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Leadership, job resources, job demands, and compliance: A qualitative study in offshore setting

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Ingrid Meling Styrvold

Summary

The thesis explores how leadership, job resources, and job demands affect compliance with procedures for an Oil and Gas organization on the Norwegian Continental Shelf. The study also identifies some additional factors that seem important to compliance.

The topics were explored through a semi-structured qualitative study, where eight informants from the Oil and Gas industry were interviewed. One offshore organization was chosen, and all informants were skilled workers with relevant competence and experience to answer the pre-defined questions.

The theoretical job demands-resources theory was used as a basis for the study to connect leadership with compliance. Several job resources and demands were focused specifically. A research model connecting leadership, job resources, job demands, and compliance was made based on available literature and used as the basis for interviews and subsequent results.

Based on the obtained results, the following conclusions can be drawn:

- Results generally support the validity of the research model and pre-defined assumptions.
- Performance feedback, involvement, and workload seem to be the most influential job resources and demands on compliance.
- Production pressure and role ambiguity are not prominent influencers of compliance for the studied selection.
- Systems, continuity, availability, and work arrangement have been identified as additional important resources and demands, which should be studied further.
- Job engagement seems to affect compliance, and is suggested as an intermediate step before compliance in the research model.

Thus, it can be concluded that the research model is suitable for the investigated data, and the results can provide valuable insight into important factors to improve compliance of Norwegian Oil and Gas organizations.

The study has resulted in a revised research model, optimized based on the findings from this work. It is recommended to use this model as a basis for further research.

Sammendrag

Avhandlingen utforsker hvordan ledelse, arbeidsressurser og arbeidskrav påvirker etterlevelse av prosedyrer for en olje- og gassorganisasjon på den norske kontinentalsokkelen. Studien identifiserer også noen tilleggselementer som ser ut til å være viktige for etterlevelse.

Temaene ble utforsket gjennom en semistrukturert kvalitativ studie, der åtte informanter fra olje- og gassbransjen ble intervjuet. Én offshore-organisasjon ble valgt, og alle informantene var fagarbeidere med relevant kompetanse og erfaring til å svare på de forhåndsdefinerte spørsmålene.

Den teoretiske modellen for arbeidskrav-ressurser (J-DR) ble brukt som grunnlag for studien for å koble ledelse med etterlevelse. Flere spesifikke arbeidsressurser og -krav ble fokusert på. En forskningsmodell som kobler ledelse, arbeidsressurser, arbeidskrav og etterlevelse ble laget basert på tilgjengelig litteratur og brukt som grunnlag for intervjuer og påfølgende resultater.

Basert på resultatene kan følgende konklusjoner trekkes:

- Resultatene støtter generelt gyldigheten av forskningsmodellen og de forhåndsdefinerte antakelsene.
- Tilbakemeldinger, involvering og arbeidsbelastning ser ut til å være de mest innflytelsesrike arbeidsressursene og -kravene for etterlevelse.
- Produksjonspress og rolleklarhet er ikke fremtredende faktorer for etterlevelse for det studerte utvalget.
- Systemer, kontinuitet, tilgjengelighet og arbeidsordning har blitt identifisert som viktige ressurser og krav, som bør studeres videre.
- Jobbengasjement ser ut til å påvirke etterlevelse, og foreslås som et mellomliggende trinn før etterlevelse i forskningsmodellen.

Det konkluderes med at forskningsmodellen er egnet for de undersøkte dataene, og resultatene kan gi verdifull innsikt i viktige faktorer for å forbedre etterlevelse i norske olje- og gassorganisasjoner.

Studien har resultert i en revidert forskningsmodell, optimalisert basert på funnene fra dette arbeidet. Det anbefales å bruke denne modellen som grunnlag for videre forskning.

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Abbreviations

NCS	Norwegian Continental Shelf
J-DR	Job Demands-Resources
O&G	Oil and Gas
LMX	Leader-member exchange

1 Introduction

1.1 Problem Statement, Significance, and Purpose

The study aims to explore how and to which extent leadership influences compliance in the Norwegian Oil & Gas (O&G) industry. To investigate this, the theoretical job demands-resources (J-DR) framework has been used to create a research model as the basis for various assumptions tested in the study.

Based on this, two overall research questions are raised:

1. How can the J-DR framework be used to increase understanding of leadership and compliance in the Norwegian Oil & Gas sector?
2. Which job resources and demands are most influential for compliance?

The study has two main purposes. Firstly, it aims to confirm that the proposed leadership-compliance model is suitable for the data being investigated. Secondly, it seeks to identify other relevant mechanisms that can enhance understanding of the problem and optimize the leadership-compliance model.

The J-DR model is commonly used to connect the work environment with well-being and performance (Bakker & Demerouti, 2017). It is a malleable model, which can be adjusted and adapted to fit the aim of the thesis by focusing on chosen job resources, demands, and organizational outcomes. For this study, the chosen organizational outcome to be investigated is compliance, and the J-DR framework is used to connect an input factor, in this case leadership, via resources and demands to this organizational outcome. It is believed that a solid connection between leadership and compliance through certain job resources and demands will increase understanding of organizational factors which are important for compliance, and thus safety of workers on the Norwegian Continental Shelf (NCS).

The study will contribute by expanding the use of J-DR, and using it to link leadership and compliance (Demerouti & Bakker, 2022). This will be used to increase understanding of leadership and its influence on compliance and safety performance, which has been a desired contribution as present research is limited (Ta, Kim, & Gausdal, 2022) (Pilbeam, Doherty, Davidson, & Denyer, 2016). Griffin and Hu (2013) also argue that more research is needed to understand the relationship between leadership and compliance as existing research on the topic is scarce.

Another study has mentioned a need to consider a broader spectrum of organizational factors to increase the understanding of safety research (Olsen, Næss, & Høyland, 2015). They claim that “typically, safety researchers include variables with a safety-specific focus” (p. 301). This study will contribute to broaden this perspective and include safety-relevant aspects which are not typically studied in safety research.

More qualitative research on the present topic is also desired, as most research is quantitative studies (Grill & Nielsen, 2019). Qualitative studies will broaden our understanding of the topic, and uncover aspects that are difficult to identify through quantitative studies (Jiang, Zhao, Wang, & Herbert, 2024).

1.2 Background

Society has been greatly affected by the Covid-19 pandemic, and one direct effect for the O&G industry was the introduction of a beneficial tax scheme for new developments on the NCS (Kampevoll, Lorch-Falch, & Jobling, 2023). This has given the O&G industry an incentive to increase their activity level. In addition, the employment rate in Norway is very low, and the availability of resources to handle the new builds in addition to regular production is limited (Høyland & Normann, 2022).

Thus, the industry is currently in a period with very high activity levels, and strained resources. High activity level and workload on employees has a clear connection with workplace incidents, which increases risk during hectic periods like the current situation (Rundmo, Hestad, & Ulleberg, 1998).

Another prominent aspect is the unexpectedly high profits from existing fields. Oftentimes, more oil and gas are extractable from the fields than first assumed, e.g., due to more advanced technology or new discoveries, which alters the business potential. As a result, the companies often wish to extend the lifetime of facilities to maximize the potential of the field without having to invest gigantic sums into replacing the old installations with new ones. This means that the need for maintenance and component replacements increases and the reliability of equipment decreases. This is correlated with incidents, as some serious accidents are related to maintenance (Okoh & Haugen, 2013) or equipment breakdown (Bye, et al., 2023). Both the maintenance-performing activity in itself and the lack of or wrongly performed maintenance and replacements can be the cause of incidents (Okoh & Haugen, 2013).

Additionally, the current geopolitical situation has given Norwegian O&G-producing facilities an added incentive to produce as much as possible. The sabotage of the Nord Stream pipeline and boycott of Russian products have severely compromised the energy access in Europe, and the continent is presently highly dependent on Norwegian oil and gas to keep households warm and fed (Gasslekkasjene i Østersjøen, 2022). Hence, there is an added pressure for Norwegian installations to keep production volumes high and minimize production issues. This seems to be correlated with incidents, as production pressure and stress are known to affect safety risk negatively (Bye, et al., 2023).

These factors combined, i.e. high activity level, strained resources, aging and less reliable equipment, and production pressure, result in lacking compliance as busy and stressed workforces lead to shortcuts and less reporting of incidents (Bye, et al., 2023). The factors beg

the question if we are now at a turning point concerning safety in the Norwegian O&G industry.

Historically, the safety for offshore workers on the NCS has increased since the start in the 1960s (Ryggvik & Smith-Solbakken, 2023). Number of offshore facilities have increased drastically, while the amount of fatal accidents has steadily decreased during the same period. This clearly indicates improved safety and reduced risk on the facilities, and all statistics indicate that the present is the safest time to work on O&G facilities on the NCS (Havtil, 2023).

However, there is an ongoing debate in Norway if safety in the industry is going in the wrong direction. Professors Ole Andreas Engen and Jan Erik Vinnem have raised concerns about this, and claim that cost reduction compromises safety in the industry (Kongsnes, 2024). Several politicians have also argued similarly, and fear that safety is headed on the wrong path (Skarsaune, 2023).

Oftentimes, *safety* compliance is highlighted as an important factor for safe operations, and several studies have explored safety compliance in relation to safety outcomes in the O&G industry (Kvalheim & Dahl, 2016) (Bensonch, Argyropoulos, Dimopoulos, Mikellidou, & Boustras, 2022). However, some studies also argue that general compliance must not be overlooked and claim that not only directly safety-focused factors influence safety. Rather, general compliance to general procedures is equally important for safe operations and avoidance of accidents (Olsen, Næss, & Høyland, 2015).

Hence, *safety* compliance is viewed as a constructed concept, as it is impossible to be sure of which procedures are safety critical. Thus, safety compliance limits compliance to only a fraction of what is important to ensure safety in high-risk work environments (Olsen, Næss, & Høyland, 2015). Therefore, this thesis explores general compliance and its influencing factors.

Similarly, leadership has also been approached openly, with no specific leadership theory as the basis. Since the study explores general compliance, it would be limiting and counterintuitive to focus solely on the *safety* leadership theory.

1.3 Structure of the Study

The thesis starts by outlining relevant theoretical background, including a review of existing compliance and leadership theories, and an introduction to the J-DR framework. The theory chapter is finalized by introducing a research model based on the relevant literature which will be utilized for the remainder of the study. Several assumptions are presented to support the model.

Further, the organizational context and methodology are described in the Methodology chapter. This includes a description of the chosen research design, process for data collection, sampling methods, and data analyses.

The Results chapter presents the obtained results from interviews. The chapter is divided into main topics based on the research model to clearly distinguish results obtained to support each assumption.

The thesis moves forward into a Discussion chapter which contains a thematic content analysis of the obtained results and connects the bigger lines. This chapter also presents and discusses some limitations of the study and relevant factors that have not been directly focused in the study. Finally, a revised research model is proposed based on the results to support the adjustments to the model.

The thesis is finalized with some conclusions and recommendations for future research based on the obtained results.

2 Theoretical Background

This chapter presents the theoretical foundation for the study by presenting relevant theory from previous work.

2.1 Workplace Safety

The O&G industry is a high-risk industry with the potential for extremely high consequences if accidents are to occur. There have been several incidents from the North Sea in the past 50 years which have resulted in many fatalities and significant oil spills. Beneath these are countless smaller incidents and near-misses. However, accidents, spills, and breakdowns have become less and less common in the Norwegian O&G industry over time (Kongsvik, Fenstad, & Wendelborg, 2012), see Figure 1, though the production volume and number of producing facilities are increasing (Petroleumstilsynet, 2021). This indicates improved safety and reduced risk, which has been a major focus area for the Norwegian authorities (Midttun, 2024).

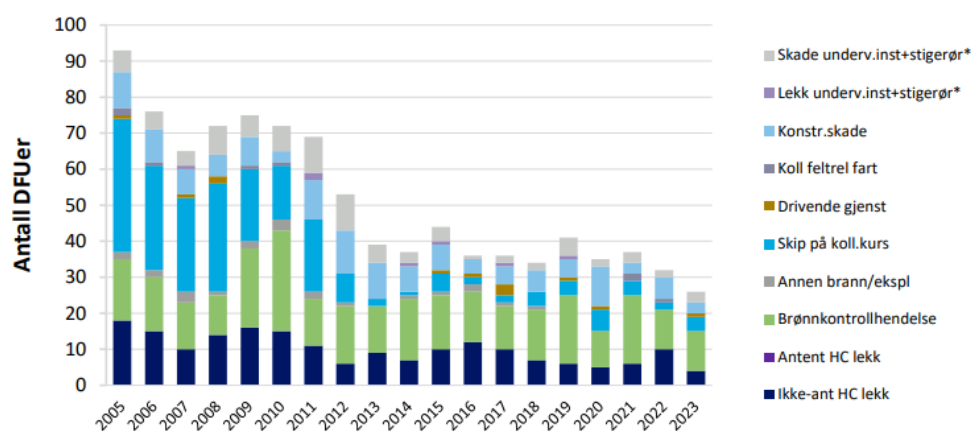


Figure 1: Number of defined hazardous and accident situations (DFUs) on the NCS from 2005 to 2023 (Havtil, 2023).

Overall, safety has been increasingly bureaucratized over the past decades, with more regulation and standardization. This has obvious benefits in that safety is generally improved, but can also accompany some disadvantages for an organization, e.g. constraints in innovation and new technologies, high workload, and limitations in individuality (Dekker S. , 2014). The activity level in the industry is currently very high, the age of equipment is increasing, the reduction of operational cost is essential, and lean organizations are focused, which might influence the ability to uphold high safety performance and compliance with an increasing number of procedures. As a result, organizations and their management need to focus on the most valuable safety-enhancing measures and leadership behaviors (Lyubykh, Tuner, Hershcovis, & Deng, 2022).

Christian et al. (2009) summarize this in their integrative model for workplace safety, see Figure 2, which states that workers' safety motivation and knowledge are affected by the safety climate, leadership, personality characteristics, and job attitudes. Safety motivation and knowledge consequently result in an overall safety performance, which finally accumulates to

number of workplace accidents and injuries. Several studies have demonstrated a positive relation between safety performance and safety outcomes (Christian, Bradley, Wallace, & Burke, 2009) (Goldenhar, Williams, & Swanson, 2003) (Neal & Griffin, 2006). In addition, the culture and communication between management and workers are crucial for safety performance and outcomes (Dekker & Woods, 2010).

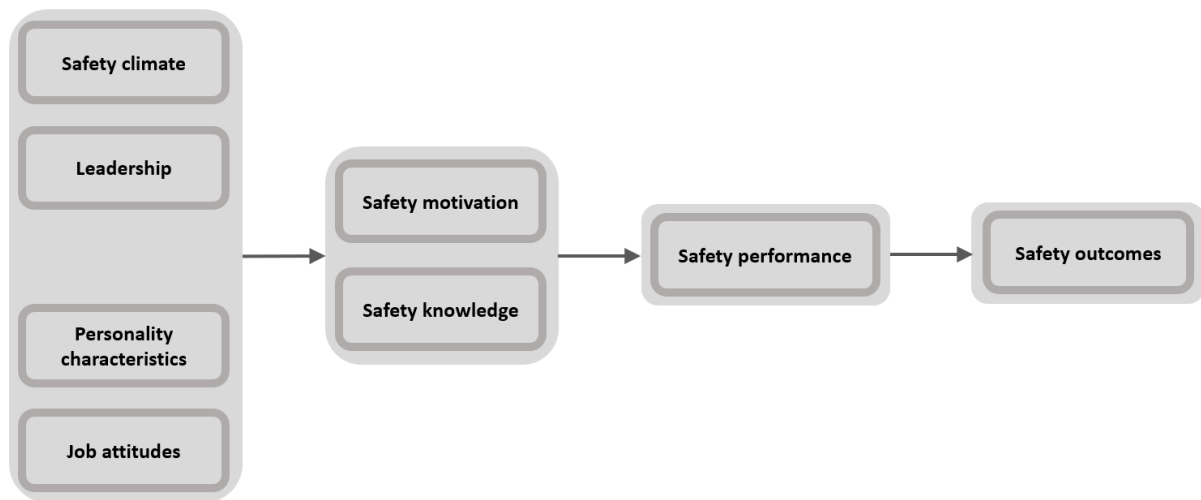


Figure 2: Integrative model for workplace safety, adapted from (Christian, Bradley, Wallace, & Burke, 2009).

