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## **Navigating Compliance Behavior: The Impact of Leadership, Job Resources, and Job Demands in Offshore Work**

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This study explores how leadership, job resources, and job demands affect compliance with procedures within an Oil and Gas organization on the Norwegian Continental Shelf. The topics were examined through a semi-structured qualitative study. Eight informants from one Oil and Gas offshore organization were interviewed. All informants were skilled workers with relevant competence and experience. The job demands-resources model (JD-R) was merged with leadership and compliance in an overall research model. Several job resources and demands were specifically focused on. Based on the results, the following conclusions can be drawn; 1) Leadership availability is crucial: Leaders' limited availability and time significantly impact compliance. This is particularly true for performance feedback and worker involvement, which require leader interaction. Addressing this constraint is key. 2) Workload is the primary obstacle: High workload negatively affects both leaders (reducing their ability to support resources) and workers (reducing time for engaging with procedures). Managing workload is essential for improving compliance. 3) Other job resources matter: Beyond the initially studied resources, "systems," "continuity," "availability," and "work arrangement" are identified as potentially important and should be investigated further. These should be considered when designing interventions to improve compliance. 4) Job engagement is a key mediator: job engagement reflects a crucial link between resources/demands and compliance. Fostering job engagement is likely to improve compliance. 5) Relational leadership is more effective: Trust, communication, and understanding (relational leadership) are suggested to be more influential on compliance than formal training alone. Developing these relational aspects of leadership should be prioritized. 6) Focus on performance feedback and involvement: While important for compliance, these job resources depend heavily on leader interaction and are often hindered by limited leader availability. Solutions need to be found to make these resources more readily available. 7) Production pressure and role ambiguity are less significant: While not identified as major negative influencers in this study, these factors shouldn't be entirely dismissed in other contexts.

**Keywords:** Compliance, procedures, leadership, job resources, job demands, job satisfaction

### **1. Introduction**

Companies within the O&G industry invest heavily in Safety Management Systems (SMS). The belief is that safety management systems with multiple procedures will protect the companies from major and minor accidents. Compliance with procedures is often a proxy for safety performance, as adherence to standardized processes reduces the likelihood of errors and accidents (Olsen et al., 2015). Non-compliance in the O&G industry can lead to catastrophic accidents (Bly, 2011), motivating an increased understanding of compliance levels. However, compliance does not always guarantee safety, as procedures may not account for all real-world scenarios. Hence, the notion that procedures alone will take care of safety

by itself is a major simplification of risk understanding and does not align well with a system understanding of safety. Procedures alone are no guarantee against accidents.

Managers and front-line workers may have major discrepancies in perceptions of deviations from work procedures (Mendoza et al., 2024). Front-line workers admit to more deviations than managers estimate and often cite intentional reasons for deviating from procedures, whereas managers often assume non-compliance is due to mistakes. The reasons behind deviations are varied, including environmental, organizational, task-related, and individual factors. Hence, the differences between 'work as imagined' (WAI) and 'work as done' (WAD) reflect theoretically

pervasive and well-known barriers to the examination of human performance at work (Mendoza et al., 2024).

This study aims to conduct a qualitative study within the O&G industry, digging deeper into the understanding of factors that directly and indirectly influence compliance. Firstly, we will use the job demands-resources (JD-R) model, introduced by Demerouti et al. (2001), to better understand the relationship between job demands and job resources and how these affect the level of compliance. Secondly, we will add leadership to the JD-R model and investigate how leadership mechanisms may be related to job demands, job resources, and compliance. The study will address the research gap identified by previous studies, which have often focused on specific safety behaviors rather than the broader construct of compliance (Dahl & Olsen, 2013). Ultimately, this research seeks to provide a more nuanced understanding of compliance in the O&G sector, moving beyond simplistic explanations and offering practical insights for improving safety and operational effectiveness. By exploring the interplay of job demands, resources, and leadership, we aim to identify key leverage points for fostering a culture of compliance and minimizing the risks associated with non-compliance.

## 2. Theoretical background

In recent decades, the safety landscape has become increasingly regulated and standardized. While this has undoubtedly led to improvements in safety performance, it can also have unintended consequences, such as stifling innovation, increasing workload, and limiting individual autonomy (Dekker S., 2014). As the industry continues to evolve, with increased activity levels, aging infrastructure, and cost-cutting pressures, maintaining high safety standards becomes even more challenging. Organizations must carefully prioritize safety measures and adopt effective leadership practices to navigate these complexities. To address these challenges, organizations should focus on identifying and implementing the most valuable safety-enhancing measures. This involves a thorough assessment of specific risks and hazards, and the development of targeted interventions. Strong leadership is also essential in fostering a positive safety culture and ensuring that

safety is prioritized at all levels of the organization (Lyubykh, Tuner, Hershcovis, & Deng, 2022).

