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# **“Smooth Sailing”: Playful Work Design on Monotonous Days**

*A Quantitative Diary Study Among Norwegian Military Academy Cadets*

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## **Abstract**

Studies have consistently highlighted the individual and organisational benefits of work engagement, including increased employee motivation, satisfaction, and performance (Bakker et al., 2014). However, organisations may struggle to protect work engagement in employees who are dealt monotonous work tasks (Scharp et al., 2021). This study aimed to explore whether playful work design (PWD) could be a proactive behavioural strategy for employees to use in order to protect their work engagement in the face of such tasks. Using the Job Demands-Resources model (Bakker & Demerouti, 2017) as a theoretical framework, this study examined the impact of daily monotony and PWD on daily work engagement in a maritime and operational work context, as well as the moderating role of PWD in the form of fun and competition on the relationship between daily monotony and daily work engagement. We collected data from 27 Royal Norwegian Naval Academy cadets, who answered a daily questionnaire for 28 consecutive days during a voyage from Cape Town to Bergen. The results from the multilevel analyses supported our prediction that daily monotony negatively correlates with daily work engagement. Similarly, the results supported our predictions that daily PWD in the form of a) fun and b) competition positively correlated with daily work engagement. While daily PWD in the form of fun was found to have a buffering effect on the negative relationship between daily monotony and daily work engagement, daily PWD in the form of competition did not. The findings of this study make several theoretical and practical contributions, underscoring the potential mitigating effect of incorporating fun and playful elements into the work situation on days when monotonous work may harm work engagement.

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## Introduction

Research has consistently shown that engaging in advanced or challenging tasks can foster work engagement, especially when employees can access relevant job resources such as autonomy, performance feedback, and skill variety (Hackman & Oldham, 1976; Bakker et al., 2023). On the contrary, employees generally exhibit lower engagement levels when faced with hindrance job demands, which encompasses stressful and negative job requirements (Chen et al., 2021). While all job demands are costly to some extent, hindrance job demands can be particularly frustrating because they hinder personal growth and goal attainment (Mazzola & Disselhorst, 2019). In essence, these studies suggest that individuals who are exposed to hindrance job demands may find it harder to stay engaged with their work and perform well.

Specifically, organisations may struggle to protect work engagement in employees who are faced with monotonous and repetitive work tasks (Scharp et al., 2021). Work monotony fits the description of an agency hindrance demand, defined as “task-related stressors that cost energy and offer few opportunities for mastery and competence” (Scharp et al., 2021), meaning that the nature of such tasks may deprive individuals the opportunity to create meaningful results and experience the self-belief to do so, translating into the experiences of lacking agency (DeCharms, 1968, as cited in DeCharms, 1972). In turn, this raises the critical question of whether effective strategies exist to help employees remain engaged on days when confronted with monotonous work activities.

Among other things, play has been shown to reduce boredom when confronted with monotonous work (Roy, 1959). By this logic, play can be seen as more than just a bundle of playful activities; it is also a proactive approach to making or reframing an activity to be more enjoyable and challenging. Indeed, research has indicated that engaging in play has important implications for several aspects of the work experience, having been linked to increased job satisfaction, heightened perceptions of self-competence (Abramis, 1990), creativity (Mainemelis & Ronson, 2006), feelings of belongingness (Sandelands, 2010) and decreased levels of stress and burnout (e.g., DesCamp & Thomas, 1993). In essence, play is thought to make the work more intrinsically motivating and help deal with draining and tedious tasks. This means that, on days when hindrance job demands frustrate agency (e.g., monotonous tasks), individuals may take initiative and use play to reframe their situation to become more enjoyable. This way,

individuals may be able to increase the meaning of work and elevate their own level of work engagement.

Playful work design (PWD) is one of the proactive behavioural strategies employees may use to foster positive agency events during work. As defined by Bakker et al. (2020b, p.2), PWD refers to “the process of employees proactively creating conditions at work that foster play without changing the job itself”. In essence, PWD consists of two sub-dimensions: (1) self-initiated playful work design in the form of fun and (2) self-initiated playful work design in the form of competition (Bakker et al., 2020a). The first dimension, designing fun, is about approaching work in a playful manner where one can perceive the enjoyable, humorous, and creative aspects of the tasks (Bakker et al., 2020a). The second dimension, designing competition, is about approaching work playfully by competing with oneself or others, setting goals, and performing better than before, for example, by trying to beat the clock when performing a task (Bakker et al., 2020a). Both dimensions may enhance employee engagement by making work more enjoyable and motivating.

