse data using structural equation modelling (SEM). This is a process that allows for multivariate analysis, i.e., incorporate unobservable variables measured indirectly, as constructs, by indicator variables (Hair et al., 2014, p. 4 & 6). The subtype of SEM is both covariance-based (CB-SEM) and partial least squares (PLS-SEM) as explained by the author. He furthermore states that the latter type, the PLS-SEM method, is used to "*develop theories in exploratory research*", and for that reason we will be using this method for our thesis. More specific, PLS-SEM is useful for analysing phenomena related to the work flexibility construct. Given that work flexibility is an abstract, complex, and indirectly observable phenomenon, it may be challenging to explain. As a result, the concept is evaluated using a variety of indicators, i.e., questionnaire questions, to arrive at conclusions with a low degree of measurement errors.

3.1. Measures

In this section, we explain which measures that are used for independent, mediator, dependent and control variables. These justifications are related to previous research.

3.1.1. Projectification

Measuring the amount of project work might be done in several ways. For instance, Globerson (1994) presents the work-breakdown structure which can be used to summarize the cost status for the management of a firm. Thus, one can measure the cost of projects in relation to the total cost of the company and arrive at a ratio which defines amount of project work conducted in

an organization. Schoper et al. (2018) furthermore states that the share of project work could build on macro-economic measures such as measure of output on the gross-domestic product. On the other hand, this poses a challenge for project result that arrive from public organizations which are hard to value at a market price. Thus, the researchers arrived at measuring project work as a ratio of the total time spent in work, which is applicable to dissimilar industries and countries. In this thesis, we will continue to use this indicator in order to compare with previous research by Wald et al. (2015) and Schoper et al. (2018). However, we use *project intensity* as a measure for investigating the relation with work flexibility. This measure consists of five scales in question 10 (appendix A).

3.1.2. Work flexibility

Measuring work flexibility is conducted by analysing project intensity in relation to the former concept. The literature applied to measure this concept comes from De Menezes & Kelliher (2011). We apply measures from the *flexible working arrangements* concept, more specific measures that relate to generic flexibility and schedule flexibility. Reasons for using this concept as the work flexibility construct relates to previous research. Here, we hypothesize that there is a correlation between projectification and work flexibility due to their nature as being decentralized (Allvin et al., 2013). Also, we assume that flexibility enhance the quality, productivity, and autonomy of project teams when solving complex problems (Hunter, 2019; Nuhn & Wald, 2016).

3.1.3. Control variables

When analysing projectification and work flexibility, there are infinite number of extraneous variables that might affect and explain the relationships (Blumberg et al., 2014, p. 57). We apply size, age, and industry as control variables to see if these have any effect on the primary hypothesized relationship between projectification and work flexibility. Reasons for applying these as control variables is because previous research has implied that the variables might yield interesting insights (Wald et al., 2015; Schoper et al, 2018; Maxwell et al. 2007). However, we assume that the respondents are somewhat arbitrary when selecting which industry their business belong to. As a result of the anonymity, we are not able to investigate the effect as a moderator, but rather as a control effect. This also holds for the control effects regarding number of employees and company age.

According to Birkenshaw et al. (2002), the size of a company is an important aspect in contingency research. This has further been defined as a key contingency when it comes to organizational design (Baligh et al., 1996). Thus, the former researchers use number of employees as a control variable. Further, Maxwell et al. (2007) finds that there is a greater uptake of flexible working arrangements (FWA) in smaller businesses, defined as employing fewer than 250 people. However, as table 7 shows, the degree of companies with more than 250 employees in the Norwegian context represent 0.1% of all businesses. Therefore, we divide small companies as employing fewer than 50 persons, i.e. 49 and less in group 0 versus 50 and more in group 1 (Commission of European Communities, 2003).

In the aforementioned article, the service sector stands out in terms of FWAs. Researcher state that this offers positive sides regarding employee retention, recruitment, loyalty, and commitment (Maxwell et al., 2007). We therefore want to investigate for control effects when considering *manufacturing versus all other industries* (I), assuming that manufacturing industries have less decentralized organizational structures. We therefore divide the manufacturing group and all other services in accordance with table 1, meaning that fishery/ forestry/ agriculture, oil/ gas, and manufacturing are included in group 1, whereas all other industries are included in group 0.

Previous literature has investigated whether age of a company has an effect when using TOs (Schoper et al., 2018). For instance, it is expected that young companies are more likely to use project-based forms because processes and procedures are less formalized than in older companies (Spanuth et al., 2020, p. 10). In aforementioned cases, age has not had a significant effect in relation to TOs. However, we find company age to be an interesting effect to investigate in relation to work flexibility. One might expect that young companies are better able to adapt towards market opportunities through flexibility than their older counterparts (Bărbulescu et al., 2021, p. 2). We separate the age of business into two groups, one including companies that are 10 years and younger, and the other group including companies that are 11 years and older (Wagner, 2004).

3.1.4. Mediating variable

Mediating variables surfaces between the independent variable and the dependent variable (Sekaran & Bougie, 2016, p. 79). We therefore draw on scales by De La Lastra et al. (2014),

to see if there is a significant mediating effect. We hypothesize that HR flexibility has a positive mediating effect on flexible working arrangements. De La Lastra et al. (2014, p. 10) implies that HR flexibility might contribute to more ambidextrous ways of organizing, in other words that it has an effect on flexible working arrangements.

3.2. Methods of collecting data

We are utilizing questionnaires to gather primary data from respondents to measure the degree of projectification (X) in Norwegian businesses and its potential relationship with work flexibility (Y). Primary data is unique information gathered directly from the source and is considered more accurate and trustworthy than secondary data (Sekaran & Bougie, 2016, p. 395). This is a data collecting method which consists of a preformulated set of questions to which respondents records the answers related to characterized alternatives. In the analysis, we are analysing results of Likert scales.

Before distributing the questionnaire, we had to send a report to SIKT and get the questionnaire approved (appendix C). SIKT is appointed by the University of Agder (UiA) as their source of data protection in research. All research projects conducted through UiA is required to send in an application to SIKT and inform about the study, and if it is collecting or processing personal information in any shape or form. Our survey is not collecting any personal data, only general information about the companies participating in the questionnaire. Through SurveyXact we also made the survey anonymous to ensure the anonymity of the respondents as this data would not be relevant for our study.

3.2.1. Online Survey

Online questionnaires are advantageous in that they can reach a wider geographic area, allowing respondents to answer at their convenience and pace (Sekaran & Bougie, 2016, p. 143). Additional advantages consider low costs, bulk-emailing, possibilities regarding redelivery and time-effectiveness (Blumberg et al., 2014, p. 231). However, Sekaran & Bougie (2016, p. 265), state that there are sampling issues with online surveys as there might be respondents who are more likely to complete an online survey than others who ignore it. An example of this might be companies who have a low degree of projectification and therefore do not feel that participating in the survey applies to them.

To mitigate risks of ungeneralizable results, for instance by sending questionnaires to a few industries, we matched email addresses with their corresponding NACE-codes (table 1), to see if the distribution among the most emails were somewhat even. This was done to ensure that our results were comparable to previous studies when it came to generalizability across industries.

Norsk	English	Industrial Classification/ Code
Fiskeri/ Skog/ Jordbruk	Fishery/ Forestry/ Agriculture	01.-03.
Andre tjenester (eksklusive finansielle)	Other services (excluding financial)	05., 07.-09., 35.-39., 41.-43., 68., 69.-75., 77.-78., 80.-82., 90.-98., 99.
Olje/ Gass	Oil/ Gas	06., 19.
Produksjon (ekskludert Olje/ Gass)	Manufacturing (excluding Oil/ Gas	10.-18., 20.-33.
Salg/ Transport/ Service/ Turisme	Retail/ Logistics/ Hospitality/ Tourism	45.-47, 49.-53., 55.-56., 79.
Informasjon/ Kommunikasjon	Information/ Communication	58.-63.
Finansielle tjenester/ Forsikring	Financial services/ Insurance	64.-66.
Offentlig sektor/ Utdanning/ Helse	Public sector/ Education/ Health care	84.-88.

Table 1: Industry classification, NACE-codes

The questionnaire was sent to small and large companies in all industries to arrive at a representative sample which could be analysed. In section 3.1.3., we explain our division between large and small.

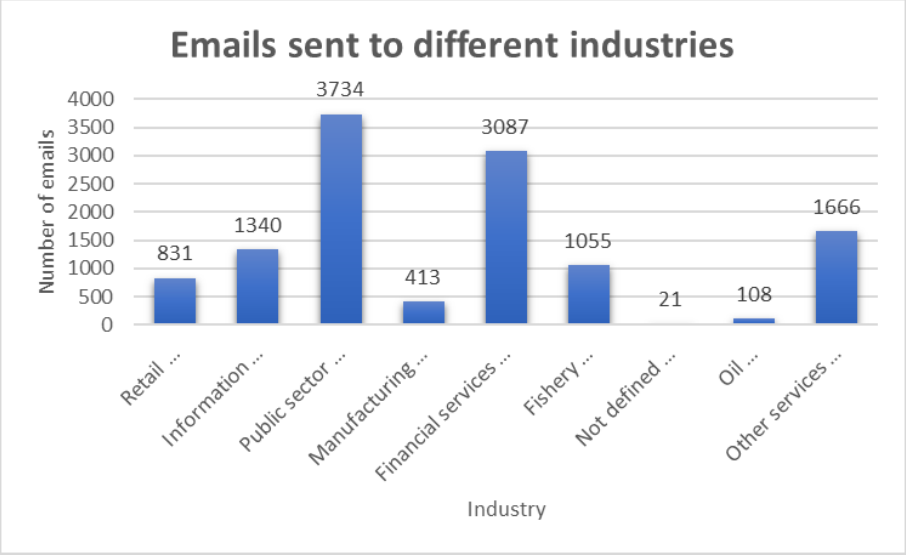

Figure 2: Distribution of emails among industries

As we can observe in figure 2, the 13 000 emails from proff.no that had a corresponding NACE-code were somewhat close to 384 respondents per industry, which is sufficient to arrive

at generalizable results (Sekaran & Bougie, 2016, p. 264). As we had exported all available emails from the oil/ gas industry (108), we consequently collected some more mail addresses manually, i.e., find emails from active Norwegian "AS" or "ASA". As a result, the final mail list was over 13 000.

After conferring with the supervisor it was agreed that all emails, including personal email addresses, could be used without breaking regulations regarding GDPR practices for sending out questionnaires which were to be answered by the respondents. Thus, a total amount of four students and one supervisor had access to the list, with the goal of gathering quantitative data for the analysis.

The use of SurveyXact as a questionnaire distributor and gathering tool are due to several reasons. First the application inhibits a larger range of question types, including skip patterns, routing, and multiple response options than alternative applications. This allows for more complex and sophisticated survey design. Second, in order to show professionalism we designed the survey with UiAs logo and with other visual changes. Third and most importantly, SurveyXact protect the survey data from unauthorized access, as previously explained. We are not as certain about the abovementioned points when it comes to other survey programs, for example Google forms.

3.2.2. SurveyXact and survey design

The SurveyXact questionnaire was mostly equal to the one used by Skeibrok & Svensson (2016), apart from some different questions at the end (from measure 17), where the master groups where able to ask questions specific to their own topic question (Wald et al. 2015). The former master students added "*fishery/ forestry/ agriculture"* and "*the oil and gas industry"* as industry categories to the form used by Wald et al. (2015; Schoper et al. 2018). As the data collection was done during the beginning of year 2023, we decided that the questionnaire would ask for numbers from the year of 2022.

Mails with questionnaire link was sent in Norwegian and English versions. The questionnaire was divided in to 5 parts, shown in the appendix A. The first part of the questionnaire aims to gather general knowledge of the company industry and size. Part B contain open ended questions and 7-point Likert scales to establish knowledge about the degree of projectification

in the organization. Part C aims to collect some more information of the respondent and the organization answering the questionnaire. Part A-C is important for both collaborating groups to collect data for the independent variable concerning projectification. The last parts of the questionnaire (D & E) are made specifically to collect data regarding the dependent variable for the respective groups. Part D covers the concept of work flexibility, covering the degree of work flexibility and HR flexibility. The constructs used in this part of the questionnaire is found in previous studies and is answered using 7-point Likert scales with the following ranging from 1 = Low Degree to 7 = High Degree. The last part of the questionnaire covers the questions for the cooperating group regarding business agility.

On February 27th we sent the questionnaire via SurveyXact. Thursday, March 2nd, we could observe that 41 respondents had finished the questionnaire even if 88 (0.67%) had partially completed the survey. As we had sent the questionnaire to approximately 13 000 emails, we find support in the theory from Sekaran & Bougie (2016, p. 143), who state that "*the return rates of questionnaires are typically low"* – although this was dramatically less than expected. As several participants had partially completed the survey, we resent a reminder of the survey on March 13th to increase the number of respondents.

We therefore had to gather more mails than the initial addresses from proff.no, which we did by going through organization members of various business regions in Norway. Thereafter, we used our UiA-mails to send the questionnaire link directly to these addresses, in a more personal and humble manner. Participants were also called by phone to ask if they were willing to fill out the survey. The combined effort with personal emails and phone-contact resulted in a substantial increase in the number of respondents.