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 1 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 analyse 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).

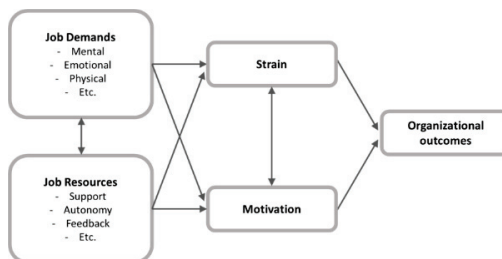


Fig. 1. The job demands-resources model, adapted from Bakker & Demerouti, (2006).

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.

### 2.1. Final research model

Job demands and resources combine and influence the overall compliance of an organization. Figure 2 presents a research model based on the J-DR framework which connects leadership with selected demands and resources, influencing compliance. The selected job demands and resources are considered important for an O&G producer to ensure compliance.

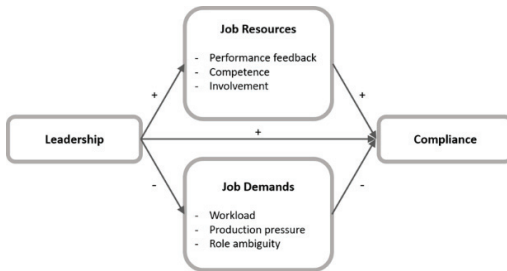


Fig. 2. Proposed research model to illustrate the relationship between leadership and compliance based on the J-DR framework.

Based on the model, and indicated by the signs on the arrows between the boxes, a set of theoretical assumptions have been generated. The assumptions are as follows:

1. Leadership is positively related to compliance.
2. Leadership is positively related to job resources.
3. Leadership is negatively related to job demands.
4. Job resources are positively related to compliance.
5. Job demands are negatively related to compliance.

The specific resources and demands were chosen based on theory and research. Performance feedback, competence, and involvement are frequently highlighted in the industry as organizational factors, which the companies use 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 investigate how the workers perceive these factors and if they are, in fact, motivators that promote compliance.

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

### 3. Methods

#### 3.1. Qualitative method

This study used qualitative research to explore the intricate relationships between leadership, job demands and resources, and compliance within a specific Norwegian oil and gas (O&G) organization. The research design was guided by the theoretical framework reflected in Figure 2.

This qualitative study explored the interplay of leadership, job demands/resources, and compliance within a single offshore organization on the Norwegian Continental Shelf. A conceptual model guided the research, but a non-specific leadership approach and focus on general (not just safety) compliance allowed for a broader understanding. Eight semi-structured interviews were conducted with workers in semi-natural settings (physical and electronic) using a pre-prepared guide, enabling both structured discussion and open exploration. Interviews were recorded and transcribed with participant consent. Validity and reliability were addressed through rigorous methodology. Transferability is limited by the specific context of the Norwegian O&G industry and the study's focus on non-supervisory workers directly involved in production and safety-critical tasks. However, this focused approach strengthens internal validity. Dependability was ensured through structured interviews, recordings, transcriptions, and systematic thematic analysis.

#### 3.2. 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 project was approved by the Norwegian Agency for Shared Services in Education and Research (Ref. number 772406).

### 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.

#### 4.1. Compliance

The interviews revealed key insights into compliance practices, highlighting both challenges and positive aspects. While informants generally acknowledged the importance of following procedures, several recurring themes emerged:

##### Challenges with Compliance:

- **Overwhelming Number of Procedures:** A clear majority of informants felt burdened by the sheer volume of procedures, with some stating that adhering to all of them was unrealistic. This perceived overload contributes significantly to non-compliance, as individuals often become selective in which procedures they follow. One informant explicitly admitted to choosing which procedures to follow based on their perceived value. Examples included unrealistic job planning procedures that were routinely ignored.
- **Knowledge Gaps and Keeping Up with Changes:** Many informants admitted to being unaware of certain procedures, and highlighted the difficulty of staying current with frequent updates. This often led to reliance on established habits rather than updated procedures. While some organizations presented key requirements in meetings, individual initiative was often necessary to stay informed.
- **Varying Quality of Procedures:** The quality of procedures was a point of contention. While some informants praised recent improvements in clarity and usability, others criticized procedures for being outdated, incorrect, overly generic, or even potentially dangerous. The lack of a clear process for updating procedures, coupled with the time investment required, was also noted. This ambiguity in procedure quality led to individual interpretation and selective application, further contributing to non-compliance.