2.2 Compliance

Compliance is defined as «the act of obeying a law or rule, especially one that controls a particular industry or type of work” (Cambridge Advanced Learner’s Dictionary, 2013). Compliance with laws and legislation, internal requirements, health and safety demands, etc., is essential for workplace safety, minimization of incidents and general safety climate as procedures and work processes are present to ensure safe and efficient operations (Gun, 1993) (Neal & Griffin, 2004) (Slitor, 2000). Therefore, compliance is of high priority for the industry, and ensuring compliance comes at a high cost for organizations and their individuals (Lyubykh, Tuner, Hershcovis, & Deng, 2022). This can be a very complex task, as there are countless procedures and ways of performing work (Pilbeam, Doherty, Davidson, & Denyer, 2016). As a result, the degree of compliance in an organization is highly dependent on its people and their knowledge, culture, and values (Dahl & Olsen, 2013).

To ensure safety and well-being of workers and the environment, the industry is closely regulated by Norwegian authorities (Høivik, Moen, Mearns, & Haukelid, 2009). Compliance with these laws is essential for safety, and several studies have found that non-compliance is correlated with workplace incidents in the industry (Dahl & Olsen, 2013) (Mehta & Thomas, 2018).

2.2.1 Compliance vs. Safety Compliance

Safety compliance is a specific form of compliance which focuses specifically on compliance to safety procedures and rules, and is by Neal et al. (2000) defined as the act of “adhering to safety procedures and carrying out work in a safe manner” (p. 101). Safety compliance is by Griffin and Neal (2000) proposed as one dimension of safety performance, which refers to “the core safety activities that need to be carried out by individuals to maintain workplace safety” (Wang, Wang, & Xia, 2018, p. 248).

Several studies have explored safety compliance in the O&G sector (Kvalheim & Dahl, 2016) (Bensonch, Argyropoulos, Dimopoulos, Mikellidou, & Boustras, 2022). However, non-compliance to procedures not directly safety-focused has also led to accidents and unsafe situations for offshore workers. For instance, the number of gas leakages is correlated with workplace accidents (Thorsen, 2013), and thus influences the safety environment and risk level of the business. Gas leakages on O&G facilities on the NCS have also been shown to be related to general work climate factors in the organization, and not solely safety-centered factors (Olsen, Næss, & Høyland, 2015). Maintenance activities can also trigger unsafe situations, and compliance to activity-related procedures, e.g. how to change a valve or where to isolate a production line, is crucial for workplace safety (Okoh & Haugen, 2013). Thus, it has been argued that safety research is too focused on safety-specific aspects and that a broader approach to consider other organizational factors is necessary to increase understanding (Olsen, Næss, & Høyland, 2015).

2.3 Leadership

Leadership is “a process whereby intentional influence is exerted over other people to guide, structure, and facilitate activities and relationships in a group or organization” (Yukl, 2013, p. 18). Yukl (2012) suggests that leadership consists of several components, including influencing others, goal attainment, and shared goals by leaders and followers. It is a process that happens in the context of a group. Thus, leadership is different from a mere leader; it can be understood as an event between leaders and followers (Yukl, 2012).

The influence of leadership on safety performance in high-risk industries has been acknowledged in previous studies (Ta, Kim, & Gausdal, 2022). Leadership is considered an important factor for workplace compliance, and effective leadership has been shown to improve the safety performance of high-risk industries (Flin & Yule, 2004).

Leadership level plays a role in influencing employees, and studies indicate that the closest leaders with direct personnel responsibility are more influential than leaders higher up in the hierarchy regarding safety performance and motivation (Zohar, 2000) (Zohar, 2002). However, these are not strictly separate, and a combination of different leadership styles is the most effective for successful leaders (Willis, Clarke, & O'Connor, 2021). A leader should promote safe operations and ensure the organization complies with safety regulations and norms (Pilbeam, Doherty, Davidson, & Denyer, 2016).

2.3.1 Leadership and Compliance

Leadership positively and negatively affects a workforce's compliance, and a constructive leadership style is an important contributor to compliance (Clarke, 2013). Safety leadership is associated with safety compliance and is thought to influence safety compliance positively if asserted correctly (Pilbeam, Doherty, Davidson, & Denyer, 2016). Furthermore, leaders are crucial for maintaining compliance, influencing the work climate, and focusing on compliant operations (Dahl & Olsen, 2013). Leadership level has also been shown to matter in this context (Flin & Yule, 2004).

On the other hand, negative and destructive leadership has been shown to affect compliance negatively (Yang, Zheng, Liu, Lu, & Schaubroeck, 2020). The magnitude of influence is affected by several factors, e.g. power distance in the organization, the industry risk, and workforce characteristics (Lyubykh, Tuner, Hershcovis, & Deng, 2022). Though line managers are associated with leadership and top management is responsible for compliance to safety regulations, there can also be informal safety leaders at a workplace, which can have powerful roles, and influence safety compliance greatly (Wu, Yao, Ning, & Wang, 2021).

2.3.2 Types of Leadership

There are many forms of leadership, and different leadership theories have different methods of accomplishing compliance and workplace safety (Pilbeam, Doherty, Davidson, & Denyer, 2016) (Lyubykh, Tuner, Hershcovis, & Deng, 2022). This sub-chapter describes the most relevant leadership theories, and how they could be interesting for the purpose of this study. They also present some arguments for lacking relation between leadership styles and compliance, which function as arguments to why none of these theories were specifically chosen to study in detail in this work.

2.3.2.1 Transformational Leadership

The transformational leadership style focuses on the growth and development of leaders and followers and has been one of the most extensively studied leadership theories since it was introduced in the 1970's (Burns, 1978). It is stated that "transformational leaders [...] are those who stimulate and inspire followers to achieve extraordinary outcomes and develop their own leadership capacity" (Bass & Riggio, 2005, p. 3).

Transformational leadership can affect workplace safety positively (Barling, Loughlin, & Kelloway, 2002), and it has been shown that successful safety-specific transformational leadership improves safety outcomes (Mullen & Kelloway, 2009). It can therefore be a central leadership style to study in relation to safety. However, Mullen and Kelloway (2009) studied the relationship between transformational leadership and compliance and found that this leadership style seemed to only influence compliance to a moderate degree.

2.3.2.2 *Leader-Member Exchange (LMX)*

Leader-member exchange (LMX) is a leadership theory focused on the relationship between leaders and followers (Yammarino, Dionne, Chun, & Dansereau, 2005). It is a well-known leadership theory developed in the mid-1970s (Dansereau, Graen, & Haga, 1975) which has been extensively studied and adjusted since (Graen & Uhl-Bien, 1995) (Martin, Thomas, Legood, & Russo, 2018). Pilbeam et al. (2016) explain that “leadership occurs when leaders and followers develop effective relationships based on trust, respect, and mutual obligations, resulting in mutual and incremental influence to meet shared interests” (p. 112).

Effective LMX leaders have been shown to positively affect workplace safety by motivating employees to work safely and participate in safety-enhancing activities (Hofmann, Morgeson, & Gerrass, 2003). LMX can also motivate compliance (Griffin & Hu, 2013), but Christian et al. (2009) argue that LMX does not influence compliance as strongly as other safety-related factors.

2.3.2.3 *Safety Leadership*

Safety leadership can be defined in different ways, but is generally a term used to describe a process or role of leaders to promote safety behavior, engagement, and motivation (Jiang, Zhao, Wang, & Herbert, 2024) (Griffin & Hu, 2013) (Lu & Yang, 2010) (Donovan, Salmon, Horberry, & Lenné, 2018) (Fang, Huang, Guo, & Lim, 2020). Wu et al. (2008) define safety leadership as “the process of interaction between leaders and followers, through which leaders can exert their influence on followers to achieve organizational safety goals under the circumstances of organizational and individual factors” (p. 308).

Safety leadership can be viewed as its own independent leadership theory, or as safety-specific aspects of other existing leadership theories, e.g. transformational or LMX (Pilbeam, Doherty, Davidson, & Denyer, 2016). Leaders can perform safety leadership in different ways, e.g., through safety inspiring, monitoring, and learning (Griffin & Hu, 2013). Specifically, safety monitoring and learning have been related to compliance, and a leader’s ability to monitor errors and encourage safety-related learning affects the employees’ ability to stay compliant with safety procedures (Griffin & Hu, 2013).

2.4 *The Job Demands-Resources Model*

To enable workplace safety and compliant operations, employees need some sets of resources to help them achieve these goals. On the other hand, they will experience various demands which can challenge their ability to stay compliant. This can be explained through the job demands-resources model, which will be introduced and contextualized in the present chapter.

2.4.1 Introduction to the Job Demands-Resources Model

The job demands-resources model, introduced by Demerouti et al. (2001), explains the relationship between job demands and job resources, and how these affect organizational outcomes. Figure 3 outlines the model (Bakker & Demerouti, 2006), and shows how various demands and resources ultimately affect an organization's outcomes. It can be an efficient tool to analyze organizations and their employees' well-being, as the balance between demands and resources is crucial for employees' motivation. These factors will ultimately influence the results of the business (Bakker & Demerouti, 2006).

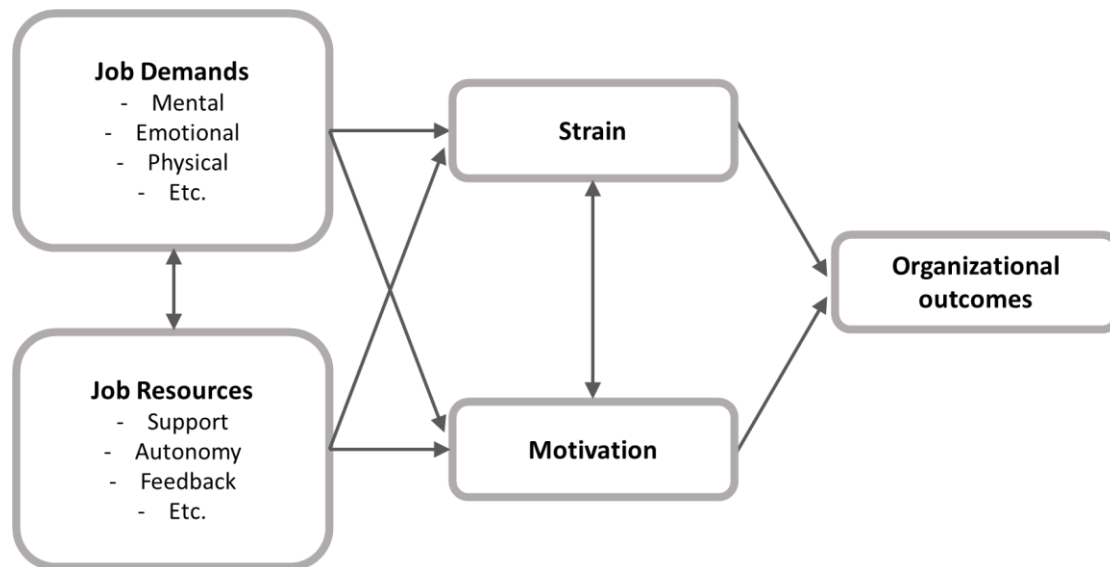


Figure 3: The job demands-resources model, adapted from (Bakker & Demerouti, 2006).

One organizational outcome that the J-DR might help to understand, is compliance. The following sub-sections will describe, based on available literature, some resources and demands which might influence compliance.

2.4.2 Organizational and Personal Resources

Job demands and job resources can be both organizational and personal. Organizational factors are typically tools, frameworks, and aids that the organization imposes on the employees. Examples of organizational demands and resources are management systems, feedback processes, and support channels. These can be considered both as resources and demands from workers, and their effect on compliance amongst workers will vary. Such organizational resources are typically more pronounced in the transactional leadership style, with measurable and objective goals for safety performance (Kapp, 2012).

Personal resources and demands are more individual and less confined factors, for instance social support, variety, and job control (Gillet, Fouquereau, Huyghebaert, & Colomat, 2015). These can also be considered both resources and demands based on their presence and

prominence in an organization. The work environment has been shown to affect personal resources (Gillet, Fouquereau, Huyghebaert, & Colomat, 2015) in the sense that a positive work environment will generally lead to a high degree of work engagement among workers (Korunka, Kubicek, Schaufeli, & Hoonakker, 2009), while the opposite tends to increase the risk of burnout (Demerouti, Le Blanc, Bakker, Schaufeli, & Hox, 2009). Personal resources are often more distinct with a transformational or LMX leadership style (Kapp, 2012), as these types of leadership focus more on the interpersonal relations between leaders and followers.

2.4.3 Job Resources

Job resources can be defined as workplace factors which help reach goals, reduce job demands, and achieve growth and development. Overall, they are motivating factors for a workforce (Demerouti & Bakker, 2011), and the JD-R model suggests that job resources ultimately lead to increased motivation (Bakker & Demerouti, 2006). Motivation is closely related to work engagement, and Bakker et al. (2012) state that “job resources are the most important drivers of work engagement” (p. 15). Job resources thus predict engagement among employees (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). This suggests that the resources of the J-DR model might go via work engagement before reaching the desired organizational outcomes, in this case, compliance.

Naturally, there is a wide range of job resources which can positively contribute to a work environment, and their presence and importance will vary according to the occupational setting. Examples of job resources are social support, autonomy, job control, competence, involvement, job safety, participation, task variety, and performance feedback (Demerouti & Bakker, 2011).

Competence is primarily an organizational resource which is built through e.g., training, coursing, and education of employees. Both safety-specific and general competence is important for safety performance (Dahl & Olsen, 2013). It is highlighted by Barling et al. (2003) that general work skills are equally important to safety as safety-specific training.

Competence can be an efficient job resource to improve compliance, as knowledge and competence of relevant procedures are essential for individual compliance (Skaugrud, 2011). Additionally, competence with regard to the operations and the inherent risks are highlighted as crucial for understanding the importance of compliance (Skaugrud, 2011), and the lack of competence has been mentioned as a contributing factor to non-compliant operations in the O&G industry (Dahl & Olsen, 2013).

On the other hand, Mullen (2004) found that the desire to be perceived as a competent worker amongst colleagues and leaders would occasionally compromise their focus on safety. As a result, “portraying an image of being a competent worker [...] may lead individuals to resort to violating safety procedures” (Mullen J. , 2004, p. 280). Thus, competence is not a job resource which has solely positive outcomes but can also motivate unsafe actions.

Another job resource which can affect compliance is involvement. This is a somewhat more personal resource and can be an important job resource if used properly. One aspect of this is the workers' involvement in their own jobs and decision-making, which can be correlated with job engagement and burnout. On the one hand, if involvement is high, employees will increase their engagement for the work which improves their motivation to stay compliant (Korunka, Kubicek, Schaufeli, & Hoonakker, 2009) (Tsao, Hsieh, & Chen, 2017). On the other hand, lack of involvement among workers is related to increased burnout and reduced motivation (Demerouti, Mostert, & Bakker, 2010).

A second equally important aspect is leadership involvement in tasks which affect the workers' ability to stay compliant. Leadership involvement has been shown to be essential for workplace compliance, and lack of leadership involvement can lead to non-compliance and hazardous work situations (Dahl & Olsen, 2013).

A third job resource which is worth highlighting is performance feedback, which can be said to be both an organizational and personal resource. There are often channels and pre-defined intervals for leaders to provide performance feedback, but more informal personal settings might also influence workers' perception of this resource (Bakker, Demerouti, & Euwema, 2005). Bakker et al. (2012) have demonstrated a positive relation between performance feedback and job engagement, which in turn leads to increased motivation to stay compliant (Hu, Griffin, Yeo, Kanse, & Hodkiewicz, 2018). Constructive feedback from leaders can improve the performance and efficiency of workers, and positive feedback on well-performed work is motivating for employees (Bakker, Demerouti, & Euwema, 2005).