This thesis will focus on the impact of daily monotony and daily PWD on daily work engagement in a maritime and operational work context. Given the prevalence of boredom in various work settings, especially with the increasing implementation of automated systems that reduce direct human interaction, it is crucial to not only understand the different aspects of workplace boredom and disengagement, but also to formulate specific strategies to alleviate it (Cummings et al., 2015). Identifying factors that diminishes and enhances work engagement is highly relevant given the links between engagement and various important individual outcomes (e.g., job satisfaction and motivation; Riyanto et al., 2021) as well as organisational outcomes (e.g., performance, retention; Bakker & Bal, 2010). Historically, research has predominantly focused on how top-down approaches impact work engagement (Bakker, 2015). However, employees are not to be viewed as passive recipients of tasks, but instead as active actors that can change how they approach and complete their tasks Petrescu (2018). Therefore, exploring what employees themselves can do to alter their own work situation and enhance their own work engagement is of great interest.

The research question will be theoretically grounded in the Job Demands-Resources model (JD-R model; Bakker and Demerouti, 2017). The JD-R model posits that employees are likely to feel particularly engaged on days when they

face challenging job demands in conjunction with sufficient job -or personal resources, and less engaged on days when confronted with hindrance job demands in conjunction with insufficient job -or personal resources. Therefore, it is of great interest to explore how self-initiated PWD, in the form of a) fun or b) competition, can serve as a personal resource and influence cadets' work engagement on days when they encounter hindrance job demands in the form of monotonous work. Using the JD-R model as our theoretical framework, it will be possible to explore the extent to which monotonous work affects work engagement on a particular day and, furthermore, how the cadets themselves can use PWD to mitigate a potential decrease in engagement on these days.

### **Design and Context**

The sample in the present study comprises Norwegian cadets from the Royal Norwegian Naval Academy during their voyage along the Atlantic Ocean aboard the KNM Statsraad Lehmkuhl, as part of their leadership training. As the main mission entailed sailing from Cape Town to Bergen, they would fully operate the ship themselves, incorporating both military and leadership exercises throughout the journey. The expedition would provide cadets with training in both maritime and operational scenarios. The tasks assigned exhibit daily variations; cadets may assume roles such as lookout personnel on some days, and leadership positions (and relevant tasks) on others. Moreover, the task complexity fluctuates according to weather and wind conditions. Consequently, cadets may encounter duties characterised as *highly monotonous* on certain days while facing significant pressure on others, necessitating the need for astute decision-making.

Our focus is on examining the impact of daily monotony and playful work design on daily work engagement in a maritime and operational work context, and we will utilise a quantitative diary study design to do so. Work and organisational psychology primarily rely on cross-sectional and longitudinal research design (Ohly et al., 2010). However, although typical, these designs possess certain limitations. Due to their reliance on occasional measurements or a limited number of measurements spaced over extended time intervals, capturing the daily dynamics within the interaction of variables becomes challenging. A further limitation is retrospective bias, where the elapsed time between the occurrence of a situation and its measurement might lead to reduced recall of the situation (Reis & Gable, 2000). Hence, this study employs a quantitative diary study design,



where subjects complete a brief questionnaire daily. Among other factors, a diary study is suitable for addressing our research question because of its ability to capture daily fluctuations in both task monotony and the implementation of self-initiated PWD, subsequently allowing us to explore how these variations influence the daily engagement levels of the cadets.

As data is collected from the same participants across multiple time points, this study uses a within-subjects design. The use of a within-subjects design allows for the examination of daily fluctuations in the variables of interests (daily monotony, daily engagement, and PWD) within the same individuals. As such, this can provide a more in-depth understanding of the daily fluctuations and how these variables interact over time for each participant.

## **Theoretical Framework**

### **Work Engagement**

Work engagement is a well-established outcome variable in the JD-R theory; this study is one of several delving into factors that affect and predict work engagement. Work engagement can be defined as “a positive, fulfilling, work-related state of mind that is characterised by vigour, dedication, and absorption” (Schaufeli et al., 2002, p. 74, as cited in Bakker et al., 2008 p. 188). Vigour indicates high energy levels, mental resilience, and a determined willingness to invest effort in professional tasks, showing sustained persistence despite encountering obstacles. Dedication refers to an intense involvement in one’s professional duties, characterised by a profound sense of importance, enthusiasm, inspiration, pride, and a perception of challenges. Absorption is characterised by complete concentration and a pleasurable immersion in work activities, where time seems to pass swiftly, and individuals encounter difficulty in disengaging from work-related tasks. Two core symptoms of burnout are exhaustion and cynicism, and vigour and dedication are considered direct opposites of these (Bakker et al., 2008).

Previous research has identified several precursors of work engagement among employees. A relevant approach by Bakker et al. (2014) points toward separating situational and individual precursors that affect work engagement. Among the situational factors, job resources are a pivotal predictor of work engagement. These resources, including elements like social support, supervisor

coaching, and performance feedback, influence work engagement (Schaufeli & Bakker, 2004). To further underscore the impact of job resources, longitudinal studies, exemplified by Mauno et al. (2007), revealed higher levels of vigour, dedication, and absorption among employees who had enhanced job control over time.