##### Positive Aspects of Compliance:

- **Importance of Safety-Critical Procedures:** Despite the challenges, all informants agreed that production- and safety-critical procedures were generally followed. This suggests a strong safety culture where compliance to essential procedures is prioritized.
- **Positive Cultural Influence:** Some informants described a strong culture of safety and compliance, where compliance to procedures was seen as a natural part of the job and reinforced by colleagues and leaders. This positive culture, combined with the fear of consequences for non-compliance, motivated compliance to at least some procedures.
- **Improved Procedures:** Some informants acknowledged significant improvements in the quality of procedures in recent years, citing clearer language and reduced length as positive changes.

In summary, the findings indicate a complex relationship with compliance. While a strong safety culture promotes compliance to critical procedures, the sheer number of procedures, knowledge gaps, varying quality, and lack of a robust update process contribute to selective compliance and non-compliance. This suggests a need for organizations to streamline procedures, improve communication and training, and establish a more effective system for updating and maintaining procedure quality.

#### 4.2. Leadership

The findings generally support the hypothesis that leadership influences compliance, job resources and job demands.

##### Leadership and compliance:

- **Leadership Influence:** Leadership behavior could positively or negatively influence compliance. Effective communication, leader awareness of procedures, and a positive safety

culture encouraged compliance. However, leaders who didn't follow procedures themselves or didn't prioritize compliance could negatively impact worker behavior.

#### Positive Aspects of Compliance:

- **Leadership Communication:** Leaders who highlighted procedures in meetings and promoted compliance through their actions had a positive impact.

#### Leadership and Job Resources:

- **Performance Feedback:** Leaders who prioritized giving feedback could positively influence worker competence and compliance. However, busy schedules often limited this interaction.
- **Competence in Procedures:** Leaders spending time reviewing procedures with workers increased their competence and compliance. However, leader workload and focus on training new employees could hinder this.
- **Worker Involvement:** Leader involvement in safety work and showing appreciation for following procedures motivated workers and increased their own involvement. Leader availability sometimes limited this interaction.

#### Leadership and Job Demands:

- **Workload Management:** Strong leadership could help workers cope with high workloads by managing tasks and keeping them calm in stressful situations.
- **Production Pressure:** Contrary to expectations, most informants experienced low production pressure from leaders. Leaders often encouraged taking time to ensure safety and avoid errors.
- **Role Ambiguity:** The impact of leadership on role ambiguity was less clear. While some experienced unclear roles, leaders tried to

offer support, suggesting the issue might lie at a higher company level.

Overall, leadership has a significant influence on compliance in offshore work. Effective communication, a strong safety culture, prioritizing procedures, and the management of job resources can all improve compliance. Busy schedules and lack of availability can sometimes limit these positive effects. The study highlights the need for leaders to be aware of all these factors to promote a safe and compliant work environment.

#### **4.3. Job-resources and compliance**

The findings generally support the hypothesis that these resources positively impact compliance.

#### Key Findings:

- **Performance Feedback:** Regular and constructive feedback, both to and from leaders, significantly enhances workers' ability and motivation to comply with procedures. Feedback fosters a sense of being valued and appreciated, which in turn increases job satisfaction and promotes a commitment to compliance. This aligns with previous research highlighting the positive effects of feedback on performance and motivation. A lack of feedback when workers suggest changes to procedures was also noted as a negative factor.
- **Competence:** A strong understanding of procedures and the necessary technical skills are crucial for compliance. Many informants reported insufficient training to fully grasp all procedures, negatively impacting their ability to comply. Competence levels varied based on individual experience, personality, and motivation. Higher competence, both in procedural knowledge and technical skills, correlated with better compliance. A lack of competence could also lead to workers being



perceived as inefficient while they spend time looking up procedures.

- **Involvement:** Being involved in the process of changing and updating procedures significantly boosts worker motivation and engagement. It fosters a sense of ownership and makes workers feel heard and valued. However, the study found that worker involvement in this area was generally lacking. Informants reported being informed about changes rather than actively involved in the process. This lack of involvement diminished their motivation to participate in future improvements and created a distance from the procedures, potentially leading to decreased knowledge and, consequently, lower compliance.

In summary, the study confirms the positive influence of job resources on compliance. Providing sufficient performance feedback, ensuring high levels of competence through adequate training, and fostering worker involvement in procedure development and updates are crucial for promoting compliance within the oil and gas industry. The lack of involvement was a particular concern, as it created a disconnect between workers and the procedures they were expected to follow.

#### **4.4. Job demands and compliance**

The findings suggest that workload negatively affects compliance, while production pressure does not. The influence of role ambiguity was less clear.