3.2.3. Nonresponse errors

Before sending out the questionnaire we discussed the possibility of nonresponse errors. Nonresponse errors is possible when there is a difference between the organizations that participates in the questionnaire and the ones that do not respond to it, especially if there is a significant difference in the nonresponse group that would influence the result (Sekaran & Bougie, 2016, p. 242). One problem that we discussed was the possibility of businesses with a low level of project work did not want to respond and felt like the questionnaire did not fit their organization. To get a generalizable answer, it is important that also the organizations with a

low level of project work participates. By specifying this in the introduction mail of the questionnaire, the level of misunderstanding where hopefully reduced, and we were able to collect answers from organizations with different levels of project work.

As the data collection were only going to be through an online questionnaire, we did not have the opportunity to control how many respondents that came from the specific industries. One of the goals of this study is to compare the difference between industries level of projectification and work flexibility. We did however set an absolute minimum requirement of 200 respondents to arrive at a dataset which could be analysed further (Sekaran & Bougie, 2016, p. 263-264).

3.3. Method of analysing data

This section will demonstrate the modifications done to our dataset to prepare for further analysis. The following sections will also include a presentation of the procedures, measurements, and other decisions made to obtain the results for our descriptive- and PLS-SEM results.

3.3.1. Preparing the data for analysis

In SurveyXact we could observe that 605 persons had participated, 387 of which closed the survey before finishing it. This resulted in a dataset of 218 observations that had completed the survey. In other words, almost half of the participants closed the questionnaire halfway during the survey. Although our initial goal was to gather 384 respondents (part 3.1.2.), Sekaran & Bougie (2016, p. 264) states than a sufficient sample is between 30 and 500 for most research. We therefore continued to use the dataset due to time constraints.

We also controlled the dataset for outliers (QQ-plot) and for response patterns in SPSS and Excel but could not identify any respondent issues to deal with. Thus, all 218 respondents could be used for further analysis. We follow the procedure of Spanuth et al. (2020) when it comes to arriving at appropriate measures. When it comes to the degree of projectification, the question was asked per percentage basis.

Question 8.1.	0-14,3	14,3-28,6	28,6-42,9	42,9-57,1	57,1-71,4	71,4-85,7	85,7-100	Total
Number of respondents	**84**	**27**	**16**	**14**	**17**	**21**	**39**	**218**

Table 2: Question 8.1

As the number of respondents were relatively high among participants with low degree of projectification, we assume that the risk of nonresponse errors is low for this thesis. Going forward, we weight respondents with the GDP. By doing such a transformation, answers become comparable across countries. This is done with the intent of comparing our results with prior studies in Germany and Iceland.

3 782 224	total, in NOK million, share GDP per industry	
69 526	**1,8 %**	Fishery/ Forestry/ Agriculture
949 828	**25,1 %**	Other services (excluding financial)
918 975	**24,3 %**	Oil/ Gas (excluding Manufacturing)
243 321	**6,4 %**	Manufacturing (excluding Oil/ Gas)
450 895	**11,9 %**	Retail/ Logistics/ Hospitality/ Tourism
162 610	**4,3 %**	Information/ Communication
169 629	**4,5 %**	Financial Serivces/ Insurance
817 440	**21,6 %**	Public Sector/ Education/ Health Care

Table 3: GDP in total, numbers in NOK million, share GDP per industry

In the table above, we see that other services and oil/ gas accounts for almost 50% of the total share of GDP in NOK million. Thus, when investigating the degree of projectification for the Norwegian economy, this must be considered, so the data analysis becomes representative of the GDP contribution per industry.

In the following sections, we go from analysing descriptives to being more theoretical in a sense that includes specifying what the PLS-SEM path model should contain. This model is going to show us the relationships between the hypotheses.

3.3.2. Specifying the structural model and measurement model for PLS-SEM

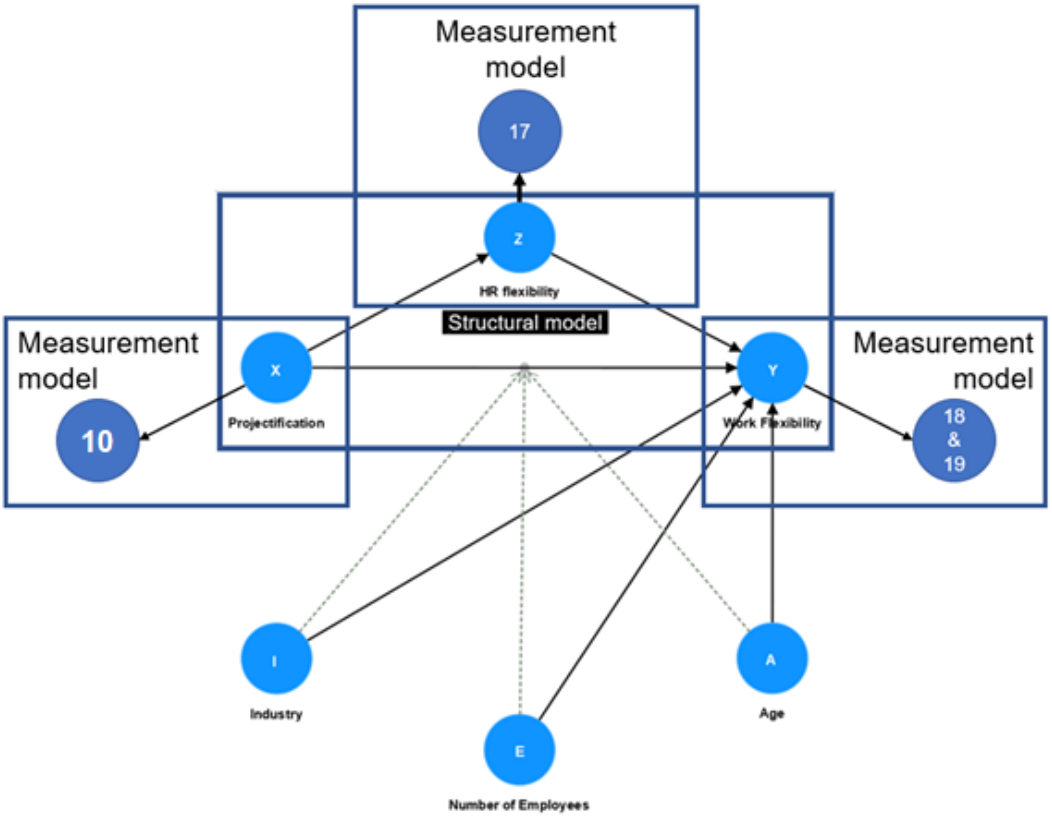

Figure 3: Structural and measurement model

Before starting with the PLS-SEM analysis, we first had to specify what to include in the structural and measurement model, i.e., the path model (Hair et al., 2014, p. 37-42). Figure 3 illustrates the relationship between variables that we either reject or accept through hypothesis tests. The number inside the blue bubbles revolves questions/measures used (appendix A). In that regard, the most important in relation to the primary hypothesis is illustrated in the structural model, i.e., variable X, Y, and the mediating effect of Z. Additionally, we are investigating whether there are other effects that affects the relationship, being the control variables I, E, and A.

Measures for X, Y, and Z were all measured in 7-point Likert scales. In total, these make up three constructs which are projectification, work flexibility, and HR flexibility, respectively. In the path model, we assume that X precedes Y, i.e., that the independent projectification variable on the left side is exogenous. Similarly, the dependent work flexibility variable on the right-hand side is endogenous. As we have two latent variables which we want to investigate, there might be mediating effects in the inner model, i.e., HR flexibility, as previously implied by De La Lastra et al. (2014, p. 10).

Further, the research model includes how the relation changes between projectification and work flexibility if there are significant control effects. The control variables in this research are industry, age, and company size, which are categorically treated in our example.

Hair et al. (2014, p. 46-50) explain that measurement models can be formative or reflective. Through our analysis and literature review, we find evidence of our measurement models being *reflective* between the indicators in the concept of work flexibility. This means that each individual indicator is connected to the same variable and that there are covariances between the indicators. As the measurement models are formative, we seek to have a high degree of correlation, meaning that different indicators should be equally as high or low. This differs from the reflective measurement model, which aims at having as low correlation as possible between the indicators. In the case of reflective outer measurement models, convergent validity, internal consistency reliability, and discriminant are the most important metrics (Hair et al., 2014). Whereas in the inner structural model, path coefficient, p-value, and R^2 are the most important evaluation metrics. We come back to these metrics in table 5, which summarizes findings regarding validity and reliability of the research model.

3.3.3. Normality of the data

To test the normality of the data, we will be testing for both skewness and kurtosis. The skewness is a measure of how symmetrical the distribution of variables is compared to the sample mean (Jondeau & Rockinger, 2003). On the other hand, kurtosis measures whether the distribution is too peaked or flat (Hair et al., 2014, p. 54). The sample is normally distributed when both the skewness and kurtosis is zero, albeit the probability of this occurrence is low. Therefore, the sample is significantly skewed when it is over +1 and under -1 and the kurtosis is significantly peaked or flat if it is over +1 and under -1, respectively.

The PLS-SEM method does not require the data to be normally distributed to arrive at valid conclusions, as this method of analysing data is nonparametric (Hair et al., 2014, p. 54). Even though it is not required by the statistical method, it is important that the data is not too far from normal, as this could lead to other issues when testing for the significance of other parameters.

	Skewness	Kurtosis	
10.1	0,724	-0,804	Project intensity
10.2	0,108	-1,559	
10.3	0,258	-1,527	
10.4	0,796	-0,649	
10.5	0,606	-1,086	
17.1	0,482	-1,227	HR flexibility
17.2	0,436	-1,011	
17.3	0,232	-1,058	
17.4	0,683	-0,627	
17.5	0,150	-1,172	
17.6	0,091	-1,040	
17.7	-0,106	-1,118	

	Skewness	Kurtosis	
18.1	0,232	-1,299	Generic flexibility
18.2	0,616	-1,336	
18.3	-0,087	-1,468	
18.4	0,302	-1,313	
18.5	-0,170	-1,415	
18.6	0,059	-1,667	
18.7	0,646	-1,200	
19.1	0,046	-1,406	Schedule flexibility
19.2	-0,281	-1,248	
19.3	-0,372	-1,099	
19.4	0,204	-1,223	
19.5	0,209	-1,232	
19.6	0,366	-1,210	
19.7	0,267	-1,397	
19.8	0,524	-1,148	
19.9	0,019	-1,334	
19.10	0,107	-1,430	

Table 4: Kurtosis and skewness

Table 4 shows the kurtosis and skewness for all indicators that go into analysing projectification, work flexibility and HR flexibility. As we can observe, all indicators are normally distributed when it comes to skewness. However, regarding kurtosis almost all indicators are -1 or less, meaning that answers on the Likert-scales vary among the 218 participants to a large extent. Nonetheless, as the PLS-SEM method does not require normal distribution, we go forward to the path model estimation and the subsequent analysis of the data.

3.3.4. PLS path model estimation

Furthermore, the PLS-SEM method will be discussed. When running the PLS algorithm, it is important to check if there are more than 5% missing values from the included indicators in the sample (Hair et al., 2014, p. 57). In the program we used, the default setting was to replace all the missing values with the mean value. We had no missing values in our sample, because the questionnaire was set up in a way that required all participants to answer all the questions in the questionnaire.

The PLS technique is used to estimate the unknown components for both the structural and measurement models. The unknown elements are the connections between the loadings and their variables, as well as those between the different variables. Furthermore, there is two stages of the algorithm. The algorithm initially determines a score for each variable and then it

determines the loadings, path coefficients, and R^2 values. We chose the path weighted scheme as a weighted scheme for the inner weights' estimation. Since the results is similar between the different alternatives, we went for the suggested course of action. This alternative has the maximum R^2 for the dependent variable (Y) and is generally applicable to all variants of the PLS model. In section 5 we will explain the R^2 value in greater detail. Later in this section the results of measurement models will be presented and in part 5 the structural model will be presented.

3.3.5. Evaluating the measurement models

We follow the procedures of Spanuth et al. (2020) when it comes to evaluating the measurement models. We run the PLS-SEM algorithm, followed finding outer loadings on every indicator. If the outer loading is over 0.708, this is a sign of having convergent validity (Hair et al., 2014, p.113 & 132). High outer loading on a construct indicate that the associated indicators have much in common. Apart from indicator 18.2. and 19.6. in red, all outer loadings are over 0.708. When all indicator loadings are squared, indicator reliability must be over 0.5, which means that the *variance shared* between the construct and the indicator is higher than the *measurement error variance*.

As outer loadings and indicator loadings measure validity on an indicator level, we must use average variance extracted (AVE) to establish validity on the construct level (Hair et al., 2014, p.114). This is done by calculating the sum of all squared indicator loadings, before dividing on the number of all indicators. Results regarding AVE can be found in the following measurement table 5.