Directing focus toward individual factors as precursors of work engagement, it is important to note that differing personality profiles may shape how individuals interact and mobilise job resources and demands (Albrecht, 2010, as cited in Bakker et al., 2014; Macey & Schneider, 2008, as cited in Bakker et al., 2014). For instance, extraverts, known for their positive emotions, frequent personal interactions, and general optimism, tend to mobilise social support and seek performance feedback from colleagues and supervisors more effectively, thus perceive job demands as more of a challenge rather than an obstacle (Costa & McCrae, 1992, as cited in Bakker et al., 2014). Recent literature reviews have highlighted the consistent positive association between factors from the Big Five, namely emotional stability, extraversion and conscientiousness, and work engagement (Mäkikangas et al., 2013).

While work engagement levels may remain relatively stable for some individuals, it is essential to note that research indicates significant within-person variations in experiences of work engagement (Bakker & Bal, 2010). Therefore, acknowledging and accounting for these short-term fluctuations within individuals is vital for studies exploring the concept of work engagement, as it underscores the dynamic nature of the concept.

A general expectation is that engagement is positively related to job performance and other beneficial organisational outcomes (Bakker et al., 2014). The consequences of work engagement span multiple domains and reveal far-reaching impacts. Engaged employees tend to exhibit increasing positive health outcomes, with studies suggesting a positive correlation between work engagement and healthy cardiac autonomic activity (Seppälä et al., 2011). One of several supporting links may stem from engaged individuals' inclination towards leisure-time activities that promote relaxation and detachment from work-related stressors (Ten Brummelhuis & Bakker, 2012). Engaged employees feel more committed to the organisation and are less often absent, and the term positively affects turnover (Schaufeli, 2012). Moreover, engagement is associated with active learning behaviours, particularly among conscientious employees (Bakker

et al., 2012), and fosters proactive behaviours to promote positive work situations (Sonnentag, 2003).

Furthermore, employees who are engaged tend to perform better, as evidenced by increased in-role and extra-role performance (Halbesleben & Wheeler, 2008; Salanova et al., 2011). Bakker et al. (2004) also revealed that engaged individuals are likelier to engage in organisational citizenship behaviours, indicating their willingness to contribute beyond their prescribed job duties. According to Schaufeli (2012), a meta-analysis that included close to 8,000 business-units of 36 companies (Harter et al., 2002) revealed that levels of engagement are positively related to business-unit performance, suggesting that engaged workers might indeed offer a competitive advantage.

### **Job Demands-Resources Theory**

The theoretical framework employed in the current study is the job demands-resources theory (JD-R model; Bakker & Demerouti, 2017). According to this theory, the available resources and demands an employee faces are crucial factors influencing their work engagement. The duality between demands and resources forms a foundation for interpreting how various job characteristics impact employee well-being and performance.

The JD-R model, proposed by Bakker and Demerouti (2017), stands as the prevailing framework for understanding how workplace factors influence employee engagement. This model delineates job demands and job resources as pivotal factors shaping engagement and burnout/exhaustion. It posits that job demands primarily contribute to employee burnout/exhaustion, while job resources act as primary drivers of employee engagement. The past decades have shown extensive research into how job characteristics impact employee health. The JD-R theory encapsulates much of this research, aiming to elucidate both motivation and exhaustion in a work context. By synthesising knowledge from various theories of job stress and work motivation, the model provides a complete and comprehensive understanding of employee well-being and performance (Bakker et al., 2023).

Job demands refer to the physical, psychological, social, and organisational aspects that require sustained physical and mental effort, potentially leading to prolonged strain (Schaufeli & Bakker, 2004). Examples of job demands include high workload, time pressure, and shift work, while rewards,

job security, and support from superiors are considered typical workplace resources (Demerouti et al., 2001). Broadly speaking, job demands can refer to one of two distinct categories: hindering job demands and challenging job demands (Bakker & Sanz-Vergel, 2013; LePine et al., 2005). Hindering job demands obstruct individuals from attaining work goals, exemplified by role overload or role conflicts. Challenging demands necessitate effort but offer potential for personal development and goal achievement, such as being entrusted with responsibility or managing substantial workloads (Podsakoff et al., 2007; McCauley et al., 1994). If sufficiently supported by resources like leadership or social support, challenging demands can stimulate increased motivation and engagement. However, it is essential to recognise that perceptions of whether demands are challenging or hindering vary among individuals (Bakker & Sanz-Vergel, 2013).