##### **Key Findings:**

- **Workload:** Most informants reported high workloads and insufficient resources, forcing them to prioritize tasks and potentially neglect procedures due to time constraints. This lack of time for understanding and adhering to procedures negatively impacted compliance.

The perception of redundant procedures further exacerbated the workload issue.

- **Production Pressure:** Contrary to expectations, there was a strong consensus among informants that production efficiency was not prioritized over compliance. Workers felt no pressure to take shortcuts or disregard procedures to meet production goals. In fact, some reported being praised for prioritizing compliance even if it resulted in lost production. Experienced informants noted a significant decrease in production pressure over recent years, which they felt had improved compliance.
- **Role Ambiguity:** While a minority of informants identified role ambiguity as a problem, those who did felt it negatively impacted their overall motivation, including their motivation to comply with procedures. However, the overall perception of role ambiguity was not widespread among the informants, suggesting it may be less prevalent in Norwegian offshore organizations. This lack of a strong connection between role ambiguity and compliance in this study contrasts with existing literature, possibly due to the specific sample of informants.

In summary, high workload appears to be a significant factor negatively influencing compliance, as it limits the time available for workers to engage with procedures. However, the strong emphasis on safety and compliance within the organization effectively mitigates the potential negative impact of production pressure. The influence of role ambiguity on compliance was less conclusive, possibly due to its limited presence among the studied population.

#### **4.5. Other factors influencing compliance**

The findings suggest that workload negatively affects compliance, while production pressure

does not. The influence of role ambiguity was less clear.

#### Key Findings:

- **Workload:** A majority of informants reported high workloads and insufficient resources, forcing them to prioritize tasks and potentially neglect procedures due to time constraints. This lack of time for understanding and adhering to procedures negatively impacted compliance. The perception of redundant procedures further exacerbated the workload issue.
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safety and compliance within the organization effectively mitigates the potential negative impact of production pressure. The influence of role ambiguity on compliance was less conclusive, possibly due to its limited presence among the studied population.

#### 5. Discussion, implications and concluding remarks

The study found the JD-R framework valuable for understanding the connection between leadership and compliance. Most of the job resources and demands investigated were linked to leadership practices and worker compliance, thus validating the overall research model and its initial assumptions. While the results also indicated a direct link between leadership and compliance, independent of job resources and demands, the JD-R framework provided valuable insights by highlighting specific factors contributing to compliant behavior. By focusing on concrete job resources and demands, this framework offers organizations and leaders more tangible areas for improvement than simply focusing on general leadership qualities.

Based on the study findings, a revised research model is proposed, Figure 3.

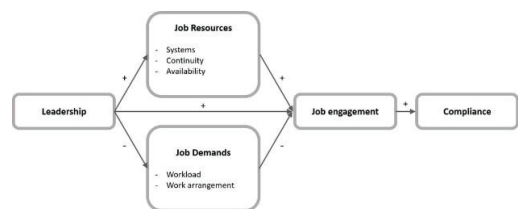


Fig. 3. Revised research model adding job engagement.

The findings validate the conceptual difference between work as imagined and work as done since many contextual factors influence compliance levels. Below is a bullet-point summary of the implications based on the revised model and study findings:

- **Leadership availability is crucial:** Leaders' limited availability and time significantly impact compliance. This is particularly true for performance feedback and worker

involvement, which require leader interaction. Addressing this constraint is key.

- Workload is the primary obstacle: High workload negatively affects both leaders (reducing their ability to support resources) and workers (reducing time for engaging with procedures). Managing workload is essential for improving compliance.
- Other job resources matter: Beyond the initially studied resources, "systems," "continuity," "availability," and "work arrangement" are identified as potentially important and should be investigated further. These should be considered when designing interventions to improve compliance.
- Job engagement is a key mediator: The revised model highlights job engagement as a crucial link between resources/demands and compliance. Fostering job engagement is likely to improve compliance.
- Relational leadership is more effective: Trust, communication, and understanding (relational leadership) are suggested to be more influential on compliance than formal training alone. Developing these relational aspects of leadership should be prioritized.
- Focus on performance feedback and involvement: While important for compliance, these job resources depend heavily on leader interaction and are often hindered by limited leader availability. Solutions need to be found to make these resources more readily available.
- Production pressure and role ambiguity less significant: While not identified as major negative influencers in this study, these factors shouldn't be entirely dismissed in other contexts.

This study extends the JD-R framework to include compliance as an outcome and identifies how job resources and job demands influence job engagement and compliance. Findings suggest that the study findings have implications for future research avenues as well as practical implications. Study findings also confirm

previous research (Nahrgang et al., 2011) suggesting the JD-R model is relevant for safety understanding and improvement.

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