Latent variable	Indicators	Convergent validity			Internal Consistency Reliability		Cross Loadings	Discriminant validity	
		Loadings	Indicator reliability	AVE	Composite Reliability	Cronbach alpha			
		>0,708	>0,50	>0,50	0,60-0,90	0,60-0,90	<Loadings	Loadings>Cross loadings	HTMT does not include 1
		A	B	C	D	E	F	G	H
Project intensity	10,1	0,784	0,615	0,712	0,925	0,899	0,324	0,460	Yes
	10,2	0,855	0,731				0,392	0,463	
	10,3	0,854	0,729				0,451	0,403	
	10,4	0,879	0,773				0,296	0,583	
	10,5	0,844	0,712				0,268	0,576	
HR-Flexibility	17,1	0,763	0,582	0,717	0,947	0,934	0,170	0,593	Yes
	17,2	0,857	0,734				0,291	0,566	
	17,3	0,891	0,794				0,266	0,625	
	17,4	0,815	0,664				0,221	0,594	
	17,5	0,918	0,843				0,310	0,608	
	17,6	0,900	0,810				0,327	0,573	
	17,7	0,769	0,591				0,290	0,479	
Work flexibility	18,1	0,784	0,615	0,600	0,962	0,958	0,346	0,438	Yes
	18,2	0,630	0,397				0,332	0,298	
	18,3	0,840	0,706				0,345	0,495	
	18,4	0,785	0,616				0,347	0,438	
	18,5	0,729	0,531				0,312	0,417	
	18,6	0,855	0,731				0,390	0,465	
	18,7	0,747	0,558				0,375	0,372	
	19,1	0,790	0,624				0,243	0,547	
	19,2	0,803	0,645				0,335	0,468	
	19,3	0,823	0,677				0,314	0,509	
	19,4	0,775	0,601				0,289	0,486	
	19,5	0,747	0,558				0,315	0,432	
	19,6	0,698	0,487				0,236	0,462	
	19,7	0,798	0,637				0,287	0,511	
	19,8	0,755	0,570				0,235	0,520	
	19,9	0,745	0,555				0,302	0,443	
	19,10	0,830	0,689				0,399	0,431	

Table 5: Reliability and validity

Until now we have established convergent validity. This means that all measures of HR flexibility and work flexibility correlates positively with the alternative indicators of their constructs. We decide to keep 18.2. and 19.6. as indicators even though their values are respectively 0.630 and 0.698, and under the threshold of 0.708 (convergent validity column A, table 5). Deleting these indicators did not make significant changes to the validity.

Next, we must find internal consistency reliability. Usually, Cronbach's alpha is used to estimate the reliability of intercorrelations. As this method assumes that all indicators are equally reliable, which they are not, we use composite reliability as a measure. The latter method is more technically appropriate (Hair et al., 2014, p. 111-112). Nevertheless, both are interpreted equally. Cronbach alpha and composite reliability should range from 0.6 to 0.7 to arrive at satisfactory results, and from 0.7 to 0.9 to arrive at acceptable results. As we can see in the table 5, the composite reliability of HR flexibility and work flexibility is well above 0.9, which means that all indicators measure the same aspects. Even though the constructs have exceeded the recommended threshold of 0.9, we were expecting this to happen as the indicators were measuring *flexible work arrangements* which is reflective. If we were to include HR flexibility indicators in the work flexibility construct, the composite reliability would have been

lower, i.e., within the range from 0.6 to 0.9, because HR flexibility measures the *flexibility of human resource practices*.

Next, we check for discriminant validity, to find if a construct is truly distinct from other constructs. This can be conducted by calculating the indicators outer loadings and subtracting the cross-loadings. If the value is positive, discriminant validity is established.

Also, we check VIF-values to see if there are indirect effects in the measurement model. This is done by making a dummy-variable and testing all other variables against this dependent variable. The values should not be more than 3.3. We can claim that this model has no common method variance issues, as all values of VIF are below 3.3 (Kock, 2015, p. 7).

Below 3.3	Company Age	Number of Employees	Industry	HR flexibility	Generic flexibility	Schedule flexibility	Project intensity
Random variable	1.045	1.112	1.095	1.207	1.287	1.329	1.213

Table 6: VIF-test

Finally, we check the *Heterotrait-monotrait ratio (HTMT) – Matrix* to see if any values include the number of 1. As none of the values include this number, we have evidence to conclude that the research model is both reliable and valid (Hair et al., 2014, p. 132). In the subsequent section, we are going to assess the PLS-SEM structural model results.

3.3.6. Further selections concerning the structural model

The path coefficient for the links in our model and the coefficient of determination (R^2) of our dependent variable (Y), are provided by the structural model. These findings will be presented in section 5. Based on the outcomes of the PLS algorithm, bootstrapping technique and the blindfolding procedure, this evaluation was conducted. Bootstrapping is a resampling technique, which we used to assess the statistical significance of the model coefficients (Hall & Martin, 1988).

To avoid wrong assumptions about our hypothesis, we need to be aware of two types of errors. The likelihood of rejecting the null hypothesis when it is true is known as the Type I mistake (Banerjee et al., 2009). The likelihood of failing to reject the null hypothesis given that the

alternative hypothesis is true is known as the Type II error. The significance level, also known as the probability of alpha errors, is decided by the researcher. This likelihood has an inverse relationship with the beta errors. About the selection of procedures, we complied with the recommendation of Hair et al. (2014). As we also want to run the PLS-SEM analysis with the control variables I, E, and A (figure 3), we must conduct a two-tailed test.

3.3.7. Advanced PLS-SEM analyses

To investigate the H_2 and H_3 hypothesis, we will cover some more complex PLS-SEM analytic issues in this part of the analysis. By using PLS Multi Group Analysis (PLS-MGA), we will investigate our presumptive control variables, industry (I), age (A) and company size (E), as well as the mediating effect of HR flexibility (Z) (Hair et al., 2017). To do the analysis we had to run the PLS-SEM algorithm as well as a PLS-MGA bootstrapping method to further analyse the controlling effects of the different groups. This analysis will give us the answer on how the control variables will impact the relationship between X and Y variables. The full analysis and results will be shown in part 5.

To summarize this section, we have gone through our methodology, as well as our data collection for our research. Next, we will show the representation of respondents, analysis, and results from our study in the coming sections.

4. Data representation and findings

In this section, we will describe, discuss, and present the results of our survey. First, we go through descriptives regarding the respondents, followed by the analysis conducted by using PLS-SEM and PLS-MGA methods. In section 4.1. we go through the respondent descriptives, in part 4.2. we present the findings regarding projectification, and lastly, we describe the responses regarding work flexibility.

4.1. Sample representation

Before conducting the PLS-SEM analysis, we present descriptives among respondents in our survey. In addition, we provide the reader with information about how each group was separated within our control variables.

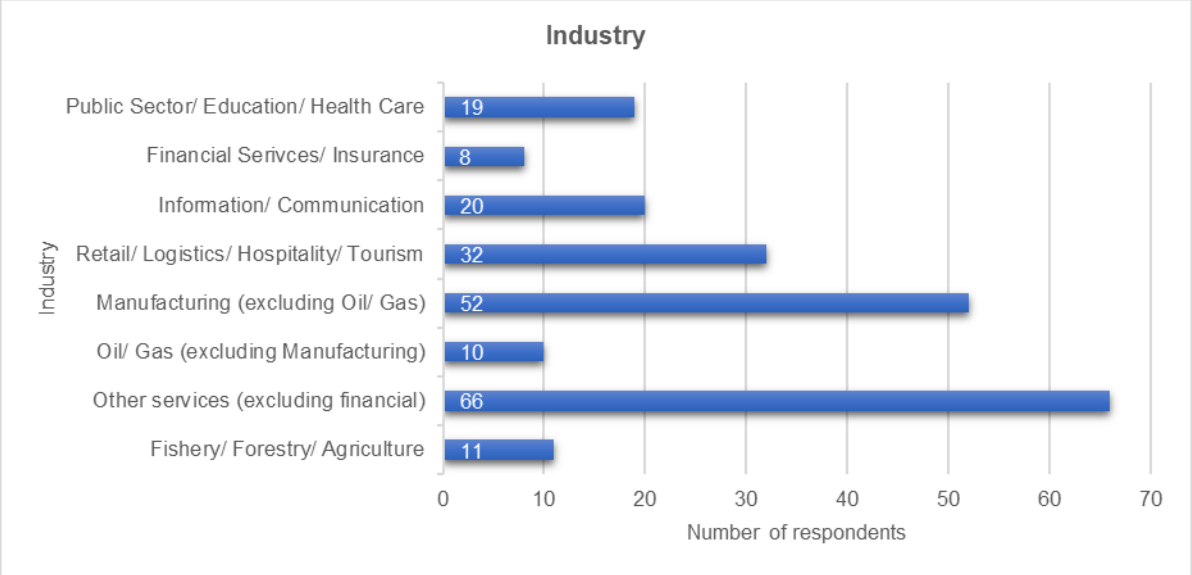

Figure 4: Number of respondents per industry

Figure 4 shows the overall distribution among responding industries, where the overall number of respondents was 218. From the figure, we observe that *other services* were the biggest group of 66 respondents. The second largest group that participated was manufacturing companies, as well as retail and logistics companies which had 52 and 32 participants, respectively. We coded fishery, oil/gas, and manufacturing as being group 1 and all other industries as group 0, as shown in figure 5 below.

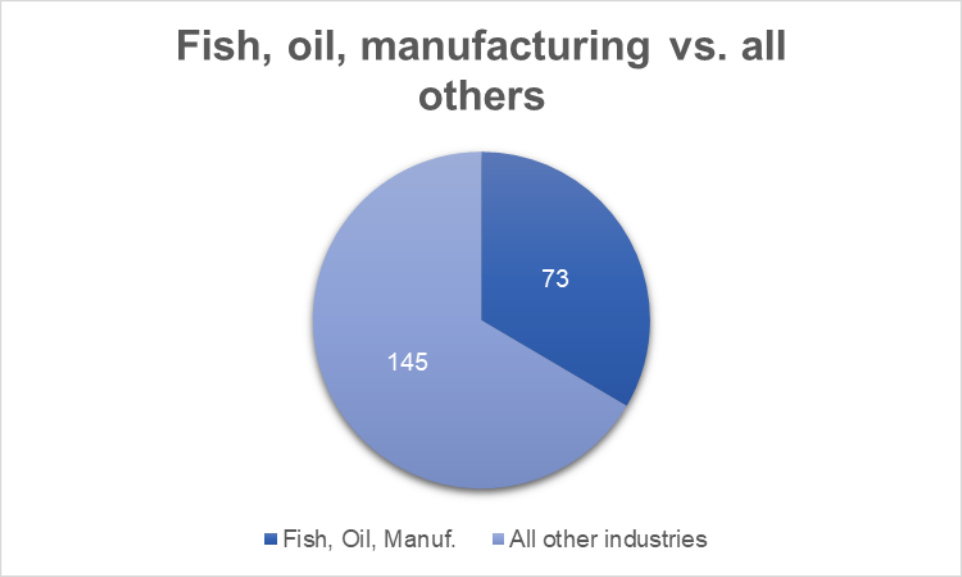

Figure 5: Manufacturing vs. all other industries

Differences in frequency of response between group 0 and 1 are illustrated with figure 5, where we divided the respondents into two groups. Group 1 consists of 73 respondents from manufacturing, fishery/forestry/agriculture, and oil/gas, whereas group 0 consists of 145 respondents from all other industries. The groups are analysed further to see if there are any significant differences among these groups, through bootstrapping the PLS-MGA. This differs to show whether the control variable itself is significant in the PLS-SEM bootstrap.

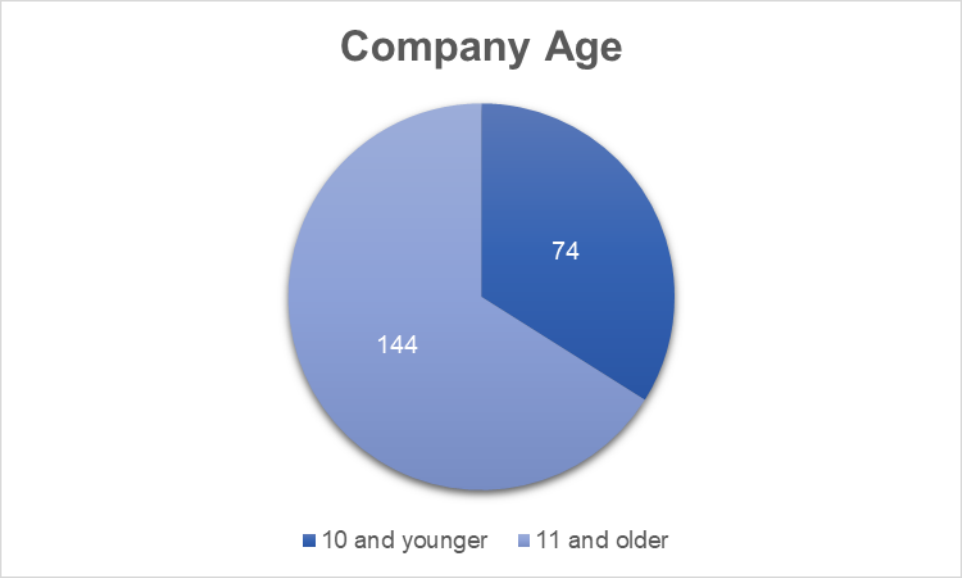

Figure 6: Young vs. old companies

Further, we define “young” companies to be 10 years or younger and “old” companies to be 11 years or older (Wagner, 2004). Our sample consists of mostly older companies and only approximately one third of the respondents where from younger companies.