Furthermore, it could be useful to distinguish between different types of job demands and their impact on agency. Hindrance job demands as those task-related stressors that drain energy and offer limited opportunities for achieving mastery and competence such as monotony, repetitiveness, and work underload, impede agency. These demands can significantly hinder an individual's ability to strive for and experience a sense of control and effectiveness in their work environment. In contrast, challenging job demands, which may include high workloads and complex tasks, can promote agency by providing opportunities for growth, skill development, and a sense of accomplishment. Hence, while challenging job demands can enhance agency by fostering an environment where individuals can demonstrate and improve their competencies, hindrance job demands can obstruct agency by creating barriers to personal growth and effectiveness.

According to the JD-R model (Bakker & Demerouti, 2017), resources are divided into job resources and personal resources. Job resources encompass the social, psychological, physical, and organisational factors contributing to achieving work-related objectives, nurturing work engagement, alleviating job demands, and ultimately fostering personal growth and learning (Schaufeli & Bakker, 2004). Examples of job resources include social support, autonomy, and feedback from colleagues and supervisors. Personal resources refer to individual traits, characteristics, or strengths that employees possess, irrespective of their

immediate work environment. More specifically, this represents the psychological strengths and attributes that individuals, in differing degrees, possess, influencing their ability to cope with job demands, capitalise on job resources, and thrive in their work environment. For instance, individuals exhibiting high optimism and mastery tend to anticipate positive outcomes and trust their capacity to navigate unforeseen circumstances (Bakker & Demerouti, 2017). Furthermore, a proactive personality, where an individual takes initiative and actively seeks measures to improve their work situation, is considered an example of a personal resource. Hence, individuals are not solely reliant on resources from the work environment; they can also use their own personal resources to cope with job demands.

### **Conservation of Resources Theory**

Conservation of resources theory (COR theory; Hobfoll, 1998) proposes explanations for why play-at-work activities are inherently motivating for employees and can be considered a 'personal resource'. Indeed, the core assumption of the COR theory is that individuals "strive to retain, protect and build resources" (Hobfoll, 1989, p. 516). Based on these assumptions, play in the workplace may not only concern having fun in itself - but also the acquisition of resources. Consider the scenario of the cadets: each day presents different demands and challenges, for instance, days characterised by monotonous tasks or days with high-pressure situations. Indeed, such demands might deplete specific resources and eventually impact their resource pool, such as strain on their motivation, interest, decision-making, or leadership skills. Engaging in activities involving fun and competition could serve as a means for the cadets to acquire or replenish resources. The COR theory framework presents a lens that elucidates how these daily fluctuations in task dynamics – ranging from monotony to high-pressure situations – impact the cadets' resource allocation and preservation, influencing their overall engagement and performance throughout the voyage.

### **Work monotony as a hindrance work demand**

Work monotony, defined as tasks or activities characterised by repetitiveness, has been the subject of much research (Game, 2007). Studies have attributed work monotony and repetitiveness as the leading causes of boredom in the workplace, with the earliest empirical evidence for this association stemming from studies on manufacturing settings and assembly tasks in the 20th century (e.g., O'Hanlon, 1981). These empirical studies found that jobs characterised by monotony and

repetitiveness offered minimal external stimuli to employees, leading to similarly low internal arousal (Fisher, 1993), resulting in declines in attention and interest in the assigned work tasks. Hence, the potential negative effects of monotonous and repetitive work on the individual employee are far from a new discovery.

More recent research has revealed similar findings related to potential negative outcomes of monotonous work, stemming from varying affective, cognitive, and behavioural reactions. Cummings et al. (2015) reviewed literature on boredom research and highlighted three different behavioural states that may occur as a result of monotony at work, namely boredom, fatigue, and attentional lapse. As for boredom, monotony may create conflict between inadequate stimulus and the inability to be stimulated in the current situation, leading to feelings of being constrained in a boring environment (Cummings et al., 2015). As for fatigue, monotony can reduce the ability to process information, resulting in a sustained feeling of exhaustion (Cummings et al., 2015). Finally, concerning attention, monotony has been shown to impact vigilance in various activities, often negatively impacting task performance (Cummings et al., 2015). Therefore, it is reasonable to claim that the negative outcomes extend beyond the individual employee, also affecting organisations, as these states will likely manifest into behaviour, for instance in the form of chatting to co-workers or performing nonwork-related tasks. Importantly, these states and outcomes are not mutually exclusive, implying that monotony in the work situation may simultaneously evoke various individual reactions.

In essence, the research on work monotony and its outcomes highlight how the nature of such work can act as a hindrance job demand as described in the JD-R model (Bakker & Demerouti, 2017). This body of research has highlighted how monotonous tasks, by their very nature, impede employees' capacity to find fulfilment and satisfaction with their work, ultimately diminishing the sense of agency and causing disengagement.