2.4.4 Job Demands

Job demands can be interpreted as factors imposed on or perceived by a workforce that demands something from them to fulfill their role (Demerouti & Bakker, 2011). They are the counterpart of job resources, and "are initiators of a health impairment process" (Demerouti & Bakker, 2011, p. 1). The increasing number of rules, more comprehensive procedures, and standardized roles in the O&G industry are highly demanding on the organization and its individuals on all levels. In other words, the amount of job demands seems to have increased over the years, which might negatively affect the workforce and lead to mistakes and non-compliance (Bakker, Emmerick, & Riet, 2008). However, job demands are not necessarily all negative, but they need to be present in a manageable amount and handled properly to avoid stress and strain (Meijman & Mulder, 1998) (Bakker & Demerouti, 2006). Similar to job resources, there are several job demands which affect the workforce's ability to stay compliant to a varying degree. Some examples of job demands are high workload, production pressure, role ambiguity, emotional demands, time pressure, and a poor physical environment.

Workload is a very important job demand for high-risk industrial businesses. The workers' workload, influenced by an increasing number of procedures, is demanding for the workforce. In addition, the workload also seems to increase due to aging and more maintenance-

demanding equipment (Okoh & Haugen, 2013). If a worker has such high workload that he/she loses control of their job and tasks, their job engagement tends to decrease while strain and stress levels increase (Kühnel, Sonnentag, & Bledow, 2012). Workload also has a clear connection to compliance, and an unmanageable workload often leads to shortcuts and risk-taking with regard to procedures and rules. Further, long hours and high workloads are correlated with workplace accidents and injuries (Petroleumstilsynet, 2019).

Production pressure is another demand which can be prominent in high-risk industrial businesses such as the O&G industry, where produced volume of oil and gas is directly correlated with the success of the business. Several studies have found that production pressure negatively affects safety performance (Hinze & Parker, 1978) (Goldenhar, Williams, & Swanson, 2003), which in turn can be attributed to lacking compliance with procedures (Christian, Bradley, Wallace, & Burke, 2009). Conchie et al. (2013) have also found that production pressure affects the leaders and that their engagement is negatively impacted by high production pressure. Production pressure has also been linked to the under-reporting of minor accidents and near-misses, which is an example of non-compliant behavior (Probst & Graso, 2013). Additionally, production pressure can be highly stressful for the workers, and have a negative impact on their motivation and job engagement.

Another important job demand is role ambiguity, referring to “lack of clarity about duties, objectives and responsibilities needed to fulfil one’s role” (Urien, Osca, & García-Salmones, 2017, p. 139). This can be related to all parts of the work, including unclarity regarding processes and procedures to fill the role (Liu, et al., 2022). Role ambiguity is characterized as a job demand which negatively affects a workforce by enhancing exhaustion and reducing job satisfaction (Urien, Osca, & García-Salmones, 2017). Liu et al. (2022) have also found a connection between role ambiguity and compliance and found evidence to suggest that role ambiguity among workers is negatively correlated with compliance. Thus, leaders should strive to reduce the issue of role ambiguity among their followers.

2.5 Final Research Model

Job demands and resources combine and result in the overall compliance of an organization. Based on the above-mentioned factors from the literature, Figure 4 presents a research model based on the J-DR framework which connects leadership with selected demands and resources to result in compliance. The selected job demands and resources are considered important for an O&G producer to ensure compliance.

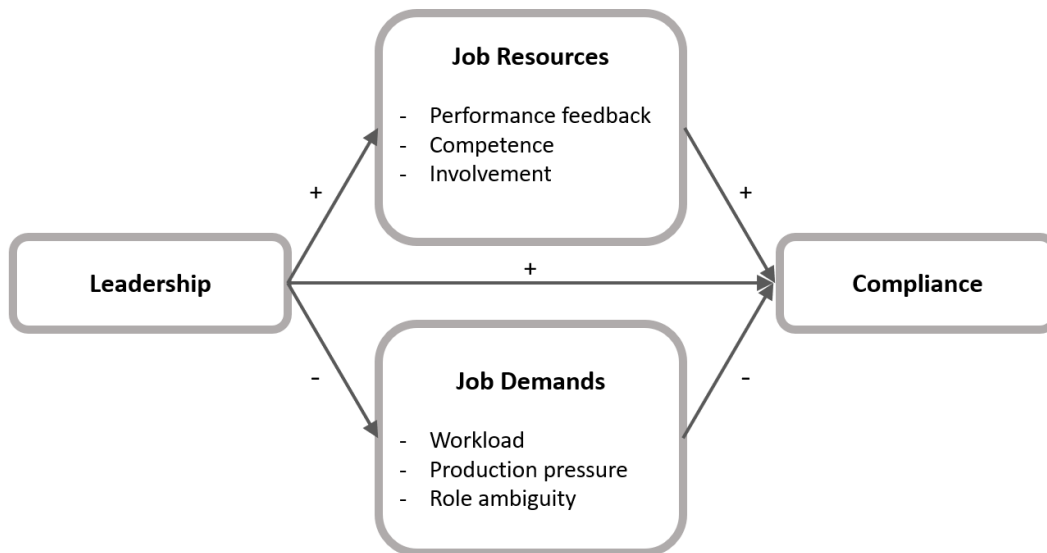


Figure 4: Proposed research model to illustrate relationship between leadership and compliance based on the J-DR framework.

Based on the model, and indicated by the signs on the arrows between the boxes, a set of theoretical assumptions have been generated. These will be addressed in detail later in the study. The assumptions are as follows:

- Leadership is positively related to compliance.
- Leadership is positively related to job resources.
- Leadership is negatively related to job demands.
- Job resources are positively related to compliance.
- Job demands are negatively related to compliance.

The specific resources and demands were chosen based on theoretical support and importance to the theme of this thesis. Performance feedback, competence, and involvement are frequently highlighted in the industry as organizational factors, which the companies put strong emphasis on through frequent compulsory performance assessments where employees are encouraged to speak their minds, and a vast number of courses and

miscellaneous training. It will be an interesting contribution to hear how the workers perceive these factors, and if they are, in fact, motivators that promote compliance.

The chosen job demands are considered particularly interesting due to the nature of the industry in question, being a high-risk business with focus on maximized production. It will be interesting to understand how workers are affected by these job demands, and if they find these to negatively influence their ability to stay compliant.

3 Methodology

This chapter describes how the study was designed and performed. Firstly, the organizational context is described, before the research design, data collection, sampling, and data analysis are explained. Finally, some ethical considerations are mentioned.

3.1 Organizational context

A large O&G-producing facility in the North Sea on the NCS has been studied in the present work. This is considered a highly relevant case to study, as the industry is highly regulated and associated with high-risk operations.

An O&G field is produced based on a license given by the Norwegian authorities to extract hydrocarbons from the ground. This license is oftentimes owned by several companies, that cooperate on large business-related decisions for the field. The actual operation to extract the hydrocarbons, however, is run by one company called the “Operator”. The operator is usually one of the owners of the license, and the remaining owners are hereby referred to as “Partners”, see Figure 5.

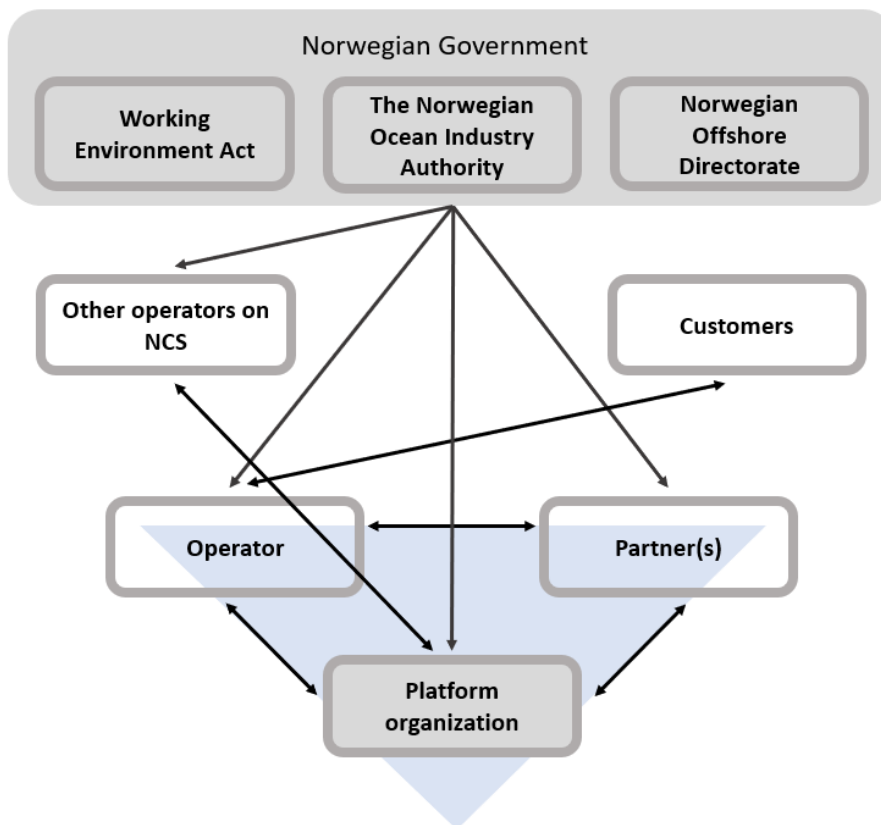


Figure 5: Hierarchy of influencers for NCS platform organizations, inspired by Lofquist, Dyson & Trønnes (2017).

The operators commonly have several O&G-producing facilities, hereby referred to as assets, in their portfolio, which have large on-shore organizations. However, the assets also have their own organizational structures.

Figure 6 shows a generalized organizational chart, with the platform manager as the overall leader. He/she will typically have the closest communication with onshore management and oversee the operations as a whole.

To run the operations, most organizations will have some form of operational managers, with several technical supervisors within each field, e.g. electrical equipment, mechanical equipment, and process equipment. Additionally, it is common for the industry to utilize contractors to perform specific maintenance and corrective work in addition to internally employed skilled workers (Tollaksen, 2021). The organizations will vary based on complexity and size of the asset, and can alter between relatively simple structures to complex branched organizations.

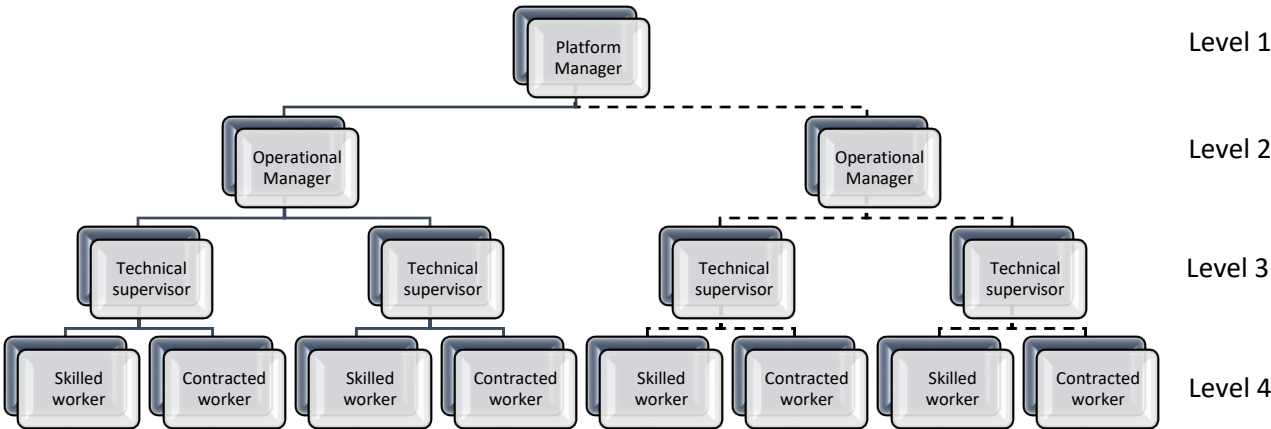


Figure 6: Generalized organizational structure of offshore O&G-producing facilities.

The platform organizations, the operator company, and the partners influence each other, and form a triangle of influencers, see Figure 5. Oftentimes, the platform organizations are also influenced by other operators on the NCS, e.g. by shared export pipelines for their oil and gas products.

The NCS has been closely regulated by Norwegian authorities since the start of exploration in the early 1960s. In 1997, the Petroleum Law was enforced and has been amended numerous times since (Bryhni, 2023). The industry now has an extremely high number of rules and laws that regulate the operations to ensure safety and well-being of workers and the environment (Høivik, Moen, Mearns, & Haukelid, 2009).

O&G operators on the NCS must comply with these laws, which is a comprehensive task. This is demanding for all employees of the business, and lack of compliance is commonly mentioned as a contributing factor to accidents and unwanted occurrences in the industry (Dahl & Olsen, 2013). Further, non-complying behavior from individual employees is identified as a common contributor to workplace incidents (Wang, Wang, & Xia, 2018).

The O&G industry is a high-risk industry, and several fatal accidents have occurred on the NCS. Figure 7 shows fatalities from 1967 to 2017. The number of fatal accidents has steadily decreased since the start in the 1960's, and very few fatalities have occurred in the 2000's except for a major helicopter accident in 2016.

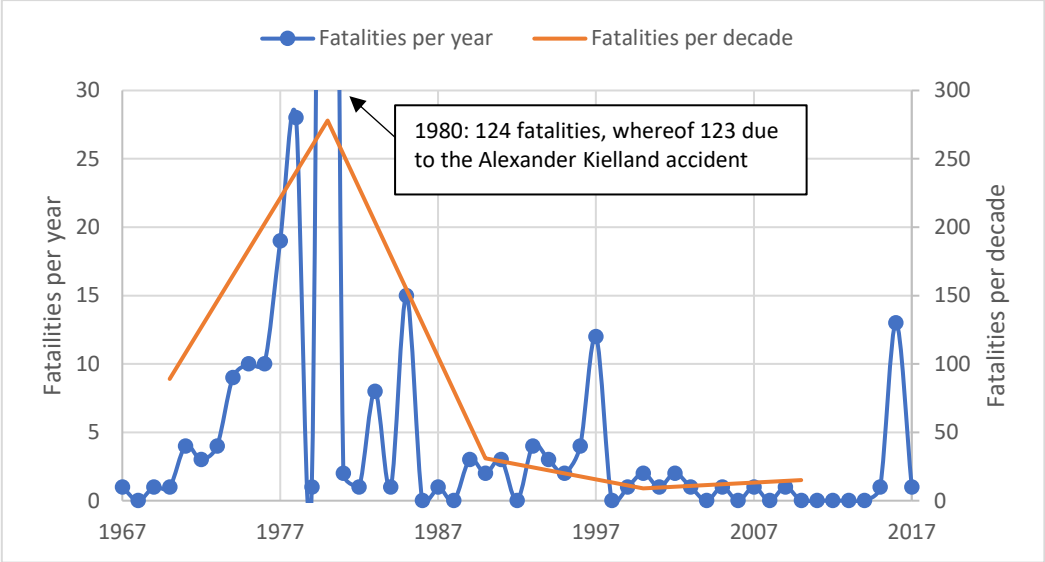


Figure 7: Fatalities on Norwegian continental shelf 1967-2017 (*Katastrofer og store ulykker i norsk petroleumsvirksomhet, 2024*).

Simultaneously, the number of offshore facilities on the NCS has increased dramatically over the past decades, see Figure 8 (Petroleumstilsynet, 2021). This suggests higher activity, resulting in an increased probability for unwanted incidents and a stronger need for regulation. This, in combination with the decreasing number of fatal accidents, clearly indicates improved safety and reduced risk on the facilities.

It is also worth noting that offshore O&G work-related fatalities have been a very small share of total work-related deaths in Norway during the 21st century, see Figure 9. All this combined suggests that the industry has been successful in its safety-enhancing measures and enforcement of regulations, and it seems the operators to a large degree manage to operate compliantly.