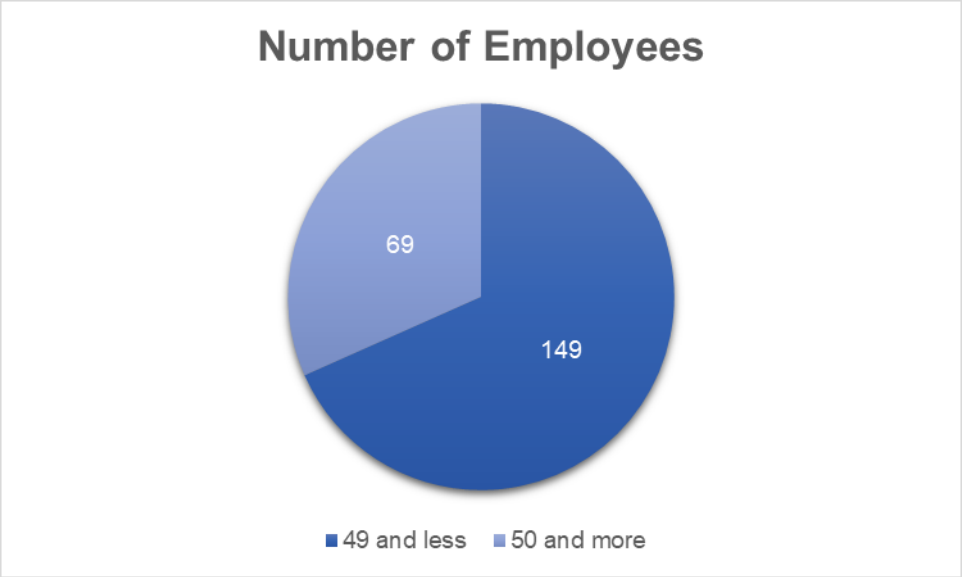

Figure 7: Small vs. large companies

Furthermore, we decided to divide our sample into small and big companies by looking at the number of employees. Small companies are defined by a maximum of 49 employees and companies with more than 50 employees are large in our sample. Figure 7 shows that the respondents were a lot of smaller companies. This result was natural considering that Norway consists of less big companies (Statistics Norway, 2023). Additionally, it was expected that there would be more smaller companies responding to our questionnaire, as shown by table 7 below.

Year 2022	Organizations #	Percent
All size groups	629 953	100,0 %
0 employees	423 839	67,3 %
1-4 employees	102 862	16,3 %
5-9 employees	41 109	6,5 %
10-19 employees	30 229	4,8 %
20-49 employees	21 516	3,4 %
50-99 employees	6 595	1,0 %
100-249 employees	2 915	0,5 %
250 employees and above	888	0,1 %

Source: SSB, n.d.a

Table 7: Number of organizations within different employee intervals

In summary, we are going to investigate whether industry, company age, and number of employees has a controlling effect on work flexibility, as previous research has implied that these might yield interesting significant effects. Findings will be presented in section 5. Next, we present which project types that are mostly conducted among the different industries.

		Internal					External	
GDP weights		**ORG/HR**	**IT**	**R&D**	**M&Sales**	**Infrastruct.**	**Commis.**	**Sum**
25,1 %	Other services…	15,6 %	16,4 %	16,2 %	15,8 %	11,5 %	24,6 %	*100 %*
4,5 %	Financial serivces…	18,6 %	21,9 %	12,5 %	16,3 %	13,0 %	17,6 %	*100 %*
1,8 %	Fishery…	13,1 %	15,9 %	24,7 %	9,6 %	14,5 %	22,2 %	*100 %*
4,3 %	Information…	11,4 %	16,2 %	19,6 %	16,6 %	13,4 %	22,9 %	*100 %*
21,6 %	Public sector…	17,3 %	15,7 %	14,9 %	13,1 %	20,4 %	18,7 %	*100 %*
24,3 %	Oil/ Gas…	8,7 %	14,7 %	19,6 %	14,0 %	12,1 %	31,0 %	*100 %*
6,4 %	Manufactu-ring…	16,7 %	16,1 %	15,4 %	15,9 %	12,5 %	23,4 %	*100 %*
11,9 %	Retail…	16,6 %	19,4 %	13,8 %	20,8 %	14,2 %	15,1 %	*100 %*
100 %	Weighted total	**14,4 %**	**16,4 %**	**16,5 %**	**15,3 %**	**14,1 %**	**23,2 %**	*100 %*

Table 8: Different project types (unweighted). Totals are weighted against GDP contribution per industry.

Table 8 shows the distribution between project types across industries. The project types are divided into internal and external projects, depending on if the project is done inhouse or externally. From the table, we observe that financial services and insurance companies conduct more organizational and HR-projects than any other industry, which might be due to having relatively more employees than other industries. For instance, in comparison with fishery and agricultural industry, this might be due to the assumption that the former employs rather more people which need to be coordinated in terms of company culture than the latter. The same pattern and assumptions might hold for IT-projects. Furthermore, we see that the weighted total of R&D projects is conducted the most among all project types. Fishery and agricultural industry do the most R&D among our respondents, whereas financial services and insurance companies do the least R&D. In addition, sales projects are mostly conducted by retail, logistics, hospitality, and tourism industry, as could be expected, in comparison to fishery and agricultural industry. Infrastructure projects are mostly done in public sector, education, and health care, and the least in fishery, forestry, and agriculture. Lastly, we see that oil and gas conduct the most projects related to externals in comparison with retail, logistics, hospitality, and tourism that do this the least. This might be due to the assumption that oil companies are more prone to develop products and services that are used by customers, whereas fish, forestry, and agriculture might develop products that are mostly used by themselves.

4.2. Findings on projectification

In the following section we show results regarding question 8, which considers the degree of projectification among respondents in 2022. As the respondents consists of individual companies, we must weight these by using GDP weights to arrive at the degree of projectification on the country level in Norway so that it is comparable to other countries.

	Industry								
	Fishery…	Other services…	Oil/ Gas…	Manufactu-ring…	Retail…	Information …	Financial serivces...	Public sector…	#
Respondents	11	66	10	52	32	20	8	19	218
2022	17,8 %	48,4 %	54,7 %	48,6 %	19,9 %	55,6 %	22,4 %	12,4 %	35 %
GDP weights	1,8 %	25,1 %	24,3 %	6,4 %	11,9 %	4,3 %	4,5 %	21,6 %	100 %
2022 weighted	*0,3 %*	*12,1 %*	*13,3 %*	*3,1 %*	*2,4 %*	*2,4 %*	*1,0 %*	*2,7 %*	**37,3 %**
2017 weighted	*0,1 %*	*10,9 %*	*12,7 %*	*2,7 %*	*1,7 %*	*2,2 %*	*0,6 %*	*2,5 %*	**33,4 %**
2027 weighted	*0,3 %*	*12,7 %*	*15,3 %*	*3,0 %*	*2,7 %*	*2,5 %*	*0,6 %*	*2,9 %*	**39,9 %**

Table 9: Weighting the industries, question 8 regarding the degree of projectification.

In the table above, we see that respondents among different industries have dissimilar averages in terms of the degree of projectification. We introduce the weights to arrive at a measure that considers the contribution on GDP per NOK million. For instance, we see that fishery, forestry, and agriculture becomes relatively small in comparison with oil and gas, because the latter contributes more to GDP than the former. The sum of averages equals 37.3%, which is the degree of projectification in Norway in 2022. This is higher than earlier results stating that the degree of projectification in Germany was 34.7%, 32.6% in Norway and 27.7% in Iceland (Schoper et al., 2018).

Question 8.1.	0-14,3	14,3-28,6	28,6-42,9	42,9-57,1	57,1-71,4	71,4-85,7	85,7-100	Total
Likert scale	1	2	3	4	5	6	7	
Number of respondents	84	27	16	14	17	21	39	218

Table 10: Likert Scale intervals of responses regarding to which degree the business conducts project work as of 2022.

Table 10 is showing the distribution from question 8.1 regarding the degree of project work conducted by Norwegian companies in 2022. The total number of answers was 218, where 84 responded that they had a low degree of project work in 2022. Nevertheless, there is a sufficient number of industries responding that they have a medium to high degree of project work. From the table we might assume that there is a low risk of nonresponse errors. This may be assumed due to companies with a low degree (0-14.3%) of projectification has contributed to our research.

Industry									
	Fishery…	Other services…	Oil/ Gas…	Manufactu-ring…	Retail…	Information …	Financial serivces...	Public sector…	#
Respondents	11	66	10	52	32	20	8	19	218
External weighted	*0,0 %*	*12,3 %*	*11,5 %*	*2,7 %*	*2,1 %*	*2,3 %*	*0,6 %*	*2,0 %*	**33,5 %**

Table 11: Regarding the degree of external projects, weighted among industries.

Table 11 is showing the percentage degree of how much revenue were generated through external projects. The total average is weighted by the different industries share of GDP. By looking at the table, there are two industries clearly sticking out compared to the rest regarding generated revenues. Table 11 shows that the degree of external project is lowest for the fishery, forestry, and agriculture industry, whereas it is the highest for the oil and gas industry. This means that most of the projects in the latter industry is conducting more external projects in comparison with the former.

Both oil/gas and information/communication contribute to a higher degree of projectification in terms of weighted numbers for 2022. Compared to the other industries like fishery and retail with a low degree of projectification, this is an expected outcome. Project work is a substantial part in oil/gas and information/communication businesses, with whole departments is dedicated specifically for doing projects. In comparison, some of the other industries might have a lower need for projects as the line of work is not dependent on continuously doing projects and finding new solutions. For instance, the retail industry is more focused on continuous sales to their consumers.

4.3. Findings on work flexibility

In the following section, we show descriptive results regarding measure 10, 17, 18 and 19, which considers the scales regarding project intensity, HR, generic and schedule flexibility, respectively.

4.3.1. Manufacturing vs. all other industries

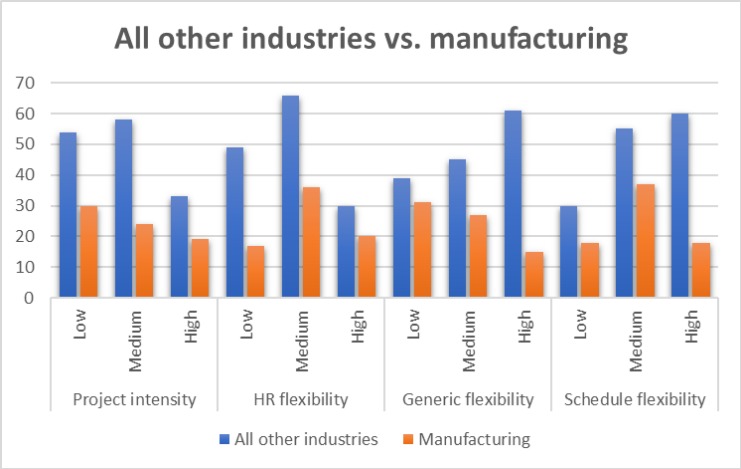

Figure 8: Distribution among industry

From figure 8 we see the distribution among respondents from manufacturing and all other industries. As mentioned earlier, we have divided between all other industries and manufacturing businesses to get a better overview of the analysis. Among the respondents, we see that the majority are from industries other than manufacturing companies. Furthermore, all other industries indicates that they have a relatively higher degree of generic flexibility and schedule flexibility. More interesting, manufacturing industries does not go opposite of service, which might mean that the difference among the two groups is small. This is however investigated through PLS-MGA analysis in section 5.

4.3.2. Small vs. large companies

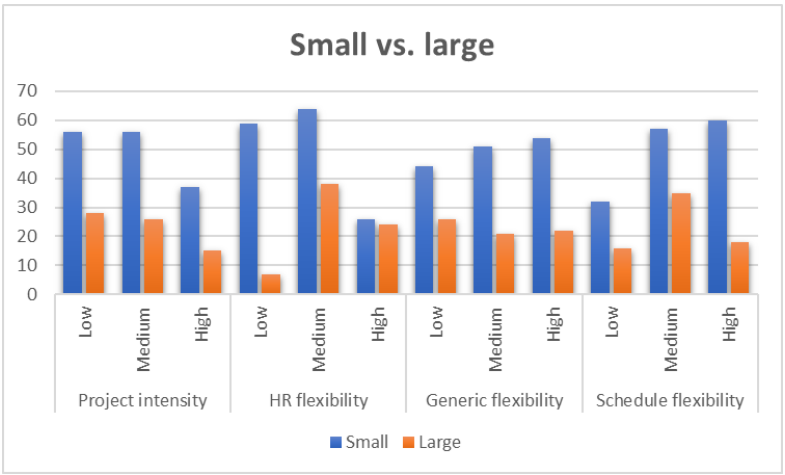

Figure 9: Distribution among company size

From figure 9 we see the distribution depending on the size of the company and its level of work flexibility. In general, we see that there are many small companies participating in the study. The tendency is also that there is a medium level of work flexibility for both small and large companies. Regarding small companies, the highest degree of flexibility is through schedule flexibility. HR flexibility has received a slightly higher score compared to the other variables and the highest score at the medium level, for large businesses.