### ***The relationship between daily monotony and daily work engagement***

The role of monotony as a hindrance demand raises questions regarding the nature of the relationship between daily monotony and daily work engagement. Indeed, previous research has complemented the theoretical assumptions of the JD-R model (Bakker & Demerouti, 2017), positing that hindrance job demands can lead to disengagement from the work unless sufficient job resources are introduced

(Scharp et al., 2021). More specifically, employees faced with monotonous work may find themselves in an environment that restricts their autonomy and opportunities to feel efficacious and competent, impeding their ability to exercise personal agency. In such environments, individuals are likely to experience a decline in motivation and willingness to invest effort into their work because their work engagement suffers.

Self-determination theory (SDT; Ryan & Deci, 2000) can help shed light on the relationship between daily monotony and daily work engagement. According to the theory (Ryan & Deci, 2000), individuals possess three basic psychological needs: autonomy, competence, and relatedness. Autonomy refers to the universal desire to be causal agents and exercise volition, competence involves an inherent drive to navigate the environment effectively, and relatedness signifies the desire to connect and experience care (Ryan & Deci, 2000). Over the past decades, extensive research has consistently shown that satisfying these three needs contribute to well-being at work, higher engagement, and enhanced performance (Gagné & Vansteenkiste, 2013). Conversely, when these needs are frustrated, individuals may experience job strain, impaired performance, and disengagement from the work (Bakker & Oerlemans, 2019). For instance, when the cadets are assigned monotonous tasks, such as lookout duties, they may experience a lack of challenges, possibly hindering the opportunity to demonstrate competency and achieve a sense of accomplishment, potentially leading to reduced engagement on these days. As such, the basic principles of SDT may supplement our understanding of how hindrance job demands such as monotony may impede agency and lead to disengagement from work activities.

In accordance with the theory and research presented, we expect daily monotony to be negatively related to daily work engagement.

**Hypothesis 1:** There is a negative relationship between daily monotony and daily work engagement.

### **Playful Work Design – a personal resource at work**

Substantial research has found strong positive associations between playful activities at work and enhanced work engagement, job satisfaction (Karl & Peluchette, 2006), and the cultivation of positive relationships among co-workers (Becker & Tews, 2016). This is unsurprising, as fun remains an essential aspect of our lives as adults (Lubbers et al., 2023). Indeed, researchers such as Brauer et al.

(2021) and Shen et al. (2017) have underscored adult playfulness as not just a fleeting activity, but as a fundamental personal resource and personality trait. Implementing play across contexts, such as in the workplace, may enhance individual well-being and social interactions and promote resilience in challenging or complex situations that may arise (Lubbers et al., 2023). In addition to individual outcomes, studies have shown that work environments that embrace fun and play can beneficially impact various organisational aspects, such as attracting applicants in recruitment contexts and lowering employee turnover intention (Karl et al., 2008). Thus, existing research strongly suggests that incorporating playful activities into the workplace can create a more enjoyable environment for employees, enhancing engagement and performance and hence result in favourable individual and organisational outcomes.

While play in the workplace can be initiated as a top-down approach from leadership, relying solely on this method has its restrictions. Top-down play initiatives, such as gamification or playful leadership, are typically introduced by leaders to promote change by altering the work environment itself (Silic et al., 2020; West et al., 2016). However, these initiatives may only resonate with some employees, as individuals differ in their receptiveness towards playful approaches to work (Scharp et al., 2019). If employees perceive these initiatives as forced and inauthentic, it could have the opposite effect, instead fostering resistance and cynicism (Fleming, 2005). Additionally, implementing top-down play initiatives might be challenging in certain professions due to the nature of the work. For instance, the structured and disciplined environment of military training may not easily accommodate playful interventions from leaders. Therefore, relying solely on a top-down approach to play in the workplace may not always be sufficient.

Playful work design offers a bottom-up approach to integrating play in the workplace (Scharp et al., 2022). Self-initiated PWD is a form of proactive cognitive-behavioural work orientation where employees adopt a playful attitude toward their work to design fun and competition-oriented experiences (Scharp et al., 2019). Proactive behaviour – when individuals take the initiative to improve their current circumstances rather than passively adapting to existing conditions (Crant, 2000) – is considered crucial in modern organisations, often characterised by constant changes and less supervision by management (Sonnentag, 2003). Job crafting is another practice behaviour with several similarities to PWD; however, whereas job crafting refers to the process of actively seeking *new* tasks and



projects that differ from the work the employee is already involved in (Bakker et al., 2020b), PWD involves designing fun and competition by imposing the experiential qualities of play on *existing* work (Scharp et al., 2019). As such, PWD fits the descriptions of being a valuable personal resource at work. On days when employees are obligated to perform monotonous, repetitive tasks in a particular manner without access to additional job resources (Bakker et al., 2020a), they can actively integrate elements of fun and competition to make it more enjoyable and engaging.