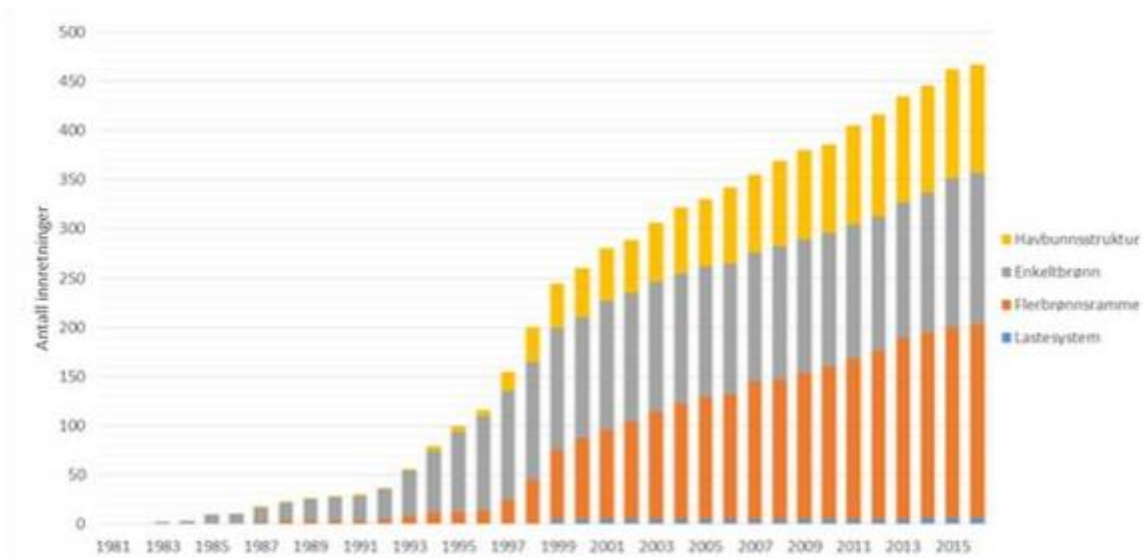


Figure 8: Number of offshore facilities on the Norwegian continental shelf (Petroleumstilsynet, 2021).

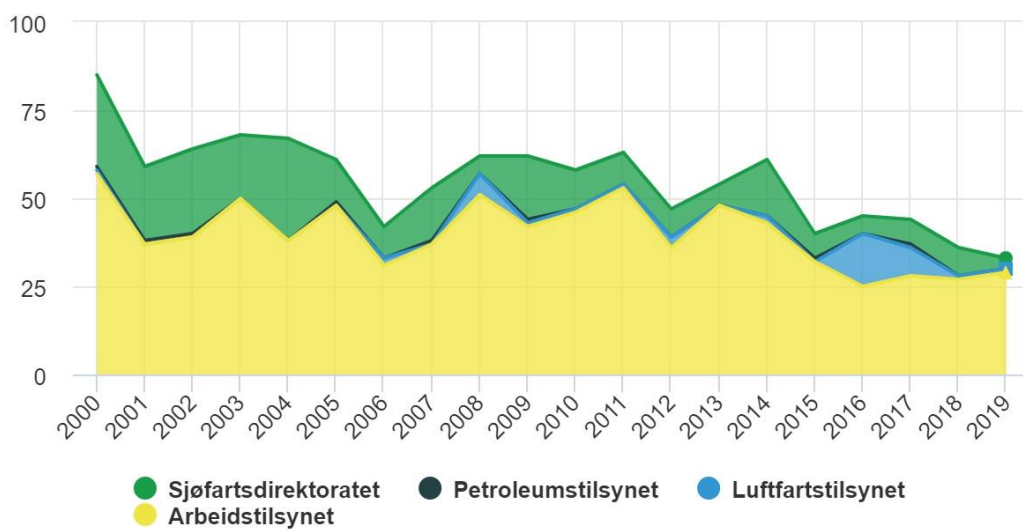


Figure 9: Work-related fatalities in Norway (Berntsen & Wettergreen, 2020). The black line represents fatalities reported to the Petroleum Directorate.

However, with the NCS's increasing age and degrading equipment, there is a continuous need for assessments of technical conditions and barrier performance to ensure compliance and a safe working environment. The industry must undertake significant investments in the future to maintain compliance with existing equipment to uphold production and continue the good safety trends.

3.2 Research design

The research design can be defined as the overall plan to conduct a cohesive and logical study, to ensure proper handling of the questions of interest (Marczyk, DeMatteo, & Festinger, 2010).

This study is designed to enlighten five main assumptions, which were generated based on the theoretical JD-R framework. Two overall research questions have been made based on the assumptions as a frame for the study. A model explaining the relationship between leadership, selected job demands and resources, and compliance was made, and the study was designed based on this model. However, no specific leadership theory was used in the study. Rather a more open approach was utilized for this part of the model. This was a conscious decision and is considered a strength for the study to not limit the informants to one specific leadership theory. In addition, the design was not limited to safety compliance, but rather the general term compliance. Thus, the study utilizes an abductive approach, meaning the conclusions are drawn based on the most plausible explanation without eliminating uncertainty (Persson, 2019).

The study was designed to capture O&G workers' experiences and reflections of the chosen topic. A qualitative approach was chosen, as it is desirable to consider several aspects of this complex problem. Qualitative studies have the advantage of being broader and less restrictive compared to the more fixed quantitative studies (Maxwell, 2009). The qualitative approach hence enables enlightenment of factors not directly focused in the model, but that the informants find important. This is considered a strength for the study, and open-minded, free-speaking statements were crucial to enlighten the assumptions satisfactorily. Thus, a relatively free research design, where informants were allowed to speak freely was chosen. This leads to a more iterative design and a more inductive approach, as the obtained data is used to supplement the theory and chosen concepts (Srivastava & Hopwood, 2009).

3.3 Data collection

Data collection for this study was mainly retrieved through interviews based on a qualitative method. The data are primary data, as they have been generated directly from interviews between informants and the responsible researcher for this study (Hassan, 2024).

The interviews were performed in a semi-natural setting. Some were performed physically in a meeting room, while others were performed electronically due to logistical challenges with availability to offshore workers. These were interviewed during the work period of their rotation and thus had to be interviewed electronically.

Collection of data was performed through semi-structured interviews, meaning the interviews addressed specific theoretical concepts while also leaving room for the informants' individual opinions to enlighten the problem in alternative ways (Galletta & Cross, 2013). This approach "creates openings for a narrative to unfold, while also including questions informed by theory" (Galletta & Cross, 2013, s. 2).

An interview guide was prepared in advance of the interviews, with carefully selected questions based on the theoretical J-DR framework through the leadership-compliance model presented in Section 2.5. This was the structured part of the interviews. To capture the freer reflections of the informants, some general questions and their personal perceptions of concepts were added to the interview guide. In addition, a free close-out of the interview was made, to give the informants the possibility to speak freely of what they consider most important aspects related to the problem.

At the start of the interviews, the informants were given a brief introduction to the topic of the study and the reasoning for them being approached in this context.

3.4 Sampling

Since the study utilizes a qualitative approach, a rather small number of informants were selected to obtain in-depth information about the topics of the study from the chosen informants.

Interview objects were chosen based on their position in the organization and their ability to answer the questions. The informants held different positions and responsibilities, but a common factor among all is that they reside on the lowest organizational level (Level 4 in Figure 6). A total of eight informants were interviewed for the study. All interviews were recorded and transcribed, based on consent from the informants.

The main target group of the study was skilled workers, with the primary goal of understanding how offshore workers without line leadership responsibilities perceive leadership and compliance within their organization. The study wants to focus on the workers performing the production- and safety-critical tasks, and how these are affected by their leaders. Therefore, a group of offshore skilled workers were chosen as informants in the study.

The study has focused on one offshore organization on the NCS. This was a deliberate decision to enable increased understanding of one organization. This is beneficial in the sense that all participants have the same leadership and governance, which reduced uncertainties with the results as there are fewer influencing variables.

However, this fact might reduce the transferability as it is highly focused on one rather small organization with its individual challenges and norms. The study should, however, be highly relevant and transferable to all similar organizations, i.e. high-risk industries with hierarchical structures and several leadership levels.

3.5 Data analysis

The output of the research is a set of transcripts from interviews. The interviews were transcribed using the NVivo software. In addition, miscellaneous hand-written notes were taken during the interviews. Each transcript was reviewed immediately after ending the

interview and adjusted as needed based on inaccuracies in the transcribed versions. The adjustments were based on the hand-written notes from the interviewer.

The answers were subsequently categorized into different parts of the leadership-compliance model and connected to the previously made assumptions. The categories were:

1. Compliance
2. Leadership and compliance
3. Leadership and job resources
4. Leadership and job demands
5. Job resources and compliance
6. Job demands and compliance
7. Other

Since the design of the interviews was quite free, some aspects and reflections did not quite fit into the pre-existing model. Therefore, an “Other” category was introduced early on, to capture topics not directly associated with the seven main categories. All the answers in this category were also considered, and the most interesting will be discussed in the subsequent chapters.

Having the collected data categorized in this manner and updated after each interview, enabled a live overview of results and which aspects had been enlightened broadly and which lacked information at any point of the interview phase. In this way, the following interviews could be optimized to emphasize the lacking parts. It is worth noting that all informants were asked the same main questions from the interview guide, but the time management for follow-up questions was slightly adjusted based on the status of each category prior to the interview.

Once all interviews were performed, each category was analyzed in detail and prepared for the results and discussion chapters by collecting similar responses and fragmenting further into sub-topics within each category. Results are supplemented with tables for each main topic, containing relevant quotes for each sub-topic.

In the following Results and Discussion chapters, the responses are presented using the terminology “majority”, “half” and “minority”, see Table 1 for explanation. Since not all informants gave information about all aspects presented in the following chapters, this terminology was chosen instead of exact numbering.

Table 1: Terminology utilized for analysis of results.

Terminology	Explanation
Majority	More than half of the asked informants expressed this opinion.
Half	Half of the asked informants expressed this opinion.
Minority	Less than half of the asked informants expressed this opinion.

3.6 Ethical considerations

All informants gave their voluntary consent to participate in the study. They were ensured the collected data would be anonymized in the thesis, and the remaining data would be deleted once the thesis had been evaluated and approved.

The author of the thesis has a professional connection to the organization in question, in addition to being the initiator and interviewer for this research study. This might influence the results, and cause challenges connected to objectivity, personal relations, and subconscious preferences. The author was well aware of this influence and strived to distinguish the two roles during the entire process, from approaching the informants to execution of the actual interviews. It is believed that this was handled in a professional and proper manner, and the author's standpoint should not be reflected in any results or conclusions of this work.

4 Results

This section provides an overview of the obtained results from the semi-structured interviews divided into different categories connecting the different parts of the leadership-compliance model. Some categories were quite unanimous in the respondents' replies, while others varied greatly. Relevant factors which were not directly focused in the model, but were considered relevant to the topic of the study, are addressed at the end of this chapter under Chapter 4.7.

4.1 Compliance

Firstly, general compliance is focused. The informants give some interesting insights into following procedures and the importance of awareness, knowledge, and quality of them. Some topics and quotes regarding this are presented in Table 2.

There is broad consensus among the informants that compliance is challenging, and that complying to all procedures and routines is difficult. A majority of the informants agree that there is a huge number of procedures to comply with, and even claim that complying to all is unrealistic. This leads to regular non-compliance, and can thus be characterized as an important contributing factor to non-compliance in the industry. However, all informants seem to agree that most production- and safety-critical procedures are followed. One informant specifically mentions that they are selective when it comes to procedures, and often choose not to follow procedures they perceive as bad or unnecessary.

Table 2: Selected interview responses connected to compliance.

Topic	Sub-topic	Quotes
Compliance	Following procedures	<p><i>"Following procedures is a natural part of our job, and shouldn't be too difficult. But this depends on the person."</i></p> <p><i>"It is not easy complying to all procedures".</i></p> <p><i>"It is tempting to make shortcuts once in a while to get the job done faster".</i></p> <p><i>"Due to the extreme number of procedures, you get selective of which you follow and which you do not".</i></p> <p><i>"You make up your mind which are good procedures and which are not, and follow the good ones".</i></p> <p><i>"There are for example procedures for planning jobs, which are completely unrealistic. Everyone knows this, and no one follows them."</i></p> <p><i>"Everyone, both leaders and colleagues, are role models when it comes to compliance."</i></p> <p><i>"Sometimes, we follow procedures due to fear for consequences of not following them."</i></p>
	Awareness and knowledge of procedures	<p><i>"There are many procedures I do not know about."</i></p> <p><i>"Procedures are continuously updated, and it can be difficult to keep up with all the changes".</i></p> <p><i>"I often perform the job based on old habit".</i></p> <p><i>"If some requirements are specifically relevant for our work, these are often presented in common meetings. Otherwise, it heavily depends on individual engagement and initiative".</i></p> <p><i>"I have on my own initiative subscribed to procedures and requirements relevant for my work, but this is in no way mandatory".</i></p> <p><i>"Both leaders and us workers have a pragmatic relationship to procedures."</i></p> <p><i>"We are very drilled in the procedures that are relevant to your daily work, and they are mentioned almost daily."</i></p>

Quality of procedures	<p><i>"The procedures have improved drastically the past years. They did a large update some years back, which resulted in less text and simpler language which made them easier to understand."</i></p> <p><i>"We have good rules and procedures which take care of us. I feel they are useful and there for a reason."</i></p> <p><i>"I am glad that the procedures are there, they make me feel safe."</i></p> <p><i>"Many procedures are simply wrong or outdated".</i></p> <p><i>"Sometimes it might be dangerous to follow the procedures due to their poor quality."</i></p> <p><i>"We are not good enough at demanding update of procedures. This is time-demanding, and no one wants to own the process".</i></p> <p><i>"Some procedures are way too generic, and we need to assess which parts of the procedure are relevant for the current job and which are not. This opens for interpretation, which can be challenging."</i></p>
Culture and attitude	<p><i>"Over time, the procedures become a part of you and a natural part of your day."</i></p> <p><i>"There is a culture offshore that safety and compliance is important, and everyone respects that."</i></p> <p><i>"Over time, you stop getting annoyed about bad or unnecessary procedures and just accept it."</i></p>

4.2 Leadership and Compliance

Though the leadership-compliance model in Figure 10 suggests that job demands and job resources are intermediate steps between leadership and compliance, a direct path between leadership and compliance is also sketched. Therefore, the direct relation between leadership and compliance has been explored, and there is an assumption that leadership is positively related to compliance.

This part of the study is illustrated by the red parts in the leadership-compliance model in Figure 10. Relevant quotes from informants concerning this topic are listed in Table 3, and explanations are presented in the following paragraphs.

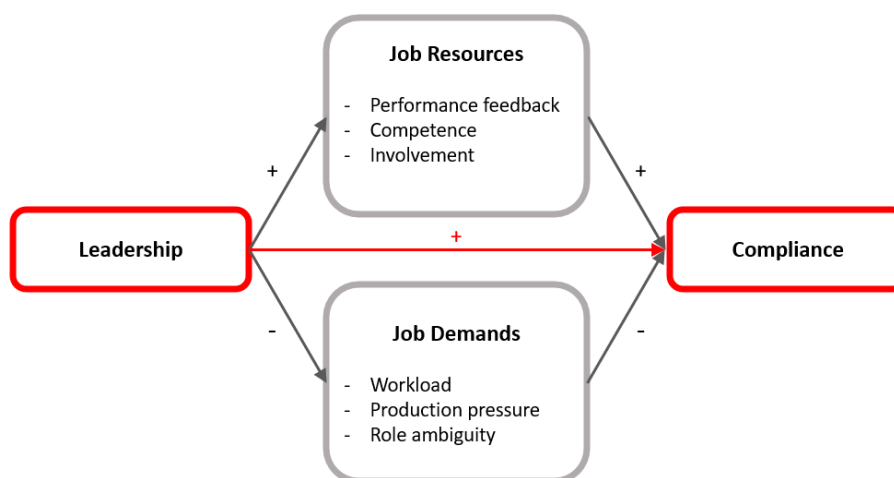


Figure 10: Leadership-compliance model, focused on the relation between leadership and compliance.