4.3.3. Young vs. old companies

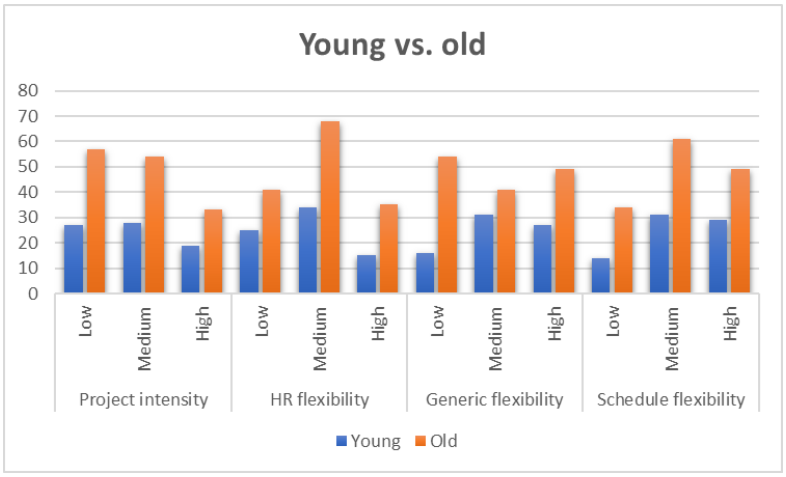

Figure 10: Distribution among company age

Lastly, we are looking at the distribution regarding company age. In general, we see that there are many participants from “old” companies which were defined as 11 years and older. This was expected as one might assume that there are relatively fewer companies in the “young” category that are 10 years and younger. In this figure we can also indicate that there is a generally medium level of flexibility for both old and young companies. Nevertheless, we can roughly see that there is a slightly higher mean for the older companies. In other words, that these might have a higher degree of flexibility.

5. Results PLS-SEM analysis

In this section, we will show the results of our research model after conducting the PLS-SEM algorithm. We will also be using the advanced PLS-MGA analysis to check for controlling effects, followed by checking for mediating effects. By doing this we will be able to analyse the results for all our hypotheses.

5.1. PLS-SEM in relation to the primary hypotheses

As of now, we have found evidence that the research model is reliable and valid, as well as there is no common method variance. Next, we conduct the PLS-SEM algorithm and PLS-SEM bootstrapping method to arrive at the results for figure 11, as described by Hair et al. (2014, p. 73). The analysis is performed in SmartPLS4. The settings involved in bootstrapping the research model includes processing 10 000 subsamples, which means that randomly drawn observations are created from the original dataset (Ringle et al., 2022). For all of our hypothesis, we conduct two-tailed tests with 0.05 significance level to find whether there are positive and/or negative relationships between the variables that can reject the null-hypothesis with 95% confidence.

We must address possible collinearity issues before we can describe findings in the inner model (Hair et al., 2014, p. 191-194). This is done by conducting the PLS-SEM analysis, and then investigating whether VIF-values are above 5. If the values are above, there is a collinearity problem, meaning that there is correlation between the independent variables. There are no VIF-values above 5, indicating no collinearity problems in our model.

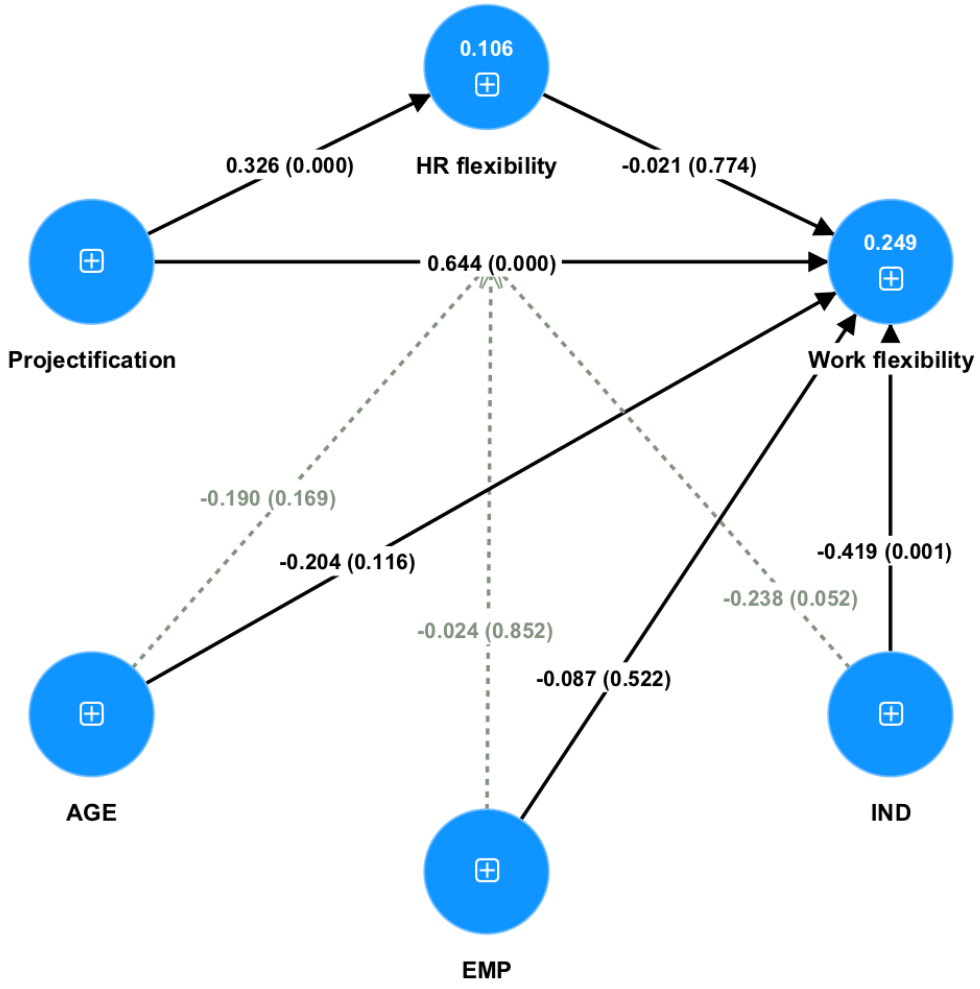

Figure 11: Structural model

From figure 11, we find several interesting values from the PLS-SEM bootstrapping algorithm that have implications on our main hypothesis. We observe that the path coefficients are shown to the left of the p-values, which are inside the parentheses. Also, R^2 values are included in the blue circles. Values under 0.25 are considered as weak, whereas values of 0.5 and 0.75 are considered as moderate or substantial (Hair et al., 2014, p. 175). In this case, the R^2 between X and Y of 0.249 is considered as weak. Hair et al. (2014, p. 195-197) further states that a significant path coefficient indicates whether the projectification construct is associated with the work flexibility construct with 95% confidence. In our case, the p-value is 0.000, which means that the relationship is statistically significant. Lastly, the path coefficient is positive, meaning that there is a corresponding relationship between the degree of projectification and work flexibility, as the coefficient is 0.644.

Total effects	HR flexibility	Work Flexibility	P-value	Significant?
Industry		-0,419	0,001	Yes
Number of Employees		-0,087	0,522	No
Age		-0,204	0,116	No
HR flexibility		-0,021	0,774	No
Projectification		0,644	0,000	Yes
Projectification	0,326		0,000	Yes

Table 12: Path coefficients and p-values

In table 12, we find a positive and significant relationship between the projectification and work flexibility. This effect explains that a high projectification in a business will correlate with the opportunity for employees to have flexible work arrangements. The same can be said about the relation between projectification and HR flexibility. From the table, we see that there is a significant and positive effect between having a high level of project work and having HR flexibility. We also find interesting implications regarding industry, number of employees, and age. Industry has a significant controlling effect on work flexibility, meaning that the industry type most likely will have a significant effect on the degree of work flexibility at a 0.05 significance level. Regarding the number of employees, we see that there is a positive effect on having many employees. Even though there is a positive correlation between number of employees and the degree of work flexibility, the effect is not significant.

The conclusion is the same for the last of the control variables, regarding age of the company. There is a positive effect on older companies having a higher degree of work flexibility, but the effect is not significant in this case due to a high p-value. In addition to the three control variables, we examine one mediating variable regarding HR flexibility. The effect between HR flexibility and work flexibility is positive, but not significant due to a high p-value.

According to Hair et al. (2014, p. 199), R^2 values ranges from 0 to 1. This means that higher levels of R^2 indicate higher levels of predictive accuracy, i.e., that projectification explains work flexibility very well. In this case, we find a weak predictive ability between the exogenous projectification latent independent variable and the endogenous work flexibility latent dependent variable. In summary, we might state that the degree of projectification has a positive, statistically significant, and weak relationship with work flexibility.

Through our analysis we find a statistically significant and positive relationship between projectification and work flexibility, even though this relationship is considered weak. This

means that we can reject our null hypothesis that projectification (X) has no statistically significant effect on work flexibility (Y). Therefore, the null hypothesis is rejected with a 95% confidence level. In other words, if companies have high projectification, they likely also have a high degree of work flexibility.

5.2. PLS-MGA, controlling effects

In this part of the analysis, we will check if there are any significant effects within our control variables. To further investigate the mediating and controlling effects, we need to use the advanced PLS-MGA method. First, we want to show the analysis from the controlling effects of size, age, and industry. Second, we want to present findings regarding the mediating effects of HR flexibility.

5.2.1. Size as a control variable

	Number of employees	
	Path co.	R2-value
Large	0,4	0,16
Small	0,463	0,214

	Number of employees	
	Path co.	p-value
Large	0,400	0,001
Small	0,463	0,000
Differences	0,063	0,570

Table 13: Size as a control variable

Table 13 illustrates how the number of employees in a company have a positive effect on the relationship between projectification and work flexibility, as a control factor. The multigroup analysis was conducted by sorting small and large companies into different groups to check if there was a significant difference between the groups. The R^2 value is low for both small and large companies, but slightly higher for small companies. The same can be said for the path coefficient that is higher for small companies.

When comparing the absolute difference between large and small companies, we find that the difference in path coefficient is 0.063. This suggests that the difference between the group specific path models is small. The absolute difference in the p-value between large and small companies is 0.570. This p-value does not fall in between the line of what can be seen as significant, and therefore the difference between large and small companies is not significant in our study.

5.2.2. Company age as a control variable

	Age of the company	
	Path co.	R2-value
Old	0,377	0,142
Young	0,542	0,294

	Age of the company	
	Path co.	p-value
Old	0,377	0,000
Young	0,542	0,000
Differences	0,165	0,108

Table 14: Age as a control variable

Table 14 is showing the relationship between the two groups of age as the controlling factor. In this multigroup analysis we sorted out the old and young companies, by looking at the total age of 10 and younger (young), and 11 and older (old). The R^2 value of both old and young companies is small. The predictive factor of young companies is slightly higher than the older companies but is still considered as small.

Looking at the path coefficients for the group specific analysis, we see that the difference between the path model estimations is small. The difference in p-values for the two groups is not significant. The absolute difference in p-value is 0.108, which is too high to be considered as significant, at the lower limit of 0.05 and under the upper limit of 0.95.

5.2.3. Industry as a control variable

	Industry	
	Path co.	R2-value
Manufacturing	0,366	0,134
All other	0,494	0,244

	Industry	
	Path co.	p-value
Manufacturing	0,366	0,000
Service	0,494	0,000
Differences	0,128	0,207

Table 15: Industry as a control variable

Lastly, table 15 show the controlling effects between industry groups. The industries were sorted by looking at companies in the manufacturing industry and all other industries. The predictive factor of the R^2 value is considered weak for both manufacturing (0.134) and other industries (0.244). The same can be said about the path coefficient with 0.128 in absolute difference. Additionally, the p-value is over the limit of 0.05 and is not considered to be significant. From our PLS-MGA analysis regarding the controlling factors we found that there

was no significant difference between any of our groups. Therefore, we can conclude that there are no significant controlling effects regarding size and age at a 95% confidence level.

On the other hand, we have found that industry has a significant controlling effect on the relationship between projectification and work flexibility. At the same time, the difference between the two groups of industries is too high to be considered having a significant group-specific effect. The conclusion is that there is a statistically significant controlling effect of industry at a 95% confidence level, but there is no significant difference between the groups of manufacturing and all other services.