Notably, there are two dimensions of PWD - designing fun and designing competition - and they are thought to differ in why and how they facilitate work engagement (Scharp et al., 2019). Designing fun refers to adopting a playful approach to work encompassing ludic play strategies such as humour, creativity and fantasy, focusing on fun and amusement (Bakker et al., 2020a). For instance, designing fun could involve exchanging jokes with customers or using the imagination to create a more exciting and meaningful narrative around a task. On the other hand, designing competition revolves around enjoyment derived from challenging oneself and pushing one's skill (Scharp et al., 2021). It comprises strategies such as setting goals and rules to make work activities more competitive and challenging (Scharp et al., 2021). For instance, this could involve reframing the task of writing a document into a competition by viewing each paragraph as a unique challenge (e.g., setting targets like avoiding repetition), or reframing the task of responding to emails into a game by competing with previous time records or limiting word count as much as possible while maintaining clarity. Although the dimensions of designing fun and designing competition are related, studies have shown that a two-factor solution outperforms a one-factor model, demonstrating support for the duality of play and the independence of each dimension (Bakker et al., 2020a). As such, some employees may thrive in designing competition but less so in designing fun, and vice versa. Therefore, we will separately examine how designing fun and competition relate to work engagement.

### ***Daily Playful Work Design in the form of Fun and Daily Work Engagement***

Designing work to become more playful and fun can allow employees to alter their experience of the work situation to become more fun without altering the task itself, meaning that employees themselves can take initiative to increase their

engagement at work by means of a bottom-up approach Petrescu (2018). Some individuals may engage in this form of play more naturally as designing fun correlates more strongly with ludic traits, including humour, creativity, and playfulness, than designing competition does (Bakker et al., 2020a). This suggests that fostering a fun and playful work environment can be a powerful way to enhance employee engagement, particularly for those with inherent ludic traits.

Designing work to become more fun and enjoyable has been associated with numerous beneficial outcomes besides that of engagement. For instance, introducing elements of fun into work can help strengthen interpersonal relationships in the workplace (Becker & Tews, 2016). This may be because fun activation largely involves creative interactions with others in situations where fun, presented in the form of play, may encompass celebrating work achievements, exchanging jokes and banter with co-workers, and engaging in activities beyond individual work tasks (Mainemelis & Ronson, 2016). Because the social environment is an integral part of the daily work life where tasks are carried out (Becker & Tews, 2016), being a part of a playful social environment may enhance employee motivation by fulfilling the psychological need for belonging. Furthermore, studies demonstrate that creating positive emotions and humour through playful workplace activities can reduce stress, increase creativity (Romero & Cruthirds, 2006), and cultivate a sense of flow and timelessness (Mainemelis & Ronson, 2006). Hence, integrating fun and playful elements into work can lead to numerous positive benefits, including fostering social relationships, enhanced motivation, stress reduction, and overall well-being among employees.

In alignment with the JD-R model (Bakker & Demerouti, 2017), the ability to adopt a playful approach through designing fun can be understood as a valuable personal resource that can enhance employee engagement. More specifically, it is the ability to proactively design work tasks as more enjoyable, entertaining, and meaningful that can act as a pivotal personal resource, having the potential to amplify work engagement and performance when altering the tasks is not an option. Prior research has consistently demonstrated a positive correlation between daily proactive design of playful work task experiences and daily work engagement (Scharp et al., 2019). In fact, Petrescu (2018, p.49) investigated how employees kept themselves engaged at work on a daily basis, and found that employees experienced increased work engagement on days where

they used playful work design in the form adding “their own fun touch”. Moreover, studies that have investigated the framing of work tasks as either “play” or “work” reveal that framing tasks as “play” foster greater engagement and intrinsic motivation compared to framing them as “work” and dissociated from fun (Glynn, 1994; Webster & Martocchio, 1993). This divergence is likely rooted in the association of work as something results-oriented, while play adopts a more process-oriented perspective and contributes to an increased sense of engagement in the activity at hand (Glynn, 1994). As such, the association between designing fun and heightened work engagement may be attributed to the infusion of positive emotions such as joy and absorption in both work engagement and the experience of having fun. Thus, designing fun may be a valuable personal resource and an effective strategy for boosting employee engagement. Therefore, we expect to observe this relationship among the cadets during their voyage.

**Hypothesis 2a:** There is a positive relationship between playful work design in the form of fun and daily work engagement.

### ***Daily Playful Work Design in the form of Competition and Daily Work Engagement***

By designing work tasks to be more like a competition, employees can make the activity more entertaining, challenging, and complex (Scharp et al., 2019). While designing fun is more related to ludic play, designing competition is more strongly related to agonistic play (Bakker et al., 2020a). Essentially, agonistic play is more rational and rule-bound, comparable to competitive sports. As such, designing competition has been found to correlate with various agonistic traits, including competitiveness and achievement striving (Bakker et al., 2020a). Hence, implementing competitive elements into work tasks can leverage employees’ drive for challenges and achievement, thereby enhancing engagement.