Another aspect which is mentioned as a reason for lacking compliance is that they are often not aware of all procedures and routines they need to comply with. They may not have realized that there are procedures with requirements for compliant operation, and perform the job based on old habits. Some see this in connection with leadership and depend on alert leaders for information about procedures. Leader communication is a factor that can promote compliance, and informants agree that procedures which are highlighted by their leaders are easier to comply with. A majority also mention that selected procedures are often highlighted in common meetings and that they are well familiar with procedures affecting their day-to-day work. However, the majority also indicate that keeping updated on other procedures are highly based on their individual initiative.

An additional important factor for compliance is leader awareness and knowledge of procedures. It seems leaders have a profound influence on compliance in the sense that they are instrumental in informing about and identifying lacking procedures before work commences. Additionally, leaders are role models for their followers when it comes to compliance. Informants highlight instances where leaders can affect compliance both positively and negatively by their actions and visibility, which indicates that the leaders' attitude towards compliance influences the workers. The industry is known for having a strong safety focus, including compliance to procedures. This is supported by the informants, who feel that safety becomes a part of their culture over time.

Quality of the procedures is also of importance for compliance, and the majority of the informants think the quality has improved over the past years and that they are useful. However, all of the informants simultaneously agree that there are some outdated, bad, or wrong procedures, which naturally affect the degree of compliance.

Overall, leadership seems to have some clear connections to compliance among the workers. The most profound effects identified in this work are efficient leader communication, and high awareness, knowledge, and attitude towards compliance and procedures. If these leadership traits are strong, compliance seems to improve. Thus, the assumption that leadership positively affects compliance is supported by these findings.

Table 3: Selected interview responses connected to leadership and compliance.

Topic	Sub-topic	Quotes
Leadership and compliance	Leader communication	<p><i>“Generally, compliance to the management systems is very punctual, all the way from management to workers.”</i></p> <p><i>“Oftentimes, the operational leader goes through important procedures in common meetings, but many still go under the radar.”</i></p> <p><i>“We have weekly meetings, where management are good at emphasizing the importance of compliance. I feel that they mean what they say.”</i></p> <p><i>“My leaders promote compliance.”</i></p> <p><i>“When the leaders speak in formal meetings, they claim that we always follow procedures. But this is merely a slide in a presentation. Everyone knows we do not.”</i></p>

Leader awareness and knowledge	<p><i>"The leaders often have a better overview of the procedure framework than us doing the job."</i></p> <p><i>"Leaders will often identify that there is a procedure relevant for this work when I am not aware".</i></p> <p><i>"I have experienced several times that my leader declines my work permit due to missing procedures. Then I have to go back and find the procedure before I can start working."</i></p> <p><i>"Even management are not aware of all relevant procedures."</i></p> <p><i>"You become very dependent on the management to identify relevant procedures".</i></p> <p><i>"Awareness and focus on compliance varies greatly among leaders, and we adjust based on which leader to report to."</i></p>
Leader attitude	<p><i>"There are situations where leaders have negative influence on compliance. Some can be bad examples by not following procedures themselves, which affects us negatively."</i></p> <p><i>"Compliance from high leadership levels have increased lately. This gives a very strong signal effect – if they follow procedures, we do too."</i></p> <p><i>"If an accident were to occur where non-compliance was a contributing factor, I feel that the leaders could easily emphasize that it was caused by an individual error by one of us to keep their own backs clean."</i></p>
Leader influence	<p><i>"Due to the leaders' strong promotion of compliance, we have also become better at following procedures and stop when we are unsure."</i></p> <p><i>"Leaders do often make it a bit too easy for us when preparing the jobs for us. We expect that every relevant procedure and form to do the job correctly is there, and take little responsibility to check. If something is missing, this can often lead to shortcuts."</i></p> <p><i>"The leaders take a passive role when it comes to motivating for compliance. They neither act as motivators nor demotivators."</i></p>

4.3 Leadership and Job Resources

The next part of the study focuses on the influence of leadership on job resources, see Figure 11. Relevant quotes from informants concerning this topic are listed in Table 4, and explanations are presented in the following paragraphs.

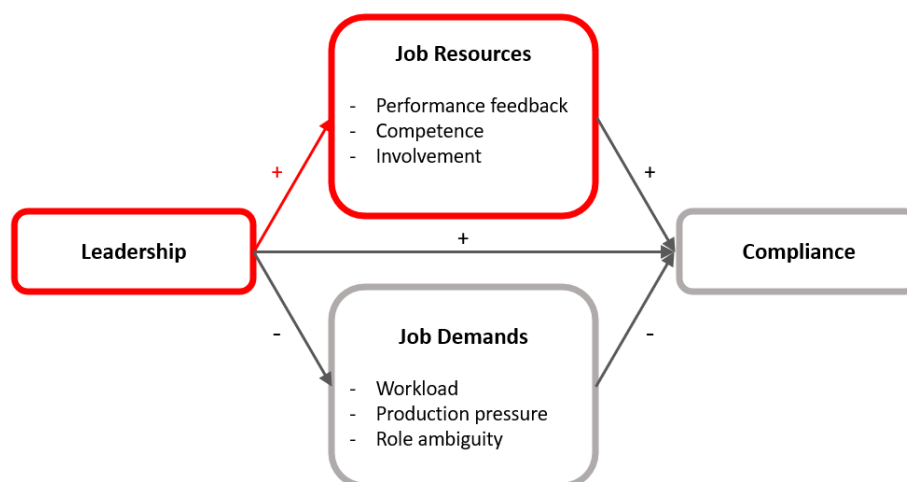


Figure 11: Leadership-compliance model, focused on the relation between leadership and job resources.

The first job resource which has been specifically studied in this work is performance feedback. There is a clear connection between leadership and performance feedback, as a large part of the feedback comes from the leaders. One part of this that the informants emphasize is that leaders need to prioritize time to give feedback. This can be problematic due to the leaders' hectic schedules. Thus, good leadership seems to positively affect degree of performance feedback.

Concerning workers' competence of procedures, leadership also seems to affect this positively when leaders spend time and check procedures together with workers. Several informants claim that the leaders have better knowledge of procedures than them and that this knowledge-sharing increases their own competence. However, half of the informants believe that this knowledge-sharing is not sufficient due to their leaders being too busy. However, a minority of the informants also express concern about the competence of new employees, and that leaders push them to work alone before they have sufficient training. This can be interpreted as poor leadership, which then negatively affects competence. Hence, the assumption that leadership results in high competence seems to be supported.

A third job resource which was focused in this study is involvement. A majority of the informants claim that leader involvement is important to their motivation for safe and compliant work, which increases their own involvement. This indicates that strong leadership is positively related to both leader and member involvement, which both can be important factors for motivation (Dahl & Olsen, 2013) (Korunka, Kubicek, Schaufeli, & Hoonakker, 2009). As for the other job resources, a majority of the informants also express concern about the capacity of their leaders, and that degree of leader involvement is not sufficient due to other important responsibilities.

Overall, strong leadership affects the studied job resources positively, which supports the assumption of the study. One aspect that seems to be challenging when it comes to leader promotion of job resources is the leaders' availability and the fact that they are very busy. This can lead to poor leadership, which in turn negatively affect these job resources.

Table 4: Selected interview responses connected to leadership and job resources.

Topic	Sub-topic	Quotes
Job resources and leadership	Performance feedback	<p><i>"I receive sufficient feedback from my leaders, but I also request it. I know of others who feel differently."</i></p> <p><i>"Degree of feedback for management highly depends on distance to the leaders, and varies greatly among us."</i></p> <p><i>"I am mostly focused on getting the work done, while my leader acts as my shield and says stop when necessary. This definitely influences my degree of compliance."</i></p> <p><i>"We lack the opportunity for informal discussions and feedback due to our busy leaders."</i></p> <p><i>"We are supposed to have 1-on-1 conversations with our leaders every offshore trip. These are often quite short, and we do it since we have to."</i></p> <p><i>"The 1-on-1 is an opportunity to get performance feedback, and I feel that the leaders follow-up and respond to my needs satisfactorily."</i></p> <p><i>"Management is very good at praising us when we have performed an important job well."</i></p> <p><i>"My leader is good at prioritizing formal and informal feedback, but this often leads to less time for ensuring compliance to procedures. The leaders are frankly too busy."</i></p>

Competence	<p><i>“A good leader will take time to look for and at procedures with you. It is important that they show us that they prioritize to spend time on this.”</i></p> <p><i>“We have a lot of new people all the time, which we have to train. A new person often comes before the first one is sufficiently trained. Leaders often ask if the new person is comfortable with working alone, and out of desire to impress he/she says yes. This leads to mistakes and non-compliance.”</i></p> <p><i>“With the current activity level and difficulty of finding personnel, we run the risk of having a whole shift which are not properly trained. Then things might happen...”</i></p>
Involvement	<p><i>“The leaders understand their role as protectors, and involve themselves when necessary.”</i></p> <p><i>“Most leaders are involved with and loyal to our procedures.”</i></p> <p><i>“We as workers are of the impression that the leaders do not have time for us and spend their entire days in meetings.”</i></p> <p><i>“The amount of leaders offshore has decreased lately due to organizational changes, which limits the remaining leaders’ involvement.”</i></p> <p><i>“Being seen and valued by the leaders influences my motivation for compliance.”</i></p> <p><i>“It is important that the leaders are involved in safety-work, and make sure we follow the procedures.”</i></p>

4.4 Leadership and Job Demands

The next part of the study focuses on the influence of leadership on job demands, see Figure 12. As explained in Chapter 2.4.4, job demands can lead to stress and de-motivation for workers, and leaders should try to minimize these. Relevant quotes from informants concerning this topic are listed in Table 5, and explanations are presented in the following paragraphs.

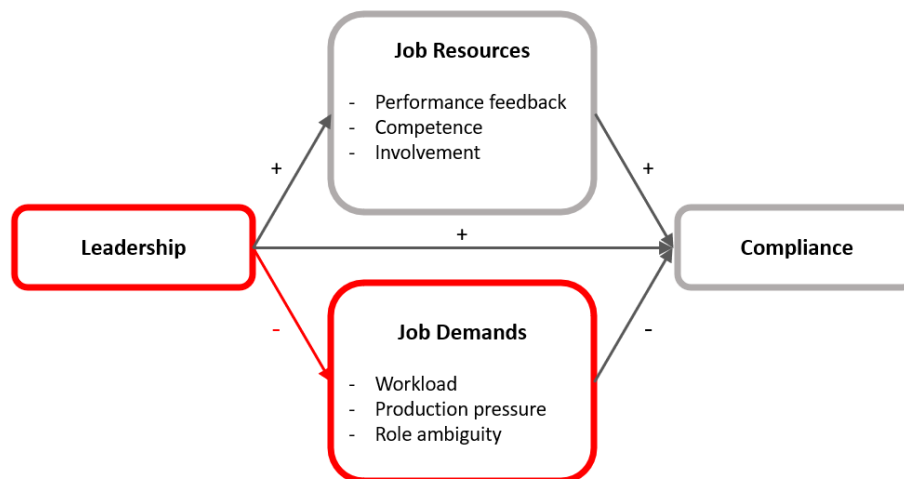


Figure 12: Leadership-compliance model, focused on the relation between leadership and job demands.

All informants in the study agree that the workload for leaders and workers can sometimes be high. As emphasized in the preceding sub-chapter, the workload for leaders is considered so high that it affects their ability to influence their followers’ job resources. Thus, high workload can be said to compromise the quality of leadership, which negatively influences workers’ job resources.

Concerning the workload of workers, results suggest that strong leadership can help ease the negative effects of high workloads. One informant claims that if the leaders are capable of calming down in hectic situations, the workers experience less stress related to the high workload. In addition, leaders directly influence their followers' workload by adjusting the amount of tasks for the day if it is very busy.

One very clear result from the interviews is that a vast majority of the informants experience a profound lack of production pressure from the leaders. One would believe that this factor could be a central job demand for offshore workers, which is a highly production-focused business. However, the majority claim that management has high tolerance to take your time, postpone tasks if you are slightly uncertain, and pick up the next day instead of working overtime. Such leader behavior results in the feeling of low production pressure among workers, and one can thus conclude that leadership negatively affects production pressure. It is worth noting that a minority of the informants still experience some production pressure from management.

Role ambiguity seems to be of varying concern to the informants. Some say that this is highly relevant, while others claim that their roles are clear. However, the majority seem to agree that this lies at a company level, i.e. above the offshore organization illustrated in Figure 6. The offshore leaders try to improve this and offer support when things are unclear, but meet resistance higher up. Thus, it seems that the offshore leaders, which are the focus of this study, do not affect role ambiguity as greatly.

Based on these results, there seems to be evidence to support the assumption that leadership negatively affects job demands, especially for workload and production pressure. The effect on role ambiguity is more debatable, and a stronger connection seems to lie at a different leadership level than the ones focused in this study.

Table 5: Selected interview responses connected to leadership and job demands.

Topic	Sub-topic	Quotes
Job demands and leadership	Workload	<p><i>"Management affects our workload. They try to ease our situation by for example brining in an extra resource, but these processes take time."</i></p> <p><i>"The leaders adjust our workload by making a manageable amount of tasks each day. With this, I feel that the workload is acceptable."</i></p> <p><i>"My leaders are able to calm me down in busy and hectic situations, and avoid stress."</i></p>
	Production pressure	<p><i>"I experience that there is acceptance from the management for spending extra time on a task."</i></p> <p><i>"You get positive backing from management if you stop a production-critical job due to insecurity or checking one extra time. Even if your assessment turned out to be wrong."</i></p> <p><i>"Production pressure was much more prominent before."</i></p> <p><i>"We experience less production pressure from leaders now than a few years ago."</i></p> <p><i>"Some leaders may push for progress, but as soon as you mention it is because the procedure demands it, no one pushes further."</i></p> <p><i>"Oftentimes, we want to work longer to get production going, but the leaders say no."</i></p> <p><i>"No leader thanks you if you work fast but not safely."</i></p> <p><i>"There is production pressure, and there is an expectation from management that problems should be fixed fast."</i></p>

"I feel the leaders are very KPI-focused, which leads to production pressure. I feel we could have gotten better results if the leaders instead made sure we are okay and cared for us."

Role ambiguity *"Role ambiguity is a known challenge. We feel that our organization does not fit into the roles the company defines. The platform leaders try to put focus on this, but I think the onshore organization mostly runs it."*
"Role descriptions are quite general, which can be a bit ambiguous. However, if I don't feel comfortable with a task, the leaders always offer support and try to fix the situation."
"Roles are pretty clear, and we delegate easily among us."
"We do not have trouble delegating roles in my team, and the role division comes naturally."

4.5 Job Resources and Compliance

The second part of the research model focuses on factors influencing compliance. In this part, the influence of job resources on compliance is focused, see Figure 13. Relevant quotes from informants concerning this topic are listed in Table 6, and explanations are presented in the following paragraphs.

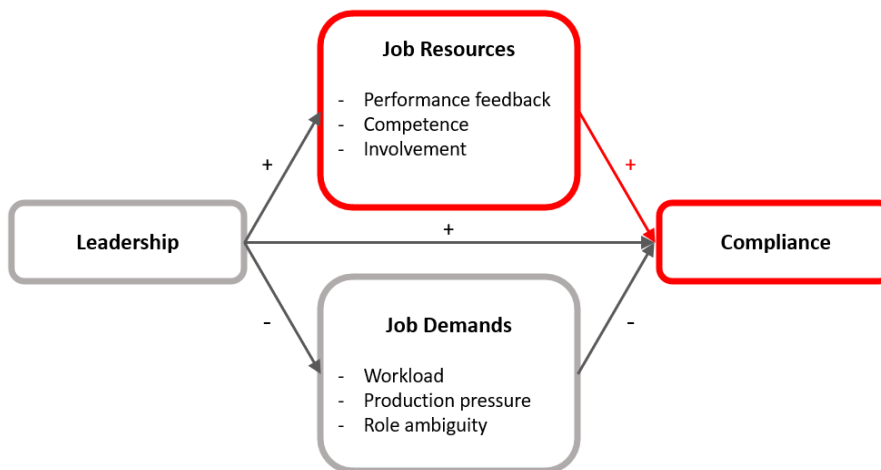


Figure 13: Leadership-compliance model, focused on the relation between job resources and compliance.