5.3. HR flexibility as a mediating variable

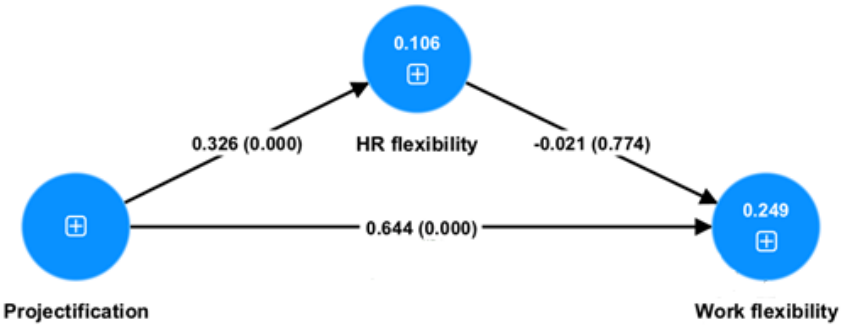

Figure 12: HR flexibility as a mediating variable

In addition to measure for controlling effects we wanted to see if there were any mediating effects of HR flexibility. Looking at the direct effect between projectification and HR flexibility we see that there is a weak but positive effect on the path coefficient. This effect is also significant at a 95% confidence level, as the p-value is under 0.05. This means that we can reject the null hypothesis, regarding projectification not having a significant effect on HR flexibility (H_2). However, there is an insignificant relationship between HR flexibility and work flexibility. The objective with this hypothesis were to check if there was any effect on our independent and dependent variable by adding HR flexibility as a mediator. Although the effects are weakly positive, the direct mediating effect is not significant for both variables. According to Zhao et al. (2010, p. 198), the mediating effect is strongest when there is only an indirect effect and no direct effects, also called "full mediation". When there is both indirect and direct effects it is called "partial mediation". In our analysis the mediating effect is neither full nor partial as indirect effects are insignificant, with a p-value for the total indirect effects

of 0.783. Therefore, we conclude that there is no mediating effect of HR flexibility on the relationship between projectification and work flexibility, as shown in the table below.

Total indirect effects					
	Original sample	Sample mean	Standard deviation	T stat.	P values
Projectification on work flexibility	-0.007	-0.007	0.025	0.275	0.783

Table 16: Total indirect effects

5.4. Summary of hypothesis

To investigate the relationship between projectification (X) and work flexibility (Y), we had the following primary and alternative hypotheses:

H_1: The degree of projectification has a significant relationship with work flexibility.

H_0: There is no significant relationship between a firm's degree of projectification and its work flexibility.

As the path coefficient is 0.644, p-value is 0.000, and R^2 is 0.249, we find support for our alternative hypothesis (H_1), meaning that there is a positive, statistically significant, but weak relationship between projectification and work flexibility. H_1 is therefore supported, and H_0 is rejected at a 95% confidence level.

H_2: The degree of projectification has a significant relationship with HR flexibility.

H_3: HR flexibility has a significant relationship with work flexibility.

In our model we find that there is a significant and positive, yet weak relationship between projectification and HR flexibility with a p-value of 0.000 and path coefficient of 0.326. H_2 is supported at a 95% confidence level. On the other hand, there is not a significant relationship between HR flexibility and work flexibility, with a p-value of 0.774. Therefore, we cannot accept H_3. As we are not able to find a significant relationship between HR flexibility and work flexibility, we can conclude that there is no mediating effect of HR flexibility.

6. Concluding remarks

In this section, discussions and conclusions on our results will be presented in relation to the theoretical framework in section 2. First, we will present a discussion of the thesis, as well as comparisons with prior studies. Second, we conclude our thesis by summing up the results and findings. Lastly, we will go through our contribution and limitations for the study.

6.1. Discussion

The results in our thesis are comparable with several previous studies within projectification and work flexibility research. More specific, we have arrived at results that are comparable regarding project type, degree of projectification, project intensity, HR flexibility, generic flexibility, schedule flexibility, and control effects.

When it comes to the project types (table 9), we see that the results are almost identical in relation to previous studies (Schoper et al., 2018, p. 77). The differences are plus/minus one percent revolving the degree of conducting projects that focus on research and development, marketing and sales, and commissioned projects for the year 2014. Our findings are uplifting because we can argue that our sampling population is similar with other research on projectification such as the aforementioned Schoper et al. (2018). We might therefore say that the similarities strengthen our thesis in terms of generalizability. In terms of comparing our results with the researchers, we might state that the covid-pandemic has not changed the focus regarding which project types that are conducted more or less among different industries.

Next, we consider the degree of projectification as a percentage of total work time. For 2022 the findings are 37.3%, which is 3.5% higher than previously estimated for 2019/2020 considering the Norwegian economy (Schoper et al. 2018, p. 78-79). The degree of projectification therefore sits in between 2019/2020-estimations of Germany (41.3%) and Iceland (31.5%). As a result, we might argue that the degree of projectification in Norway follows a more linear trend than previously estimated and illustrated by the researchers. We estimate that the projectification in Norway will be around 39.3% by 2027. Other services stand out as being one of two (the other is oil/gas industry) industries which has a relatively higher degree of projectification than comparable industries. This uncertainty corresponds with Schoper et al. (2018) who state that subsections within this category should be investigated further to see where there is the most projectification. The increased degree of projectification

is expected on behalf of studies showing that the level of projectification in businesses is increasing in general (Bechky, 2006; Packendorff & Lindgren, 2014).

In pair with increased degree of projectification, researchers also assume that work flexibility is increasing (Allvin et al., 2013). Flexible work arrangements might contribute towards suiting individual needs and preferences, for example by adjusting the time, location, and/or nature of work (Prem et al., 2021). This introduces the possibility of varying the organizing of projects, and for instance including participants such as freelancers (Jarrahi et al., 2021). Further, one assumes that the nature of project-based work introduces the possibility of being flexible, such as incorporating flexible working arrangements when solving complex problems (Wald et al., 2015; Hunter, 2019; Nuhn & Wald, 2016). In this regard, we find that there is a positive correlation between projectification (project intensity) and work flexibility. Consequently, the previous assumptions are supported by our empirical results. This suggests that business with high or low degree of project work have a corresponding degree of flexible work arrangements in Norwegian businesses. We might argue that businesses practice projects to the similar extent that they practice generic and schedule flexibility.

Development towards increased work flexibility in a project-based contexts might be due to accessible digital solutions (Hunter, 2019, p.1-4). The covid-pandemic may also have contributed to a shift in the usage of work flexibility in project-based working forms. This can be due to increased digital competencies, but also management willingness to give employees freedom on how to conduct work when employees were disallowed to organize in person (Amankwah-Amoah et al., 2021; Franken et al., 2021; Dizaho et al., 2017). Indeed, research find that flexible working arrangements has a positive effect on employee performance (Altindag & Siller, 2014; Chatterjee et al., 2022). This holds especially well for best-performing employees such as freelancers or experienced workers, in contrast to inexperienced workers and co-workers that need support (Van der Lippe & Lippényi, 2020; Jarrahi et al., 2021).

Also, as projects consists of group experts solving complex problems, flexibility enhances the quality or productivity, and autonomy of the project-based working forms (Hunter, 2019; Nuhn & Wald, 2016). Furthermore, the findings build empirically on the work of Wang (2001, p. 5), stating that flexibility is considered as one of many dimensions of project management culture. In a broader sense, we might view this evidence as a sign on changing organizational

configurations, meaning that outsourcing project work among freelancers through Fiverr and Upwork might be a new way of conducting projects (Jarrahi et al., 2021).

Considering work flexibility, our findings are supported by several researchers stating that work flexibility is increasing in general (Alvin et al., 2013; Volberda 1998, p. 1; Kelliher et al., 2019, p. 1). Our findings on generic and schedule flexibility are in line with Prem et al. (2021, p. 28), where we see a trend that businesses allow employees more freedom to have control over their own schedule and where to work. This statement holds true for our findings regarding all other industries, containing financial services, information & communication, public sector, retail, and other services. These industries are showing a relatively higher degree of willingness to provide both generic and schedule flexibility than in comparison with manufacturing industries. However, we note that these differences are not significant in pair with projectification. Further, we observe that employees are able to decide when to work and having control over their own schedule (Hill et al., 2010, p. 349-356). This further implies that the combination of schedule and generic flexibility will contribute to increase the general wellbeing of employees.

Overall, we have found a higher degree of work flexibility for the private sector. Compared to our results for the public sector, our research finds support to the study of Kossek & Lautsch (2018, p. 5-36) stating that the public sector for a long time has lagged in the incorporation of work flexibility. Nevertheless, we have found support that the level of work flexibility in the public sector has increased, which supports the statements by Kelliher et al. (2019, p. 2). Due to covid-pandemic as well as competitiveness, the public sector has found it necessary and increasingly important to incorporate more flexible working arrangements to attract and retain employees.

De la Lastra et al. (2014) implied that HR flexibility can lead to ambidextrous ways of organizing projects. We do not find neither partial nor full mediation effect when investigating direct and indirect effects. As a result, we cannot state that HR flexibility works as a mediator on the relationship with work flexibility. Consequently, our results are against the researcher's implications regarding using HR flexibility as a mediator on work flexibility.

We can conclude that the controlling effect of industry has a significant effect at a 95% confidence level, supporting previous research such as Bechky (2006). Furthermore, we find

support in Maxwell et al. (2007) finding that industry is a significant control variable. This builds on Wald et al. (2015) which states that project-based organizations are found in a wide range of industries, including consulting and professional service. For many of these industries, project-based organizations are employed to meet the highly differentiated demand and customized nature of demand, where clients frequently interact with project organizers over products and services (Hobday, 1998). But also from the employee perspective, various industries are offering flexibility to retain employees, increase recruiting, enhance loyalty, and commitment (Maxwell et al., 2007). However, we do not find significant difference regarding the effect of industry as a control variable, partly due to the aggregation of too many firms within the two groups. Thus, we find support in Schoper et al. (2018), who recommends industry divisions to include more subsections.

Furthermore, we do not find any significant effects for either size or age, which supports the previous researchers (Schoper et al., 2018, p. 77). In terms of projectification, our study builds on the findings of Midler (1995) Keegan and Turner (2002), stating that "firms in all industries are undertaking project as a growing part of their operations". More generally, the research model and method extend and compliments the previous research conducted by Wald et al. (2015), Schoper et al. (2018), and Spanuth et al. (2020). In our view, using PLS-SEM and PLS-MGA fits the purpose of finding the degree to which hard-to-observe phenomena and concepts relate to each other.

6.2. Conclusion

To conclude, projectification (project intensity) has a statistically positive significant relationship with flexible working arrangements on a company level in Norway. This relationship is by scholars considered as being weak. Additionally, there is a statistically significant control effect of industry at a 95% confidence level. On the contrary, we were not able to find a significant difference between manufacturing and all other industries. Furthermore, there is no significant control, mediating, or group-specific effects in this relationship when it comes to *human resource practices* (HR flexibility), company age, or number of employees. Additionally, our respondents estimate that projectification is expected to increase from 2022 to 2027. In pair with the notion of work flexibility, this has several implications related to management of flexible working conditions, for example how to ensure project control and progress, as well as project success when working in decentralized contexts.

6.3. Contribution to the research

Through our research, we have contributed to update the study to which degree there is projectification on the country level in Norway in 2022, as well as estimations regarding future degree of projectification. This number is weighted against GDP and is therefore applicable when it comes to comparing with other countries. Also, we have found that there is a relationship between projectification and work flexibility that is considered as positive and significant albeit weak. This implies that there is a positive correlation between high projectification and high work flexibility.

Our finding regarding work flexibility builds on the study of several researchers (Allvin, 2013; Volberda, 1998; Kelliher et al., 2019). These researchers mention that work flexibility increased in general but did not have any empirical findings to state this assumption. Our finding regarding schedule and generic flexibility, i.e., flexible work arrangements, builds on the notions by examining the concept in relation to projectification in a Norwegian context. Thus, we have contributed to research by quantifying and finding results among Norwegian businesses in the public and private sector.

There might be evidence that flexible working arrangements introduces the possibility to organize people and knowledge that before had to cooperate physically. This might mean that businesses now can draw on competencies from business professionals that sit in other countries. For instance, there might be an increase in people that are hired through solutions such as Upwork and Fiverr, who work as consultants or project-participants from home or from anywhere. In this regard, our contribution might therefore include that there may arise new ways of finding and organizing project members from different professional backgrounds.

6.4. Managerial implications

Our results provide managers across different industries in Norway with information on the general level of projectification in their industry. Also, we provide empirical results showing that projectification has a positive correlation with work flexibility.

Managers do not have to consider the number of employees or age of the company as this had no significant results between X and Y. However, we have found that the type of industry will matter as a control variable between the relationship. Depending on the subdivisions within our

industry categorizations, we therefore recommend managers to consider which management control systems they apply, and whether these ensures "best practice" for their specific industrial category. For instance, managers should be aware that investing in flexible working arrangements offer positive sides which is favourable from an employee-perspective regarding work-life balance, but also employee burnout in project contexts (Velasco & Wald, 2022).

Additionally, as projectification also has a positive significant relationship with HR flexibility, managers should be aware of the positive and negative effects regarding flexible human practices. As an example, one could focus organizing project-based work forms in such a that ensures adaption towards overall company strategy such as increased requirements among customers and suppliers.

6.5. Limitations

In this thesis, we were able to gather answers from 218 respondents, whereas Sekaran & Bougie (2016) states that 384 answers contribute to a preferable sample size. Thus, there are certain issues regarding our sample size and generalizability in terms of the country level of projectification. As previous research from Skeibrok & Svensson (2016) had a lower degree of projectification with above 1400 respondents, there might be a case of nonresponse error in our sample which results in a bias. This might contribute to getting responses only from businesses that do work in TO forms, whereas the businesses that have a low degree of projectification are not participating. Therefore, we assume that our results regarding the degree of projectification are somewhat higher than the actual numbers in Norway. On the other hand, we assume that the risk for this problem has been mitigated, as most of the respondents (84) answered that they had a low degree of projectification.