Similarly to designing fun, the JD-R model (Bakker & Demerouti, 2017) can shed light on how designing competition can act as a valuable personal resource that fosters employee work engagement. Designing work to be more competitive promotes feelings of efficacy and achievement, which can increase employee engagement and facilitate intrinsic motivation (Pittman et al., 1982). Specifically, by proactively implementing elements of competition into their work, employees can gain greater control over their activities and experience a sense of empowerment through setting personal goals (Scharp et al., 2019).

Establishing specific and challenging goals during tasks is crucial for facilitating motivation and engagement, as goal setting generates a sense of accomplishment (Locke & Lathan, 2019) and satisfies the need for competence (Scharp et al., 2022). Indeed, a diary study demonstrated that on days when employees proactively designed competition into their work, they sustained their work engagement despite facing hindrance job demands such as simplicity and underload (Scharp et al., 2021). In essence, it is reasonable to expect that the cadets' who actively design competition are creating opportunities to experience feelings of competence and accomplishment, leading to increased work engagement.

**Hypothesis 2b:** There is a positive relationship between playful work design in the form of competition and daily work engagement.

### **The Moderating Role of Daily Playful Work Design**

The assumed negative relationship between daily monotony and daily work engagement raises questions concerning strategies to protect work engagement on days characterised by monotonous and repetitive work tasks. As research suggests that employees who demonstrate proactive work behaviour, such as designing fun or competition, take personal initiative to change their work situation to become more enjoyable (Scharp et al., 2019), it is worth exploring whether cadets who utilise personal resources through self-initiated PWD in the form of a) fun and b) competition, can create a buffering effect that protects work engagement in the face of monotonous work.

#### ***The Moderating Role of Daily Playful Work Design in the Form of Fun***

For cadets facing hindrance demands in the form of monotony, adopting a playful attitude toward their tasks may be a valuable strategy to mitigate disengagement. In military missions, it is common for cadets to face monotonous and repetitive tasks that create stress and boredom (Bartone, 2006). For instance, many cadets may perceive tasks such as standing guard or cleaning duties as meaningless and unexciting. In line with the JD-R model (Bakker & Demerouti, 2017), monotonous work activities are likely perceived as a hindrance job demand that can harm work engagement (Bakker et al., 2007). However, it is reasonable to assume that cadets who adopt a self-initiated, playful approach to their work to make it more enjoyable are better equipped to stay engaged in these situations. Proactively focusing on the interesting, creative, and humorous aspects of the task

can create positive emotions such as joy, excitement, and engagement. Engaging in play and fun helps individuals disconnect from external stressors, becoming fully absorbed in the activity (Csikszentmihalyi, 1975). Since play and fun can immerse individuals in a task, they can reduce or eliminate frustration, stress, and worries (Van Vleet & Feeney, 2015) and elevate stimulation levels to avoid boredom and decreased engagement (Petelczyc et al., 2018). Hence, designing fun may allow the cadets to sustain their motivation and engagement, turning otherwise tedious tasks into more fulfilling and enjoyable experiences.

In essence, designing fun can serve as a "buffer" and an effective strategy to help employees stay engaged on days they are dealt monotonous work. Proactive individuals have demonstrated the initiative to enhance their current circumstances rather than passively adapt to existing conditions (Parker & Collins, 2010), utilising an important personal resource. While the cadets may not have the power to change the nature of their work tasks, they may be able to actively create their own optimal work experiences to maintain engagement. Even during monotonous days, the cadets may be able to maintain their work engagement by focusing on the exciting and humorous aspects of the task (Barnett, 2007). Thus, designing fun is a proactive strategy and a personal resource for the cadets to use in order to reframe their work activities to become more fun and enjoyable, thereby protecting engagement levels.

Based on the theory and research findings presented above, we propose the following hypothesis:

**Hypothesis 3a:** The negative relationship between daily monotony and daily work engagement is negatively moderated by playful work design in the form of fun. Specifically, we expect a stronger negative relationship when playful work design in the form of fun is low compared to high.