Generally, the results support the assumption that performance feedback affects the workers' ability to stay compliant. A majority of the informants state that regular and good feedback both to and from leaders increases their ability and motivation to ensure compliance. Feedback seems connected to the feelings of being appreciated and seen, which increases job satisfaction and motivation for compliance among the workers. This supports previous findings from Hu et al. (2018).

Secondly, the degree of competence about procedures seems to strongly influence the workers' ability to stay compliant. A majority of the informants express that they have not received sufficient training to know and understand all procedures, which in turn negatively affects their compliance with these procedures. The degree of competence also varies among

the workers based on experience, personality, and motivation. Thus, the results show that high competence levels among workers, both concerning the procedures and the technical aspects, positively affect compliance.

When it comes to involvement, it seems that being involved in changing and updating procedures motivates workers as it increases their curiosity and feeling of being seen and heard. The degree of worker involvement in the studied organization seems unsatisfactory, and half of the informants claim that they are usually informed about new or changed procedures rather than involved. This lack of involvement appears to drastically reduce their motivation to involve themselves in future changes, which also increases their distance to the procedures. The distance will in turn lead to lower knowledge of procedures, which has been argued previously to reduce compliance.

To summarize, the results support the assumption that all three job resources positively affect compliance. Sufficient performance feedback, high competence, and strong involvement are thus factors that can promote compliance in the O&G industry.

Table 6: Selected interview responses connected to job resources and compliance.

Topic	Sub-topic	Quotes
Job resources and compliance	Performance feedback	<p><i>“Performance feedback definitely affects my ability to stay compliant.”</i></p> <p><i>“Generally, feeling seen and heard by my leaders through feedback both ways make me more satisfied and I want to do a good job, including following procedures.”</i></p> <p><i>“Positive performance feedback, both from leaders and colleagues, affects my ability to stay compliant by them recognizing me and the efforts I make.”</i></p> <p><i>“If we suggest changes or adjustments to procedures, we receive very little or no feedback unless we ask for it.”</i></p>
	Competence	<p><i>“We do not have sufficient competence to understand and follow all procedures. There are courses, but these are not good enough.”</i></p> <p><i>“Training is mostly internal. We try and test a little.”</i></p> <p><i>“Technical competence is important to assess quality of the procedures.”</i></p> <p><i>“I think that the ones who have least knowledge and experience are the ones who are best at looking up procedures. The more experienced workers have stronger beliefs in their abilities and are of the impression that they do not need the procedures. “It takes years of experience to really fuck up.”</i></p> <p><i>“Degree of competence when it comes to procedures and the management system is quite scattered. We have some who have very little knowledge about this, and it takes time to learn.”</i></p> <p><i>“When I don’t have competence about the relevant procedures, I need to spend time on my computer to look it up. That can lead to remarks about why I have not yet started the work and instead spend time in my office. This affects my efficiency.”</i></p>
	Involvement	<p><i>“The fact that I’m involved in what’s going on affects my curiosity, including my curiosity to look up and understand procedures.”</i></p> <p><i>“I am not much involved in changing or updating procedures. Most of the time, changes are introduced from the onshore organization that we have not been involved with whatsoever.”</i></p> <p><i>“Oftentimes, things are cooked up onshore without having any involvement from the people actually doing the work. This is evident in many of our procedures, which makes them not hit with us. This decreases motivation for following that procedure.”</i></p> <p><i>“We get informed about new or changed procedures, but are not sufficiently involved.”</i></p> <p><i>“I have tried to involve myself in changing procedures that are wrong, but I have not been heard and the suggestions have been dismissed though they know this leads to non-</i></p>

compliance with procedures. This makes me less satisfied and negatively affects my motivation to involve myself in improvement of procedures.”

4.6 Job Demands and Compliance

This section focuses on the influence of job demands on compliance, see Figure 14. Relevant quotes from informants concerning this topic are listed in Table 7, and explanations are presented in the following paragraphs.

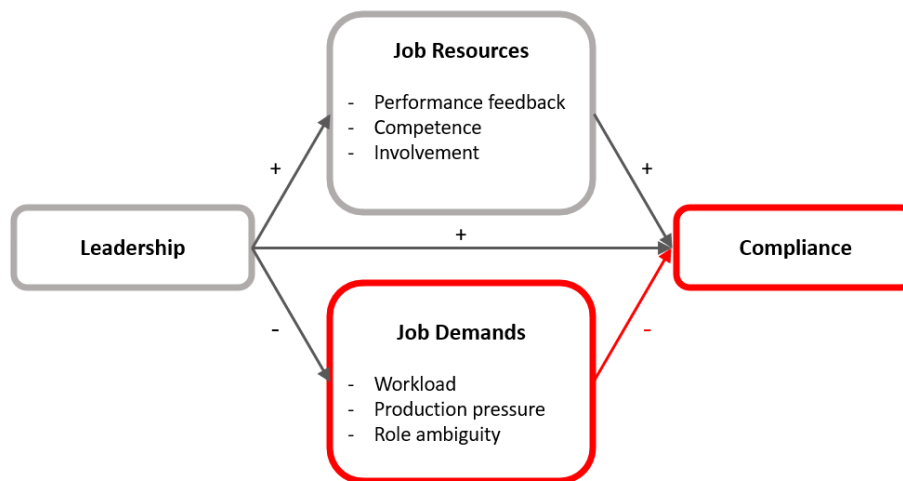


Figure 14: Leadership-compliance model, focused on the relation between job demands and compliance.

A majority of the informants agree that their workload is too high, and they do not have sufficient resources to get everything done. They are continuously under-manned and need to prioritize the most important jobs and leave the rest undone. There is also no buffer to handle unexpected situations. They are selective of how they prioritize and have minimal time to go through and understand procedures. It can therefore be assumed that this lacking focus and prioritization of procedures affects their compliance negatively. It is also emphasized that some procedures could be removed to ease their workload, indicating a perception of redundant and unnecessary procedures.

One compelling observation is that all the informants express a strong acceptance for compromising production efficiency for compliance to procedures. Thus, the workers do not experience strong production pressure and do not feel that this affects their ability to stay compliant. One informant even states that they are praised for losing production due to the fact they were unable to follow procedures. Several of the more experienced informants also expressed that production pressure has significantly reduced over the past years and that this has improved their compliance with procedures.

Regarding role ambiguity, a minority of informants see this as a prevalent issue in their organization. However, the ones that do find roles a bit unclear and ambiguous express that this can be de-motivating for their work in general, including compliance with procedures.

On the whole, the results seem to support the assumption that job demands negatively affect compliance, though the influence of role ambiguity is rather vague. This is in line with results from Chapter 4.4, which did not find a clear connection between leadership and role ambiguity either. Literature has found evidence to support these connections though, and the lack of results from this study is probably due to the limited perception of role ambiguity among the selection of informants. This result might indicate that role ambiguity is less prominent for offshore organizations in the Norwegian O&G industry.

Table 7: Selected interview responses connected to job demands and compliance.

Topic	Sub-topic	Quotes
Job demands and compliance	Workload	<p><i>“Our workload without a doubt affects compliance.”</i></p> <p><i>“We have busy days, and there is little time to understand procedures and keep updated. This time factor is very important.”</i></p> <p><i>“It is difficult to prioritize to go through procedures due to all the other time-critical work.”</i></p> <p><i>“The number of procedures does not affect our workload, but they make it more confusing.”</i></p> <p><i>“I guess some of the procedures could be removed to ease our workload. No industry has as many procedures as ours, but at the same time they are there for a reason and often due to previous incidents.”</i></p> <p><i>“When it’s busy, it is frustrating and stressful to look up and follow procedures.”</i></p> <p><i>“You could probably find something wrong with most jobs we perform, but we have to get the work done.”</i></p>
	Production pressure	<p><i>“There is generally no pressure to do things fast.”</i></p> <p><i>“Everyone accepts if tasks are postponed if the procedure demands it. No one pushes you to not follow the procedure”.</i></p> <p><i>“You receive positive recognition if we lose production due to the fact that we were not able to follow requirements of a procedure.”</i></p> <p><i>“There is no pressure to do things fast. There is acceptance that things take time to do properly.”</i></p> <p><i>“There can be some pressure to get critical work done, but I don’t feel the pressure is so high that there isn’t room to do the job safely and correctly.”</i></p> <p><i>“Regardless of the situation, we are never encouraged by management to not follow procedures.”</i></p> <p><i>“Despite the production pressure, us workers rarely take shortcuts.”</i></p>
	Role ambiguity	<p><i>“The challenge of role ambiguity has improved lately, though it is still a problem. But it can still be de-motivating and tricky to handle.”</i></p>

4.7 Other Factors Influencing Compliance

This section presents some results which are not directly linked to the research model, but are still considered relevant to highlight.

Table 8 lists some topics and quotes which will be further presented below.

The first topic to be highlighted is the systems, meaning the company tools and software to find and manage procedures. All procedures are stored and updated in an online management system, and the quality and user-friendliness of this system seem to affect compliance. Several

informants highlight this as important to their degree of compliance, and they find it important to have an easily maneuverable system to efficiently find what they need.

Further, the importance of leader continuity and availability are mentioned by several informants. Frequent change-out of leaders and re-organizations seem to affect the workers' ability to stay compliant negatively, and some informants state that the leader-member trust decreases due to this. Their job satisfaction and motivation are also negatively influenced by this, and they feel it increases their distance to the leaders. Concerning availability, this seems to be connected to workload, as the leaders' busy schedules make them less available for the workers. A minority of the informants mention this as an issue when it comes to compliance, and one which has increased recently. Since none were asked specifically about continuity or availability, but rather brought them up independently, it seems these job resources are important and should be studied further.

Another aspect that some informants enlighten is their work arrangement, meaning their rotation scheme and work hours. In the studied organization, they work two weeks offshore with four weeks off in between. When they are at work for the two-week period, they work 12-hour shifts each day. This is a quite special and unusual arrangement, and based on interview responses it seems to affect compliance. Again, this was not specifically focused in the study and thus not directly asked for in the interview. However, some informants brought up that the extended free period of four weeks can make it challenging to return to their work. One mentions specifically that procedures are almost forgotten by the next time they arrive. This can negatively affect compliance, especially in light of the high workload and the fact that they do not prioritize checking procedures each trip and depend more on memory.

Another topic which was brought up by some was the effect of the Covid-19 pandemic. An interesting finding here, is that new procedures were generated and introduced very quickly, and the quality of the procedures suffered from this. Poor quality procedures in turn opened for interpretation of the content and varying execution. This result indicates that it is important to spend time when making procedures and have proper quality checks before introducing them to workers. Otherwise, it seems the procedures are less likely to be followed properly.

An interesting finding is that many informants express that a result of various job demands and resources is their engagement. For instance, several informants state that more knowledge of and involvement in procedures increases their engagement. This in turn is positively associated with compliance, as their motivation to follow procedures increases. One informant gave an example of a situation where he/she involved themselves in changing a procedure, but the suggestions were promptly rejected by management. This severely reduced his/her engagement to participate in future revisions, and the informant even stated that this led to non-compliance with this specific procedure. Thus, results support an assumption that job resources and demands go via job engagement before compliance.

Table 8: Other selected topics and interview responses connected to compliance.

Topic	Sub-topic	Quotes
Job resources	Systems	<p><i>"There is often need to a lot of maneuvering and clicking in the management system to reach the correct procedures."</i></p> <p><i>"Oftentimes when looking up procedures, I get interrupted by someone or something since the system is very difficult to navigate. I need to spend some time to find what I am looking for."</i></p> <p><i>"We definitely have a way to go when it comes to user-friendliness of our management system, where our procedures lie."</i></p> <p><i>"We must have the right tools available to ensure compliance, both physical and digital."</i></p> <p><i>"Over the past years, the management system has improved, and there are now simpler processes which guide you to relevant procedures easier than before."</i></p>
	Continuity	<p><i>"We get new leaders all the time."</i></p> <p><i>"By the time you have started to build trust with your leader, they change roles."</i></p> <p><i>"The frequent leader changes increase our distance to management, which makes me less engaged and motivated."</i></p>
	Availability	<p><i>"It is important that the leaders are visible. This has moved in the wrong direction recently."</i></p> <p><i>"There is a big distance between management and workers. It seems that the company strategy and meeting culture eats so much of their time that they do not have the opportunity to be good and active leaders."</i></p> <p><i>"Many leaders have more focus upwards in the organization rather than down. This creates a division between leader and worker."</i></p>
Job demands	Work arrangement	<p><i>"I can easily go a whole offshore trip without looking at any procedures, and I am extremely selective of where I spend my time."</i></p> <p><i>"When you get back to work after a free period, it can be challenging to remember the procedures again."</i></p>
	Pandemic-specific procedures	<p><i>"We were bombarded with new procedures to avoid spread of infection."</i></p> <p><i>"The procedures were interpreted in so many different ways, resulting in different rules at different physical locations. This shows very clearly that outcome of procedures is highly dependent on who reads them and which starting point they have."</i></p>
Job engagement		<p><i>"When I do not receive any feedback on my suggestions, I lose my engagement to participate."</i></p> <p><i>"By understanding and knowing why the procedures are there, I get more engaged and motivated to follow them."</i></p> <p><i>"Generally, feeling seen and heard by my leaders through feedback both ways make me more satisfied and I want to do a good job, including following procedures."</i></p> <p><i>"Oftentimes, things are cooked up onshore without having any involvement from the people actually doing the work. This is evident in many of our procedures, which makes them not hit with us. This decreases motivation for following that procedure."</i></p> <p><i>"I have tried to involve myself in changing procedures that are wrong, but I have not been heard and the suggestions have been dismissed though they know this leads to non-compliance with procedures. This makes me less satisfied and negatively affects my motivation to involve myself in improvement of procedures."</i></p>

5 Discussion

This chapter discusses the obtained results from the study. The results are used to answer the pre-defined research questions and purposes. Further, some additional factors are discussed, before a revised research model is presented.

5.1 JD-R, Leadership and Compliance

Based on the presented results from Chapter 4, the JD-R framework seems to be an efficient way of exploring the connection between leadership and compliance in the Norwegian O&G sector, as most of the focused job resources and demands are connected to both leadership and compliance. Thus, the overall results can be said to confirm the validity of the research model, with its accompanying assumptions, presented in Chapter 2.5.

The results also support the assumption that there is a direct link between leadership and compliance, which does not go through any job resources or demands. However, the J-DR framework can still be argued to be a valuable addition to better understanding of the relationship between leadership and compliance, as many additional aspects were highlighted through the job resources and demands routes.

Hence, the J-DR framework can increase understanding of leadership and compliance in the Norwegian O&G sector by highlighting specific aspects that affect compliance. This can be valuable for organizations and leaders, as the study identifies some specific resources and demands that could be focused to improve compliance. This will likely be much more tangible and easier to improve than improving general leadership, as the job resources and demands are more concrete. The results of the study can also be used to pick some of the job resources and demands to focus on, both for leaders and follower compliance, to attack this issue in a manageable way.

For this approach, it would be natural to focus on the resources and demands that are found to influence compliance most strongly. Regarding job resources, all three of them were found to positively affect compliance. However, one prominent issue regarding job resources is the leaders' availability and time to invest sufficient time in promoting these. Especially performance feedback and involvement are factors that are highly dependent on the leader, and based on the result of the study it would be advisable to invest more time at the leader level for such promotions. Regarding job demands, workload seems to be the factor which is most negatively associated with compliance among workers. Therefore, results seem to suggest that the workload of both leaders and workers is an essential contributing reason for non-compliance. Leaders' workload makes them unable to sufficiently follow up on important job resources, while high workload among workers is a job demand that negatively influences compliance.