The relatively low number of respondents also had an effect on our control variables. We found that industry as a control variable had a significant effect on in the relation between X and Y. We were on the other hand not able to find a significant effect between the two groups used in the variable, which might have occurred because of including too many industries in group 1 and in group 0. Ideally, we should have gotten 384 respondents from every industry to measure differences among every industry. As we were not able to get the appropriate amount, groups might have become affected.

In terms of getting responses, we first sent out 13 000 emails via SurveyXact systems. This was generally perceived as being a virus link, as we later were contacted by the IT-department at our university. Thus, we instead changed strategy and sent invitations to participants per personal email, by finding emails on various business regions websites and thereafter bulk-mailing with the usage of blind-copy. The latter method gained a substantial number of respondents in comparison to the former method. Thus, a limitation considers the fact that we should have used all group members' personal email to send out the questionnaire in the first place. By doing this, we could have gained more respondents in our questionnaire.

As our questionnaire was sent out from SurveyXact, we could be somewhat more certain of who the participant of our study was. After we changed our strategy, there is a risk that participants were not in our target group, meaning that uninvited participants got the link to our survey and filled out the form, even if they did not represent an individual business. Thus, a limitation considers lacking control of who the respondents were. On the other hand, we controlled the dataset for outliers and suspicious responses, and were not able to find any issues to address in this regard.

Around 15-20 respondents of the survey replied to our personal emails, stating that their businesses did not fit to participating in the survey. The reasons were because their companies for instance were holding companies of stocks or other business-related portfolios. Although these companies presumably had a low degree of projectification and high degree of work flexibility, they did not participate. Even if the relationship between X and Y is significant, there might therefore be limitations regarding these companies not participating in the survey, as they could have proven the opposite, i.e., that there is no significant relationship between projectification and work flexibility.

To get more participants in our study, we could have removed more of the scales in our questionnaire. As a result, there is a likelihood that there would be more respondents, as we could observe that several participants in our study quit the survey on questions that for instance related to project intensity (measure 10, appendix A). On the other hand, we had to use the exact same questionnaire which had been used previously to get comparable results.

Lastly, as the questionnaire was sent to email addresses that targeted management levels in every company, we are not certain that all questionnaires were sent to these levels in the

hierarchy. More specifically, the questionnaire might have been sent to some workers that do not know anything about the degree of project work because they do not have the appropriate data or knowledge to answer these questions. Thus, a limitation involves the lists of emails that were provided by proff.no as well as the lists that we created ourselves by search up individual businesses on various business region websites.

6.6. Suggestions for further research

As we have shown empirically that there is a positive relationship between projectification and work flexibility, there are several research avenues that are interesting to consider.

One research avenue considers whether a firm can manage project development and success for employees that for instance work from home. For instance, ask respondents which factors that should be included in a control system to measure effectiveness and success rates in flexible working forms. In this regard, one might find differences among company level culture or country level culture, for example related to trust and freedom of employees. In terms of freelancers, an interesting avenue might be to find if businesses use these as consultants in projects. One might for instance assume that there are experts who contribute to several different projects in different industries who are not hired by one specific company.

Another interesting avenue might be to investigate how employee motivation is ensured when working from home in projects. In this regard, one might assume that the motivation decreases over time, depending on whether there are differences in personal preferences. Thus, managers might get a better understanding of the importance regarding management of remote-working employees.

Given that one can replicate the same study with another dependent variable (Y), moderating, mediating and/or controlling effects are still interesting to investigate when it comes to projectification. For instance, one could investigate whether there is a positive relationship between projectification and degree of employee compensation and using age or experience as a moderating effect.

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Appendix

A:

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.

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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?

□ Manufacturing	□ Financial Services & Insurance
□ Public Sector / Education / Health Care	□ Other Services (excluding financial)
□ Retail / Transport / Hospitality / Tourism	□ Information / Communication
□ Oil and Gas activity	□ 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	□	□	□	□	□	□	□
Internal: IT-Projects	□	□	□	□	□	□	□

	Not used at all	*Used Very frequently*
Internal: R&D projects / new product development projects	□ □ □ □ □ □ □	
Internal: Marketing projects / sales projects	□ □ □ □ □ □ □	
Internal: Infrastructure projects	□ □ □ □ □ □ □	
External: Commissioned projects	□ □ □ □ □ □ □	

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?

□ Yes □ No

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

□ Yes □ 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	□ □ □ □ □ □ □	
Most of the activities in our firm are conducted within projects	□ □ □ □ □ □ □	
Most of the work in our firm is invested into projects	□ □ □ □ □ □ □	
Much of the work done in our firm is attributable to temporary organizations (TOs)	□ □ □ □ □ □ □	
Temporary work has in general a high importance in our firm	□ □ □ □ □ □ □	

[B.4 PROJECT SUCCESS]

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

	none	*all*
…Time	□ □ □ □ □ □ □	
…Costs / Budget	□ □ □ □ □ □ □	
…Quality	□ □ □ □ □ □ □	
…Stakeholder satisfaction	□ □ □ □ □ □ □	
… In general	□ □ □ □ □ □ □	

[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	□	□	□	□	□	□	□
EBIT (earnings before interest, taxes, depreciation, and amortization)	□	□	□	□	□	□	□
Return (profit) on sales	□	□	□	□	□	□	□
Market share	□	□	□	□	□	□	□
Development of new products and/or services	□	□	□	□	□	□	□
Expenses for R&D	□	□	□	□	□	□	□

C. General settings/personal information

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

□ Management board
□ Controlling
□ Project Management Office (PMO)
□ Other: _____

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

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

18. In our organization …

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

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

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

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	□ □ □ □ □ □ □	
We can quickly scale up or scale down our production/service levels to support fluctuations in demand form the market	□ □ □ □ □ □ □	
We are quick to make appropriate decisions in the face of market changes	□ □ □ □ □ □ □	
We look for ways to reinvent/reengineer our firm to better serve the market	□ □ □ □ □ □ □	

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

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

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

	Not successful	*Very successful*
… integrating internal processes	□ □ □ □ □ □ □	
… integrating across its supply chain	□ □ □ □ □ □ □	
… enhancing business process flexibility	□ □ □ □ □ □ □	
… increasing the speed of product development	□ □ □ □ □ □ □	
… increasing the speed of logistics activities	□ □ □ □ □ □ □	

B: *Statistical Classifications and Code lists*. Retrieved from SSB February 2nd, 2023: https://www.ssb.no/en/klass/klassifikasjoner/6

A - Agriculture, forestry and fishing	50 - Water transport
01 - Crop and animal production, hunting and related service activities	51 - Air transport
02 - Forestry and logging	52 - Warehousing and support activities for transportation
03 - Fishing and aquaculture	53 - Postal and courier activities
B - Mining and quarrying	**I - Accommodation and food service activities**
05 - Mining of coal and lignite	55 - Accommodation
06 - Extraction of crude petroleum and natural gas	56 - Food and beverage service activities
07 - Mining of metal ores	**J - Information and communication**
08 - Other mining and quarrying	58 - Publishing activities
09 - Mining support service activities	59 - Motion picture, video and television programme production, sound recording
C - Manufacturing	60 - Programming and broadcasting activities
10 - Manufacture of food products	61 - Telecommunications
11 - Manufacture of beverages	62 - Computer programming; consultancy and related activities
12 - Manufacture of tobacco products	63 - Information service activities
13 - Manufacture of textiles	**K - Financial and insurance activities**
14 - Manufacture of wearing apparel	64 - Financial service activities, except insurance and pension funding
15 - Manufacture of leather and related products	65 - Insurance, reinsurance and pension funding, except compulsory social security
16 - Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials, except furniture	66 - Activities auxiliary to financial services and insurance activities
17 - Manufacture of paper and paper products	**L - Real estate activities**
18 - Printing and reproduction of recorded media	68 - Real estate activities
19 - Manufacture of coke and refined petroleum products	**M - Professional, scientific and technical activities**
20 - Manufacture of chemicals and chemical products	69 - Legal and accounting activities
21 - Manufacture of basic pharmaceutical products and pharmaceutical	70 - Activities of head offices; management consultancy activities
22 - Manufacture of rubber and plastic products	71 - Architectural and engineering activities; technical testing and analysis
23 - Manufacture of non-metallic mineral products	72 - Scientific research and development
24 - Manufacture of basic metals	73 - Advertising and market research
25 - Manufacture of fabricated metal products, except machinery and	74 - Other professional, scientific and technical activities
26 - Manufacture of computer, electronic and optical products	75 - Veterinary activities
27 - Manufacture of electrical equipment	**N - Administrative and support service activities**
28 - Manufacture of machinery and equipment n.e.c.	77 - Rental and leasing activities
29 - Manufacture of motor vehicles, trailers and semi-trailers	78 - Employment activities
30 - Manufacture of other transport equipment	79 - Travel agency, tour operator and other reservation service and related activities
31 - Manufacture of furniture	80 - Security and investigation activities
32 - Other manufacturing	81 - Services to buildings and landscape activities
33 - Repair and installation of machinery and equipment	82 - Office administrative, office support and other business support activities
D - Electricity, gas, steam and air conditioning supply	**O - Public administration and defence; compulsory social security**
35 - Electricity, gas, steam and air conditioning supply	84 - Public administration and defence; compulsory social security
E - Water supply; sewerage, waste management and remediation	**P - Education**
36 - Water collection, treatment and supply	85 - Education
37 - Sewerage	**Q - Human health and social work activities**
38 - Waste collection, treatment and disposal activities, materials recovery	86 - Human health activities
39 - Remediation activities and other waste management services	87 - Residential care activities
F - Construction	88 - Social work activities without accommodation
41 - Construction of buildings	**R - Arts, entertainment and recreation**
42 - Civil engineering	90 - Creative, arts and entertainment activities
43 - Specialised construction activities	91 - Libraries, archives, museums and other cultural activities
G - Wholesale and retail trade; repair of motor vehicles and motorcycles	92 - Gambling and betting activities
45 - Wholesale and retail trade and repair of motor vehicles and motorcycles	93 - Sports activities and amusement and recreation activities
46 - Wholesale trade, except of motor vehicles and motorcycles	**S - Other service activities**
47 - Retail trade, except of motor vehicles and motorcycles	94 - Activities of membership organisations
H - Transportation and storage	95 - Repair of computers and personal and household goods
49 - Land transport and transport via pipelines	96 - Other personal service activities
	T - Activities of household as employers; undifferentiated goods- and
	97 - Activities of households as employers of domestic personnel
	U - Activities of extraterritorial organisations and bodies
	99 - Activities of extraterritorial organisations and bodies

C: SIKT study approval.

Sikt

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

Vurdering av behandling av personopplysninger

Referansenummer	Vurderingstype	Dato
293240	Standard	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!

D: Responsible

Discussion paper – Responsible - Hans Jørgen Assmann

1. Introduction

This paper explores master thesis topics focused on projectification and work flexibility, which are linked to the concept of responsibility. Specifically, this work begins with a concise overview of the theories, methodologies, and findings presented in the thesis. Subsequently, the discussion dives into the relationship between projectification and work flexibility and the principles of the UN Global Compact. Finally, the paper concludes by summarizing its key points and presenting a conclusion for the paper.

2. Presentation of thesis

In our thesis we investigate the topics regarding projectification and work flexibility. Projectification is a term that first was coined by Cristopher Midler in 1995 (Midler, 1995). The researcher investigated the automotive company Renault, that during the 90's had difficulties in working project based when drawing on knowledge across functional units within their organization. In other words, the company units were working too much in silos, for instance meaning that the chassis-designers department communicated poorly with the engineers that built the motors. Thus, project failures occurred as the company had difficulties in organizing projects between specialized departments. As a solution, Midler showed that changes in organizing the project work increased the communication between functional units, and consequently increased the project success through synergy effects.

In addition to Midler, other contributors in the Scandinavian Journal of Management (1995) paved the way for the following research on temporary organizations (TO), such as Lundin & Söderholm (1995). TO's has become a widely used term among business practitioners and academic as of today. Since then, flexible working has evolved to more specific terms and ways of organizing, as documented by Bakker (2010). An example is working in a matrix-structure, which is mostly used by professionals in organizations that both work in the organizations first-line, i.e., "on the factory floor", as well as participating in temporary projects (Andersen, 2018, p. 285).

In parallel with the development of temporary organizations, digitalization, and usage of digital ways of communicating has evolved exponentially. Thus, working in TO's has become easier to conduct from other places than company offices, at least for knowledge workers such as in business and administration. Additionally, as the global covid pandemic imposed distancing

rules in 2019, this resulted in another shift in digital competency among all professionals who was forced to work from home (Amankwah-Amoah, Khan, Wood, & Knight, 2021; Franken et al., 2021), and had consequently several implications in pair with project work.

Research show that the amount of project work corresponds to about 1/3 of total time spent in the workplace (Wald et al., 2015; Schoper et al., 2018; Spanuth et al., 2020). Thus, we wanted to investigate whether the covid repercussions of project-based work had resulted in an increase, remained, or decreased degree of projectification. Further, as no one has investigated it in previous research contexts, we wanted to investigate whether there was a correlation between having a high degree of projectification and a high degree of work flexibility, and vice versa.

To gather primary data, we use an online questionnaire application called SurveyXact. Further, the PLS-SEM method (Hair et al., 2014) and 7-point Likert scales were analysed to measure relationships between the concepts and their corresponding measures (e.g., project intensity, schedule flexibility, generic flexibility, and HR flexibility) as well as indicator variables (i.e., individual questions in the questionnaire). Thus, the unit of analysis is individual Norwegian companies and organizations in public sectors all around Norway.

As a result, we found that projectification had a positive relationship with work flexibility, meaning that if a company has a high degree of project work, it also has a high degree of work flexibility. This relation was significant with 95% confidence. However, we could not find any controlling effect other than industry, e.g., service companies, affecting this relation. This finding is in line with implications from Maxwell et al. (2007).

3. Discussion of corporate responsibility in relation to projectification and work flexibility

According to Blowfield & Murray (2014, p. 7), the Financial Times define corporate responsibility as having "*a responsibility to those groups and individuals that they can affect, i.e., its stakeholders, and to society at large. Stakeholders are usually defined as customers, suppliers, employees, communities and shareholders or other financiers*." However, the authors note that there are so many variables in considering the responsibility that it is impossible to give a universal definition of the overall concept (Blowfield & Murray, 2014, p. 9). Thus, they recommend that companies should choose a definition that fits to position one's company in relation to its primary stakeholders. Nonetheless, the abovementioned definition incorporates the most important aspects when considering corporate responsibility; abiding laws and regulations, being good corporate "citizens" in the community, minimizing impacts on the environment, and financial responsibility that ensures effective and accountable

practices towards shareholders and other stakeholders. Going forward, corporate responsibility – following UN Global Compacts principles – is discussed in relation to projectification and work flexibility.

The UN Global Compat's principle 9 states that businesses should encourage the development of environmentally friendly technologies (UN Global Compact, n.d.-a). In the context of projectification, one of two master topics, this principle is relevant in several ways. First, new technologies are frequently developed by using project-based initiatives and approaches. Businesses can encourage the creation and adoption of environmentally friendly technologies by incorporating environmental considerations into these projects, as required by the principle 9. Second, businesses can evaluate and manage the environmental impact of their internal and external operations by using project-based approaches. For instance, they can use environmental impact assessments (EIAs) to identify potential environmental risks and development opportunities as part of project planning and execution. Thus, projects can for instance contribute to increased awareness of each organization's environmental footprint. Third, the importance of environmental considerations in project planning and execution is emphasized by the principles of *sustainable project management*, such as those supported by the International Institute for Sustainable Development (IISD). In sum, businesses can make sure that their project-based activities are in line with principle 9 and other environmental sustainability objectives by implementing these principles when conducting project-based activities.

When considering work flexibility, we focus more on human rights, the adoption of fair labour practices, and the abolition of discrimination at work (UN Global Compact, n.a.-b). These are addressed by the UN Global Compact Principles 3, 4, 5, and 6. The following are some ways that work flexibility might help to uphold these objectives. First, work flexibility can help to advance human rights by giving employees more control over their work schedules and allowing them to balance work and personal responsibilities. This can help to avoid situations in which employees are forced to choose between work and family obligations, potentially affecting their privacy, family life, and other human rights, which is in line with principle 3 regarding support for human rights. Second, by giving employees more control over their working conditions, work flexibility can help prevent forced or compulsory labour. Employees who can work from home or set their own schedules, for example, may be less likely to be subjected to abusive or exploitative labour practices, which is in line with principle 4 of all forms of forced and compulsory labour. Third, work flexibility can help to eliminate child labour by allowing parents to balance work and family obligations in such a way that they are

not reliant on their children in order to survive – rather that their children are given the possibility to get an education. Work flexibility can help reduce the need for children to provide care or support for their families by allowing parents to work from home or set their own schedules, in line with principle 5. Last, work flexibility can help eliminate workplace discrimination by encouraging greater diversity and inclusion. Flexible work arrangements, for example, can make it easier for employees with disabilities or other special needs to participate in the labour force.

As a result, projectification and work flexibility can be viewed as a way to support the UN global compacts principle 3, 4, 5, and 6 by promoting human rights, fair labour practices, and the elimination of discrimination in the workplace, as well as considering issues regarding project work to ensure complains with regards to principle 9. As a consequence, by adopting flexible work arrangements in a project-based environment that considers the abovementioned principles, businesses can create a more inclusive and supportive organisation environment that is responsible.

4. Discussion of responsibility in relation to researchers

In addition to theories, methods, and findings in our thesis, responsibility also relates to us as researchers in a more general sense. First, it is our responsibility as researchers to ensure that the research practices are ethical and do not harm the participants. This for instance includes obtaining informed consent, maintaining confidentiality, and avoiding unnecessary risks to participants, for instance in relation to GDPR practices. An example where this was practiced was by using SurveyXact instead of Google Forms, as we were not sure how the data would be handled in the latter application. Second, it is the responsibility of researchers to collect data accurately and without bias. This includes ensuring that data collection tools are valid and reliable, as well as that data is correctly recorded and analysed. This was ensured through using measures that had been used in previous studies, as well as conducting tests that proved the measurement models to be reliable and valid. Third, we must be open about the research practices and make the data and methods available for scrutiny by other researchers. This helps to ensure that research findings can be replicated and used to advance knowledge. In our case, the data was shared with two other participants in another master thesis group, as well as a supervisor who made sure that assumptions were based on empirical studies for instance when it came to control effects. Fourth and last, we are responsible researchers be reporting the findings accurately and objectively, and by must avoid misrepresenting or exaggerating the findings. We also disseminated the findings to relevant stakeholders and communicated the

implications of the research as clear and understandable as possible, which was done in the discussion-part.

5. Summary

Projectification, work flexibility, and corporate responsibility are the main topics of this discussion paper. In short, projectification revolves round the increased use of temporary organizations to complete projects with boundaries of time, and work flexibility is the capacity to change working conditions such as hours, locations, and schedules. We look into how projectification and work flexibility relate to corporate responsibility.

The method consisted of using the PLS-SEM method and 7-point Likert scales to analyse the research's findings after using an online questionnaire tool called SurveyXact. The sample was made up of distinct Norwegian businesses and public organizations from all over Norway. We document significant correlation between projectification and work flexibility, which means that if a company engages in a lot of projects, it also engages in a lot of flexibility at work.

The UN Global Compact's principle 9 states that businesses should support the development of environmentally friendly technologies in the context of corporate responsibility, we point out. Project-based methodologies can be used to create and adopt environmentally friendly technologies, assess and manage how operations affect the environment, and make sure that project-based activities adhere to Principle 9.

Further businesses should pick a definition of corporate responsibility that corresponds to their relationship with their key stakeholders. We do, however, point out that corporate responsibility typically entails following laws and regulations, acting as good corporate "citizens" in the community, minimizing negative environmental effects, and ensuring effective and accountable practices towards shareholders and other stakeholders.

Projectification and work flexibility are crucial for businesses to stay competitive in a setting that is changing quickly. When developing organizational structures and policies, we advise businesses to take projectification and work flexibility into account. To ensure that project-based strategies are in line with corporate responsibility principles, we also advise businesses to take environmental concerns into account.

In general, this discussion paper sheds light on how projectification, work flexibility, and corporate accountability are related. To conclude, in order to ensure that project-based approaches are consistent with corporate responsibility standards, we advise organizations to consider the beneficial relationship between projectification and job flexibility and incorporate environmental considerations into project-based approaches.

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E: International

Discussion paper – International - Henrik Minde

1. Introduction

Internationalization refers to the process of businesses expanding their operations to other countries, beyond their own national borders. This process includes different activities such as establishing subsidiaries, expanding and develop their importing and exporting, as well as forming alliances with businesses based in other countries. In this paper I will draw upon the relationships between different kinds of international trends and forces, against my master thesis regarding projectification and work flexibility.

2. My thesis

My thesis is written in a group of two students, as well as one more master thesis group writing about the same topic. Our thesis is a replication of a study made back in 2016, about projectification and strategic flexibility. In order to replicate and compare our thesis to the old one, we had to use parts of the same questionnaire regarding the "projectification" part. To separate our thesis from the old one, we chose to look at how projectification might have an impact on work flexibility. Therefore, we added some questions regarding work flexibility to the questionnaire in addition to the questions regarding projectification. The questionnaire was sent out by email, to different companies in Norway. The study aims at measuring the time spent on projects in comparison to total workflow, as well as measuring the project intensity for Norwegian companies from different industries. In addition to this we ask questions regarding work flexibility to find if there is any relationship between the degree of projectification and if this has any impact on allowing flexible working.

Projectification is a global trend in most industries, where the goal is to organize their work around working in projects, instead of focusing too much on internal operations (Lundin & Söderholm, 1995). The goal is to assemble a team with different knowledge and skills, in order to reach the final objective in the best way possible and within a certain range of time.

On the other hand, work flexibility refers to how organizations and their employees, is able to react to changes in their surroundings and markets (Volberda, 1998). As an example, this could be adapting to emerging technology in the market, economic trends, and a global pandemic.

Examples on work flexibility is being able to work from home, changing your own schedule and having flexitime at work.

In addition, we aim to find if there is any mediating or controlling effects of HR flexibility, age of the company, number of employees or type of industry. Through our analysis we find that there is a significant controlling effect of industry at a 95% confidence level. Nevertheless, there is no controlling or mediating effects of the other variables.

To conclude, we find evidence that support our primary hypothesis (H_1), stating that the degree of projectification has a positive relationship with work flexibility, at a 95% confidence level. We also find that the level of projectification has increased from 32,6% in 2018 to 37,3% in 2022.

3. International trends and forces

Our thesis can relate to international trends and forces in many ways, as project work and flexible working arrangements is relevant for all companies around the world to some degree. As the degree of projectification generally has increased around the world, it is natural to think that the degree of work flexibility has had an increase during and after the covid-19 pandemic. After the pandemic many companies has continued to offer flexible working arrangements to their employees. This might be the case as they have seen that this has had a positive or at least not a negative effect on their employees and their ability to work. Flexible working arrangements might be working from home, flexitime, core hours and shift work.

In regard to internationalisation, projectification and work flexibility are both strategies companies can use in order to meet challenges and changes in their market of operation. These strategies are also important for companies working towards expanding to foreign markets. For a company being able to expand globally, they have to be flexible in their work in order to adapt to different time zones and general ways of working, in order to work in projects and having a healthy relationship with foreign partners. When operating internationally, it is important for companies to remain competitive, even in times of crisis and react quickly to changes in their markets and customers.

Globalization and urbanization is a worldwide phenomenon where people move from the countryside to bigger cities and urban areas where there is more opportunities for work and activities during their spare time. This phenomenon also leads to higher living costs in the bigger cities as the total demand for homes often is bigger than the supply. This includes people working in companies with project work, where it has been important to be working in teams and be gathered together at the same place.

Flexible working arrangements is becoming increasingly more important, and many businesses has become even more aware of this during the last couple of years (Kelliher et.al., 2019). Flexible working has been the most available for jobs in the private sector, as jobs in the public sector is controlled by strict rules and regulations. It is also known that flexible working has been the most used by middle- and upper-level jobs (Kossek & Lautsch, 2018). During the last couple of years, we have nevertheless also seen a bigger willingness for the public sector to find ways for their employees to use flexible working arrangements.

As the pandemic has made people having to learn how to collaborate and work together as a team from their home office using digital solutions, this might have an impact on the urbanization in the coming years. As it is becoming easier and better solutions for working from home, we might see an effect of people moving out from the bigger cities as they are able to do the same work from their hometown. This can also be an advantage for their employers, that can save money by renting smaller office spaces. On the other hand, this can also mean that employers have to offer their employees equipment and other solutions to be able to work from home.

One of the first things that comes to mind when thinking about how flexible working and projects has been affected internationally over the last years, is digitalization. The increase of digitalization during the last years has changed a lot regarding how people and companies think of working in projects and flexible working. New and increasingly better digital solutions offers both companies and their employees to work in different and often more effective ways. As we have seen during the pandemic, there has been an accelerating effect on the supply and improvement of home office solutions.

Digital new comings have made it much easier for employees to work remotely and has made it possible for multinational organizations to communicate and have meetings without having

to travel. This has also made it a lot easier for multinational firms to have projects with team members across different countries and even continents. Solutions like video-conference tools, contribute to being able to have meetings and ask questions to your employees almost in the same way as being physically at the office. Even though these digital solutions have become better and more accessible over the last years, the best platforms are often expensive and are reliant on other tools in order to function properly (Hunter, 2019).

Having the opportunity to work remotely and in general being more flexible in your work, increases the possibility of participating in projects across cities, but also across countries. This builds upon our thesis, stating that the level of projectification has increased over the last years in relation to flexible work arrangements, i.e., work flexibility. This opens for multinational firms to open for projects that they would not complete before, due to extra cost of traveling and having their employees moving to other countries for a longer period.

4. Summary and Conclusion

To summarize, I have drawn upon the concept of internationalization, which refers to businesses expanding their operations to other countries. Following that, the article focuses on our master's thesis that investigates the relationship between projectification and work flexibility in Norwegian firms. The thesis concludes that the degree of projectification and work flexibility have a significant positive relationship. The thesis is also linked to international trends and forces like globalization, urbanization, and the impact of the COVID-19 pandemic on the adoption of flexible working arrangements. When operating internationally, companies must remain competitive, adapt to different time zones, and respond quickly to changes in markets and customers.

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