5.2 Complexity of Job Resources and Demands

Effects of different job resources and demands are not always easily distinguishable, as they might affect and blend into each other. One example that became evident in this study is the job resources' negative association with workload. The results support the assumption that

job resources are positively connected to compliance, but at the same time, they will demand something from the organization. High-quality performance feedback and involvement will increase the workload for leaders, while elevated competence will increase workers' workload. This is highlighted by several informants, and it seems the organizations need to find a proper balance between prioritizing job resources while upholding a manageable workload. This is a challenging task, and it seems resources are strained as they are, so there is little room for more focus on important job resources. However, there might be room for re-prioritization, and the results from this study could make it easier to identify which areas to focus their finite resources.

It is also known that different resources and demands can affect each other. For instance, a previous study has found that performance feedback can positively affect workload, by reducing the feelings of overload and exhaustion among workers (Bakker, Demerouti, & Euwema, 2005). Similarly, leadership involvement has been shown to positively affect workers' competence levels (Dahl & Olsen, 2013), suggesting prioritizing these resources can have positive effects on other important job resources as well. Thus, improving certain job resources can have broadened effects, by indirectly influencing compliance through other job resources and demands as well. This is also supported by the results of this study, which suggest that involvement and performance feedback increases the workers' competence and understanding of procedures, while simultaneously reducing production pressure.

Further, some factors can also act as both resources and demands, depending on the situation and person perceiving them. For instance, proper and often performance feedback can be an important motivational resource for some in the organization, while it acts more like a job demand for others which is distracting and de-motivating. A similar argument can be made for involvement, as many find this motivating and increases understanding of procedures. However, it can also have negative effects, especially when workers feel they are not being properly heard or taken seriously. Hence, these factors can both enhance and counteract compliance. It seems that leadership is highly important to workers' perception of these resources and demands. Based on results from the study, it seems that the more relation-based leadership aspects, for instance, trust, understanding, and communication, are most important for workers' motivation for compliance. Though formal competence through courses and training is important, it seems that leader involvement, performance feedback, and communicated priority of compliance are stronger influencers of compliant operations.

5.3 Factors the JD-R Model does Not Cover

The J-DR framework, which has been used as the basis for this study, cannot explain all contributing factors of compliance. For example, the J-DR framework does not consider the effect of individualistic behaviors like different attitudes and personality traits. It is suspected that such factors will also influence the outcomes of this study, as the personalities and backgrounds of the informants will influence their responses.

It is a well-known fact that different personalities affect decisions in all aspects of life. Some are quite agreeable and open to suggestions, while others are more cautious and closed (Digman, 1990). Workers' personalities will also influence their performance at work, e.g., concerning quality, efficiency, and compliance to procedures (Hurtz & Donovan, 2000). This also becomes evident from the informants in this study, and their personalities shine through in their responses as some are more accepting of and content with the leaders' instructions while others decide for themselves which procedures they follow or not.

Additionally, our attitudes will also likely influence how work is performed, as varying experiences and backgrounds affect intentions and behaviors toward performing tasks at work (Ajzen, 1991). Such effects can be found in the interview responses of this study as well. The informants have varying experience in the industry, and while some have worked in the same offshore organization their whole careers others have worked in totally different industries previously. This seems to affect their attitude towards compliance. Informants who have worked outside the industry seem to be of the impression that demands for compliance and the number of procedures are much more prevalent in the O&G industry and that it might be slightly exaggerated at times. On the other hand, workers who have spent their entire careers at one place, and often have less experience, seem more accepting of the procedures and do generally not question the need to follow them.

5.4 Revised Leadership-Compliance Model

Based on the obtained results, a revised research model is proposed, which might broaden the understanding of leadership and compliance in the O&G sector if studied in detail. The revised model adapts the job resources and demands by removing or adding some based on the results from this study. Additionally, other aspects to improve the model for further research are discussed.

All studied job resources in this work, i.e., performance feedback, competence, and involvement, were found to positively relate to both leadership and compliance which supports the pre-defined assumptions. Therefore, for further studies, the author recommends going in-depth into other job resources which this study has found indications of being important for compliance. This is not to say that performance feedback, competence, and involvement are not interesting to study further, but for expansion of this model and broadened understanding, it would be highly interesting to also include alternative job resources. The resources which are suggested to include are systems, continuity, and availability. Results supporting the influence of these are presented in Chapter 4.7.

Concerning job demands, the author has chosen to keep workload in the revised model. Based on the results, this seems to be the most influential contributor for non-compliance, and also affects the other resources and demands greatly. It is also expected that workload of leaders will affect their continuity and availability, which are introduced as new resources in the model. Therefore, studying this further in light of the other resources could be of high value.

A second interesting job demand is work arrangement, which some informants suggest influences their compliance with procedures. It is therefore suggested to study this in more detail and explore how the offshore workers' extended time off and long workdays affect compliance.

Both literature and results from this study suggest that several job resources and demands go via job engagement before arriving at compliance. Therefore, it is suggested that job engagement is introduced as an intermediate step before compliance. Thus, the revised research model is illustrated in Figure 15.

Another adjustment that could be considered is to study the effect of a specific leadership theory. Especially LMX, which focuses on the relational part between leader and follower, would be interesting to study further as these aspects were found to be the most prominent leader effects on compliance. This modification has not been included in the revised research model but could be considered as an additional aspect in a future study.

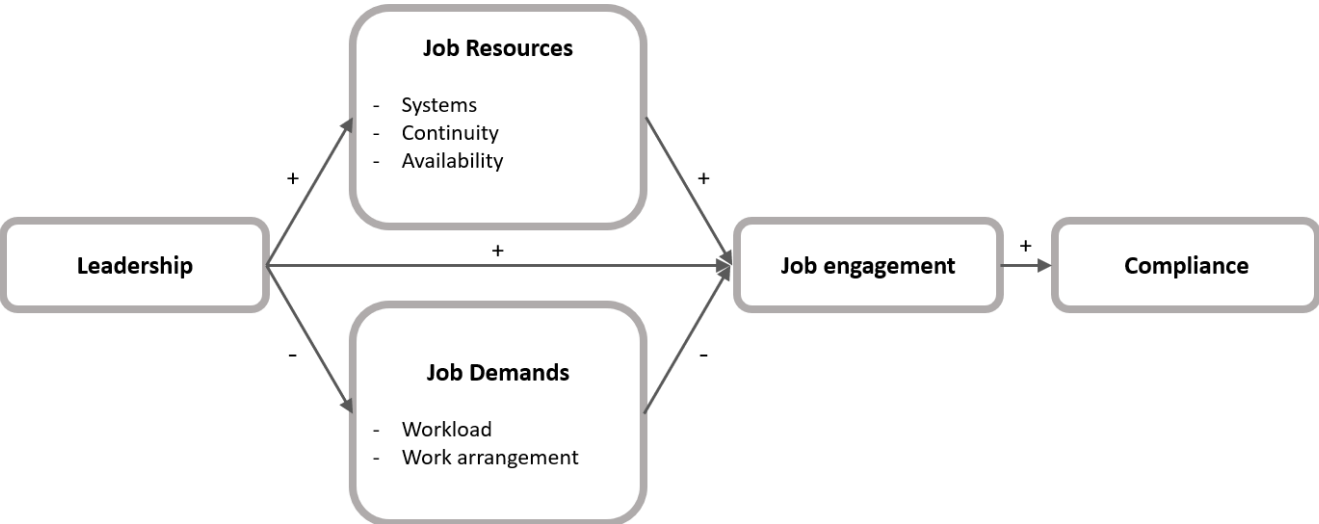


Figure 15: Revised research model.

6 Conclusions

The main purpose of this study was to demonstrate through a semi-structured qualitative study of a Norwegian O&G organization how the J-DR model can be used to increase understanding of leadership and compliance in this industry. A second objective was to identify other mechanisms than the ones specifically studied that could enhance understanding of the topic further.

Based on the obtained results, the following conclusions can be drawn:

- Results generally support the validity of the research model and pre-defined assumptions.
- Performance feedback, involvement, and workload seem to be the most influential job resources and demands on compliance.
- Production pressure and role ambiguity are not prominent negative influencers of compliance for the studied selection.
- Systems, continuity, availability, and work arrangement have been identified as resources and demands to study further.
- Job engagement seems to affect compliance, and is suggested as an intermediate step before compliance in the research model.

Thus, it can be concluded that the research model is suitable for the investigated data, and the results of the study can provide valuable insight into factors to focus on to improve compliance of Norwegian O&G organizations.

6.1 Opportunities for Further Research

The results have concluded in a revised research model, shown in Figure 15. It is recommended to use this model as the basis for further research and include systems, continuity, availability, and work arrangement as new factors to explore in detail. Further, it is suggested to include job engagement as part of the research model.

Additionally, it is recommended to study LMX leadership in specific, as such leader traits seem to affect compliance most strongly.

For future research, it would be interesting to broaden the target group and check validity and transferability of the obtained results through focusing on a different offshore organization. For instance, the results might differ for a movable rig or supply ship, and age and size of the offshore installation will likely also influence the results. Therefore, it would be a valuable contribution to expand the target group accordingly.

Including factors outside the J-DR framework, for instance various personality or attitude factors, could be a valuable addition to broaden the understanding of leadership and compliance. For instance, the Theory of Planned Behavior or The Big Five Personality Factors could be used to build a similar study.

References

- Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 179-211.
- Bakker, A., & Demerouti, E. (2006). The Job Demands-Resources model: state of the art. *Journal of Managerial Psychology*, 309-328.
- Bakker, A., & Demerouti, E. (2017). Job demands-resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, 273-285.
- Bakker, A., Demerouti, E., & Euwema, M. (2005). Job Resources Buffer the Impact of Job Demands on Burnout. *Journal of Occupational Health Psychology*, 170-180.
- Bakker, A., Demerouti, E., & Xanthopoulou, D. (2012). How do Engaged Employees Stay Engaged? *Ciencia & Trabajo*, 15-21.
- Bakker, A., Emmerick, H., & Riet, P. (2008). How job demands, resources, and burnout predict objective performance: A constructive replication. *Anxiety, Stress, & Coping*, 309-324.
- Barling, J., Kelloway, E., & Iverson, R. (2003). High-Quality Work, Job Satisfaction, and Occupational Injuries. *Journal of Applied Psychology*, 276-283.
- Barling, J., Loughlin, C., & Kelloway, E. (2002). Development and test of a model linking safety-specific transformational leadership and occupational safety. *Journal of Applied Psychology*, 488-496.
- Bass, B., & Riggio, R. (2005). *Transformational Leadership*. New York: Psychology Press.
- Bensonch, C., Argyropoulos, C., Dimopoulos, C., Mikellidou, C., & Boustras, G. (2022). Analysis of safety climate factors and safety compliance relationships in the oil and gas industry. *Safety Science*, 1-7.
- Berntsen, Ø., & Wettergreen, J. (2020). *33 døde i arbeidsulykker*. Retrieved from Statistisk Sentralbyrå: <https://www.ssb.no/helse/artikler-og-publikasjoner/33-dode-i-arbeidsulykker>
- Bryhni, I. (2023). *Norges kontinentalsokkel*. Retrieved from Store norske leksikon: https://snl.no/Norges_kontinentalsokkel
- Burns, J. (1978). *Leadership*. New York: Harper & Row.
- Bye, R., Vinnem, J., Sørskår, L., Grønlund, C., Pytte, M., Gjørund, G., & Standal, M. (2023). *Endrede rammebetingelser og konsekvenser for arbeidsmiljø og sikkerhet i petroleumsvirksomheten*. Safetec.
- Cambridge Advanced Learner's Dictionary*. (2013). Cambridge University Press.
- Christian, M., Bradley, J., Wallace, J., & Burke, M. (2009). Workplace safety: A meta-analysis of the roles of person and situation factors. *Journal of Applied Psychology*, 1103-1127.
- Clarke, S. (2013). Safety leadership: A meta-analytic review of transformational and transactional leadership styles as antecedents of safety behaviours. *Journal of Occupational and Organizational Psychology*, 22-49.

- Conchie, S., Moon, S., & Duncan, M. (2013). Supervisors' engagement in safety leadership: factors that help and hinder. *Safety Science*, 109-117.
- Dahl, Ø., & Olsen, E. (2013). Safety compliance on offshore platforms: A multi-sample survey on the role of perceived leadership involvement and work climate. *Safety Science*, 17-26.
- Dansereau, F., Graen, G., & Haga, W. (1975). A vertical dyad linkage approach to leadership within formal organizations: A longitudinal investigation of role making process. *Organizational Behavior and Human Performances*, 46-78.
- Dekker, S. (2014). The bureaucratization of safety. *Safety Science*, 348-357.
- Dekker, S., & Woods, D. (2010). The high reliability organization perspective. *Human Factors in Aviation*, 123-143.
- Demerouti, E., Le Blanc, P., Bakker, A., Schaufeli, W., & Hox, J. (2009). Present but sick: A three-wave study on job demands, presenteeism and burnout. *Career Development International*, 50-68.
- Demerouti, E., & Bakker, A. (2011). The Job Demands-Resources model: Challenges for future research. *Journal of Industrial Psychology*, 1-9.
- Demerouti, E., & Bakker, A. (2022). Job demands-resources theory in times of crises: New propositions. *Sage Journals*, 209-236.
- Demerouti, E., Bakker, A., Nachreiner, F., & Schaufeli, W. (2001). The job demand-resources model of burnout. *Journal of Applied Psychology*, 499-512.
- Demerouti, E., Mostert, K., & Bakker, A. (2010). Burnout and Work Engagement: A Thorough Investigation of the Independency of Both Constructs. *Journal of Occupational Health Psychology*, 209-222.
- Digman, J. (1990). Personality structure: Emergence of the five-factor model. *Annual review of psychology*, 417-440.
- Donovan, S., Salmon, P., Horberry, T., & Lenné, M. (2018). Ending on a positive: Examining the role of safety leadership decisions, behaviours and actions in a safety critical situation. *Applied Ergonomics*, 139-150.
- Fang, D., Huang, Y., Guo, H., & Lim, H. (2020). LCB approach for construction safety. *Safety Science*.
- Flin, R., & Yule, S. (2004). Leadership for safety: industrial experience. *Quality & Safety in Health Care*, 45-51.
- Galletta, A., & Cross, W. (2013). *Mastering the Semi-Structured Interview and Beyond: From Research Design to Analysis and Publication*. New York University Press.
- Gasslekkasjene i Østersjøen. (2022, October 7). Retrieved from nrk.no: <https://www.nrk.no/spesial/gasslekkasje-nord-stream-1.16120306>
- Gillet, N., Fouquereau, E., Huyghebaert, T., & Colomat, P. (2015). The Effects of Job Demands and Organizational Resources through Psychological Need Satisfaction and Thwarting. *Spanish Journal of Psychology*, 1-19.
- Goldenhar, L., Williams, L., & Swanson, N. (2003). Modeling relationships between job stressors and injury and near-miss outcomes for construction laborers. *Work & Safety*, 218-240.

- Goldenhar, L., Williams, L., & Swanson, N. (2003). Modelling relationships between job stressors and injury and near-miss outcomes for construction labourers. *Work & Stress*, 218-240.
- Graen, G., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *Leadership Quarterly*, 219-247.
- Griffin, M., & Hu, X. (2013). How leaders differentially motivate safety compliance and safety participation: The role of monitoring, inspiring, and learning. *Safety Science*, 196-202.
- Griffin, M., & Neal, A. (2000). Perceptions of Safety at Work: A Framework for Linking Safety Climate to Safety Performance, Knowledge, and Motivation. *Journal of Occupational Health Psychology*, 347-358.
- Grill, M., & Nielsen, K. (2019). Promoting and impeding safety – a qualitative study into direct and indirect safety leadership practices of constructions site managers. *Safety Science*, 148-159.
- Gun, R. (1993). The role of regulations in the prevention of occupational injury. *Safety Science*, 47-66.
- Hassan, M. (2024, March 26). *Primary Data - Types, Methods and Examples*. Retrieved from reserachmethod.net: <https://researchmethod.net/primary-data/>
- Havtil. (2023). *Utviklingstrekk norsk sokkel 2023 - Risikonivå i norsk petroleumsvirksomhet*. Havindustritilsynet.
- Hinze, J., & Parker, H. (1978). Safety: Productivity and job pressures. *Journal of the Construction Division*, 27-34.
- Hofmann, D., Morgeson, F., & Gerras, S. (2003). Climate as a moderator of the relationship between leader-member exchange and content specific citizenship: Safety climate as an exemplar. *Journal of Applied Psychology*, 170-178.
- Hu, X., Griffin, M., Yeo, G., Kanse, L., & Hodkiewicz, M. (2018). A new look at compliance with work procedures: An engagement perspective. *Safety Science*, 46-54.
- Hurtz, G. M., & Donovan, J. (2000). Personality and Job Performance: The Big Five Revisited. *Journal of Applied Psychology*, 869-879.
- Høyvik, D., Moen, B., Mearns, K., & Haukelid, K. (2009). An explorative study of health, safety and environment culture in a Norwegian petroleum company. *Safety Science*, 992-1001.
- Høyland, H., & Normann, S. (2022, September 1). *Narve kapret drømmejobben etter at han mistet oljejobben*. Retrieved from nrk.no: https://www.nrk.no/rogaland/rekordlav-arbeidsledighet_-narve-endresen-kapret-drommejobben-etter-at-han-mistet-oljejobben-1.16084900
- Jiang, Z., Zhao, X., Wang, Z., & Herbert, K. (2024). Safety leadership: A bibliometric literature review and future reserach directions. *Journal of Business Research*.
- Kampevoll, F., Lorch-Falch, S., & Jobling, W. (2023, November 20). *Da staten ga milliarder til Norges rikeste selskaper*. Retrieved from nrk.no: <https://www.nrk.no/norge/oljeskattepakken-ble-fulgt-av-flere-tusen-utenlandske-innleide-og-enorme-overskudd-1.16405838>
- Kapp, E. (2012). The influence of supervisor leadership practices and perceived group safety climate on employee safety performance. *Safety Science*, 1119-1124.

- Katastrofer og store ulykker i norsk petroleumsvirksomhet*. (2024). Retrieved from Wikipedia: https://no.wikipedia.org/wiki/Katastrofer_og_store_ulykker_i_norsk_petroleumsvirksomhet
- Kongsnes, E. (2024). Equinor presser kontraktene, og økonomi trumfer sikkerheten. Stavanger Aftenblad.
- Kongsvik, T., Fenstad, J., & Wendelborg, C. (2012). Between a rock and a hard place: Accident and near-miss reporting on offshore service vessels. *Safety Science*, 1839-1846.
- Korunka, C., Kubicek, B., Schaufeli, W. B., & Hoonakker, P. (2009). Work engagement and burnout: Testing the robustness of the Job Demands–Resources model. *The Journal of Positive Psychology*, 243-255.
- Kvalheim, S., & Dahl, Ø. (2016). Safety compliance and safety climate: A repeated cross-sectional study in the oil and gas industry. *Journal of Safety Research*, 33-41.
- Kühnel, J., Sonnentag, S., & Bledow, R. (2012). Resources and time pressure as day-level antecedents of work engagement. *Journal of Occupational and Organizational Psychology*, 181-198.
- Liu, L., Mei, Q., Skogstad, A., Wu, J., Liu, S., & Wang, M. (2022). Linking Safety-Specific Leader Reward and Punishment Omission to Safety Compliance Behavior: The Role of Distributive Justice and Role Ambiguity. *Frontiers in Public Health*, 1-12.
- Lofquist, E., Dyson, P., & Trønnes, S. (2017). Mind the gap: A qualitative approach to assessing why different sub-cultures within high-risk industries interpret safety rule gaps in different ways. *Safety Science*, 241-256.
- Lu, C., & Yang, C. (2010). Safety leadership and safety behavior in container terminal operations. *Safety Science*, 123-134.
- Lyubych, Z., Tuner, N., Hershcovis, M. S., & Deng, C. (2022). A Meta-Analysis of Leadership and Workplace Safety: Examining Relative Importance, Contextual Contingencies, and Methodological Moderators. *Journal of Applied Psychology*, 2149-2175.
- Marczyk, G., DeMatteo, D., & Festinger, D. (2010). *Essentials of research design and methodology*. John Wiley & Sons.
- Martin, R., Thomas, G., Legood, A., & Russo, S. (2018). Leader-member exchange (LMX) differentiation and work outcomes: Conceptual clarification and critical review. *Journal of Organizational Behavior*, 151-168.
- Maxwell, J. (2009). Designing a Qualitative Study. In *The SAFE Handbook of Applied Social Research Methods* (pp. 214-253). SAGE Publications.
- Mehta, R., & Thomas, S. (2018). Effects of Time Pressure and Experience Level on Worker Perceived Workload: Implications for Procedural Designs in High-Risk Industrial Tasks. *Human Factors and Ergonomics Society*, 1610-1615.
- Meijman, T., & Mulder, G. (1998). Psychological Aspects of Workload. In P. Drenth, H. Thierry, & C. de Wolff, *A Handbook of Work and Organizational Psychology* (pp. 5-33). Erlbaum.
- Midttun, Ø. (2024). Ingen kompromisser fra regjeringen. *Dialog - Et tidsskrift fra havindustriilsynet*, pp. 8-11.

- Mullen, J. (2004). Investigating factors that influence individual safety behavior at work. *Journal of Safety Research*, 275-285.
- Mullen, J., & Kelloway, E. (2009). Safety leadership: a longitudinal study of the effects of transformational leadership on safety outcomes. *Journal of Occupational and Organisational Psychology*, 253-272.
- Neal, A., & Griffin, M. (2004). Safety climate and safety at work. *The psychology of workplace safety*, 15-34.
- Neal, A., & Griffin, M. (2006). A Study of the Lagged Relationships Among Safety Climate, Safety Motivation, Safety Behavior, and Accidents at the Individual and Group Levels. *Journal of Applied Psychology*, 946-953.
- Neal, A., Griffin, M., & Hart, P. (2000). The impact of organizational climate on safety climate and individual behavior. *Safety Science*, 99-109.
- Okoh, P., & Haugen, S. (2013). Maintenance-related major accidents: Classification of causes and case study. *Journal of Loss Prevention in the Process Industries*, 1060-1070.
- Olsen, E., Næss, S., & Høyland, S. (2015). Exploring relationships between organizational factors and hydrocarbon leaks on offshore platform. *Safety Science*, 301-309.
- Persson, C. (2019). *Abduksjon: Metoden for å finne den beste forklaringen*. Retrieved from forskning.no: <https://www.forskning.no/om-forskning-samfunnsvitenskap/abduksjon-metoden-for-a-finne-den-beste-forklaringen/1317339>
- Petroleumstilsynet. (2019). *Arbeidsbelastning*. Retrieved from rnnp.no: <https://www.rnp.no/sporreskjema/arbeidsmiljo/psykososialt-og-organisatorisk/arbeidstidsbelastning/>
- Petroleumstilsynet. (2021). *Risikonivå i petroleumsvirksomheten - Akutte utslipp, 2005-2020, norsk sokkel (RNNP-AU)*.
- Pilbeam, C., Doherty, N., Davidson, R., & Denyer, D. (2016). Safety leadership practices for organizational safety compliance: Developing a research agenda from a review of the literature. *Safety Science*, 110-121.
- Probst, T., & Graso, M. (2013). Pressure to produce = pressure to reduce accident reporting? *Accident Analysis and Prevention*, 580-587.
- Rundmo, T., Hestad, H., & Ulleberg, P. (1998). Organisational factors, safety attitudes and workload among offshore oil personnel. *Safety Science*, 75-87.
- Ryggvik, H., & Smith-Solbakken, M. (2023, January 26). *Norsk oljehistorie*. Retrieved from snl.no: https://snl.no/Norsk_oljehistorie
- Skarsaune, E. (2023, November 28). *Sikkerhet på sokkelen: Statsråder må møte i Stortinget for å svare*. Retrieved from aftenbladet.no: <https://www.aftenbladet.no/okonomi/i/l3oazG/sikkerhet-paa-sokkelen-statsraader-maa-moete-i-stortinget-for-aa-svare>
- Skaugrud, I. (2011). *How do organizational factors affect compliance?* Masters Thesis: University of Stavanger.

- Slitor, D. (2000). Measuring Safety and Compliance in the U.S. Offshore Oil and Gas Industry. *SPE International Conference on Health, Safety and Environment in Oil and Gas Exploration and Production*. Stavanger, Norway.
- Srivastava, R., & Hopwood, N. (2009). A Practical Iterative Framework for Qualitative Data Analysis. *International Journal of Qualitative Methods*, 76-84.
- Ta, M., Kim, T., & Gausdal, A. (2022). Leadership styles and safety performance in high-risk industries: a systematic review. *Safety and Reliability*, 10-44.
- Thorsen, H. (2013). *Monitorering av storulykkerisiko i drift av offshore installasjoner*. Stavanger: University of Stavanger.
- Tollaksen, T. (2021, September 7). *Ståle Kyllingstad: - Norsk industri er helt avhengig av bemanningsbransjen*. Retrieved from e24.no: <https://e24.no/energi-og-klima/i/G3092V/staale-kyllingstad-norsk-industri-er-helt-avhengig-av-bemanningsbransjen>
- Tsao, M.-L., Hsieh, C.-J., & Chen, L. (2017). The role of management commitment and employee involvement in safety management. *International Journal of Organizational Innovation*, 52-74.
- Urien, B., Osca, A., & García-Salmones, L. (2017). Role ambiguity, group cohesion and job satisfaction: A Demands-Resources Model (JD-R) Study from Mexico and Spain. *Revista Latinoamericana de Psicología*, 137-145.
- Wang, D., Wang, X., & Xia, N. (2018). How safety-related stress affects workers' safety behavior: The moderating role of psychological capital. *Safety Science*, 247-259.
- Willis, S., Clarke, S., & O'Connor, E. (2021). Identifying the optimal safety leader: a person-centered approach. *Journal of Managerial Psychology*, 226-240.
- Wu, C., Yao, H., Ning, X., & Wang, L. (2021). Emergence of Informal Safety Leadership: A Social-Cognitive Process for Accident Prevention. *Production and Operations Management*, 4288-4305.
- Wu, T., Chen, C., & Li, C. (2008). A correlation among safety leadership, safety climate and safety performance. *Journal of Loss Prevention in the Process Industries*, 307-318.
- Yammarino, F., Dionne, S., Chun, J., & Dansereau, F. (2005). Leadership and levels of analysis: A state-of-the-science review. *The Leadership Quarterly*, 879-919.
- Yang, L. Q., Zheng, X., Liu, X., Lu, C. Q., & Schaubroeck, J. M. (2020). Abusive supervision, thwarted belongingness, and workplace safety: A group engagement perspective. *Journal of Applied Psychology*, 230-244.
- Yukl, G. (2012). Leadership. In *Cases in Leadership* (pp. 1-42). Thousand Oaks.
- Yukl, G. (2013). *Leadership in Organizations*. Pearson.
- Zohar, D. (2000). A group-level model of safety climate: Testing the effect of group climate on microaccidents in manufacturing jobs. *Journal of Applied Psychology*, 587-596.
- Zohar, D. (2002). The effects of leadership dimensions, safety climate, and assigned priorities on minor injuries on work groups. *Journal of Organizational Behaviour*, 75-92.

Appendix A Interview guide

Innledning

1. Hvilke type arbeidsoppgaver har du offshore?
2. Hvor lenge har du jobbet du offshore?
3. Har du opplevd ulykker eller nestenulykker offshore?

Etterlevelse

1. Er det enkelt å etterleve prosedyrer? (Hvorfor/Hvorfor ikke?)
 - a. Hva er utfordringene med etterlevelse av prosedyrer?
 - b. Er det realistisk å etterleve alle prosedyrer?
2. Hvorfor er det viktig med etterlevelse?
3. Er det noen områder der du tenker at etterlevelse ikke er så viktig?

Ledelse

1. Hva er viktige arbeidsoppgaver for ledelsen?
2. Promoterer ledelsen etterlevelse av prosedyrer?
 - a. Hvordan reagerer ledelsen på manglende etterlevelse?
 - b. Hvem er hovedpådrivere for etterlevelse?
 - c. Motiverer ledelsen deg til å etterstrebe etterlevelse?
 - d. Har du noen eksempler på slike situasjoner?
3. Påvirker ledelsen deres evne til å etterleve prosedyrer? (Positivt/Negativt?)
 - a. Har du noen eksempler på at ledelse påvirker etterlevelse av prosedyrer?
 - b. Evalueres dere på etterlevelse? Hvordan?
 - c. Hvordan kommuniserer lederen din viktigheten av etterlevelse?
 - d. Hvordan promoterer plattformledelsen fokus på etterlevelse?
 - e. Hvordan påvirker ledelsen din arbeidshverdag?

Ressurser

1. Anser du at det er balanse mellom krav som stilles og ressurser dere besitter?
2. Får du tilstrekkelig tilbakemelding fra ledelsen på ditt arbeid?
 - a. Hvordan påvirker dette etterlevelse av prosedyrer?
 - b. Får dere tilstrekkelig tilbakemelding for å skjønne hvorfor det er viktig å etterleve prosedyrer?
 - c. Hva betyr tilbakemelding fra ledelsen for etterlevelse av prosedyrer?
3. Har dere tilstrekkelig kompetanse til å vite hvilke prosedyrer dere skal etterleve?
 - a. Har ledelse innvirkning på kompetanse? Hvordan kan ledere påvirke kompetansen til ansatte?
 - b. Hva betyr kompetanse for etterlevelse av prosedyrer?

- c. Har dere tilstrekkelig kompetanse til å forstå prosedyrene dere skal etterleve?
 - d. Har du/dere tilstrekkelig kompetanse til å utføre arbeidsoppgavene deres innenfor alle krav og rammer? Hvordan påvirker dette etterlevelse av prosedyrer?
4. Er du tilstrekkelig involvert i beslutningstaking som påvirker din arbeidshverdag?
- a. Hvordan påvirker dette din evne til å etterleve prosedyrer?
 - b. Har ledelse innvirkning på din involvering?
 - c. Hvordan kan ledere påvirke involveringen til ansatte?
 - d. Hva betyr involvering for etterlevelse av prosedyrer?
 - e. Er lederen din/plattformledelsen tilstrekkelig involvert i etterlevelsesarbeid? Hvordan påvirker dette etterlevelse av prosedyrer?
 - f. Involveres dere tilstrekkelig i utarbeidelse og oppdatering av prosedyrer?

Krav

- Er arbeidsmengden din håndterlig for deg?
 - a. Hvordan påvirker dette etterlevelse av prosedyrer?
 - b. Har ledelse innvirkning på din arbeidsmengde?
 - c. Hvordan kan ledere påvirke arbeidsmengden til ansatte?
 - d. Hva betyr arbeidsmengde for etterlevelse av prosedyrer?
 - e. Gjør mengden prosedyrer det vanskelig å holde arbeidsmengden håndterlig?
- Opplever du press for å holde produksjon gående?
 - a. Hvordan påvirker dette etterlevelse av prosedyrer?
 - b. Har ledelse innvirkning på produksjonspress?
 - c. Hvordan kan ledere påvirke grad av produksjonspress for ansatte?
 - d. Hva betyr produksjonspress for etterlevelse av prosedyrer?
- Er din rolle/ansvarsområde klart definert?
 - a. Hvordan påvirker dette etterlevelse av prosedyrer?
 - b. Har ledelse innvirkning på rolle-/ansvarsklarhet?
 - c. Hvordan kan ledere påvirke rolleklarheten til ansatte?
 - d. Hva betyr rolleklarhet for etterlevelse av prosedyrer?

Oppsummering/Avslutning

- Hvilke aspekter i arbeidshverdagen påvirker din evne til å etterleve prosedyrer mest positivt?
- Hvilke aspekter i arbeidshverdagen påvirker din evne til å etterleve prosedyrer mest negativt?
- Hva synes du er de viktigste faktorene for å opprettholde etterlevelse av prosedyrer?
- Har du andre kommentarer eller noe du vil legge til omhandlende dette?