### ***The Moderating Role of Daily Playful Work Design in the Form of Competition***

When cadets are assigned monotonous tasks, the logic of the JD-R model would suggest that the risk of disengagement likely arises due to inadequate job resources and a lack of sufficient challenges (Bakker & Demerouti, 2017). In this context, cadets who, on their initiative, reframe their tasks to become more challenging may be less impacted by the presumed negative associations between daily monotony and work engagement (Scharp et al., 2019). As such, when cadets perceive their work as monotonous and repetitive, they may sustain their work

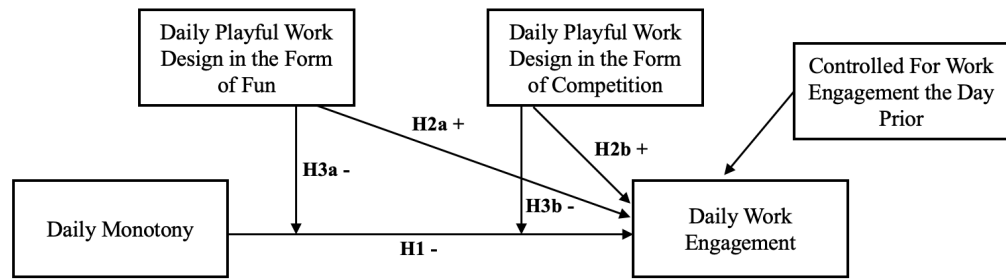
engagement by employing PWD in the form of competition, thus making the work experience more exciting and challenging (Bakker et al., 2020b).

Csikszentmihalyi (1975) contends that individuals are intrinsically motivated to seek play and competition as it fulfils their need to align challenges with their skills, thereby avoiding boredom and maintaining engagement. By proactively implementing more challenge and meaning into the work experience—such as viewing tasks as a series of exciting challenges or attempting to set personal records—cadets can sustain their engagement despite the monotonous nature of their tasks.

In line with the JD-R model, designing competition can be a valuable personal resource that fosters and maintains work engagement. With previous research revealing that employees who proactively design competition into their work sustain work engagement when faced with hindrance demands in the forms of simplicity and underload (Scharp et al., 2021), it is reasonable to assume that cadets who utilise their personal resources through designing competition may increase their own work engagement when faced with monotonous tasks. By turning tasks into competitions, the cadets can redesign their monotonous work experience to become more challenging, meaningful, and engaging (Bakker et al., 2020). Approaching work tasks as a competition, including elements such as of goal- and rule-setting, provides the cadets with more control and freedom, satisfying needs for autonomy and competence (Ryan & Deci, 2000), needs that have proven crucial for feelings of engagement (Van den Broeck et al., 2016). Thus, implementing elements of competition into work tasks may not only enhance engagement but also serve as a buffer against the harm that monotonous work may do to engagement levels.

Based on the theory and research findings presented above, we propose the following hypothesis:

**Hypothesis 3b:** The negative relationship between daily monotony and daily work engagement is negatively moderated by playful work design in the form of competition. Specifically, we expect a stronger negative relationship when playful work design in the form of competition is low compared to high.



**Figure 1:** *Hypothesis Pathway*

## Methods

### Research Design

The data is collected as a cooperative study between The University of Bergen, The Royal Norwegian Naval Academy, and Erasmus University Rotterdam. The Royal Norwegian Naval Academy sailed from Cape Town to Bergen aboard the Statsraad Lehmkuhl in the spring of 2023. The cadets carried out a diverse range of duties on a rotational basis, encompassing activities such as cleaning, sailing, guarding, and teaching. Additionally, they were granted designated intervals during the day, which were utilised for recovery and academic pursuits. The study was conducted within an operational framework, signifying that the cadets may encounter elevated levels of temporal constraint, ambiguity, and other stress-inducing factors in specific scenarios, whereas alternate days were characterised as monotonous and tedious.

The study in question was conducted as a quantitative diary study. As daily variations are an essential component of our study, the design allows one to account for these (Ohly et al., 2010). Furthermore, it reduces the risk of wrong answers as the questionnaires were answered shortly after the events (Reis & Gable, 2000; Ohly et al., 2010). Ecological validity was also ensured as the cadets completed the questionnaires at their actual place of work, allowing for the natural perceptions of the work to be examined. As quantitative diary studies investigate variations across several measuring points during a shorter period, two separate questionnaires were provided for the cadets to answer as part of their participation in the study. The first was a general form answered once ahead of departure, aiming to investigate relatively consistent variables, e.g. personality variables. The second form was the daily questionnaire, measuring more fluctuating variables.

The cadets completed the forms daily for 28 consecutive days at 17:00, forming the foundation of the data applied in the analyses of the study.

### **Participants**

Our final sample consisted of 27 cadets. Initially, 71 naval officer cadets were invited to participate in the study, but only 44 completed the questionnaires and were included. This resulted in a response rate of 38%. Of these, 22 of the participants were male (81.5%) and 5 were female (18.5%). The cadets' ages ranged from 20 to 27 years, with a mean age of 21 years, forming a relatively young sample.

### **Ethics**

Ethical dilemmas are unavoidable when doing research. However, various principles can provide guidance and help design studies in such a way as to limit ethical issues as much as possible (Miller & Williams, 2011). In the current study, the cadets received detailed information sheets prior to sailing in order to make an informed decision about whether or not to participate in the study. Crucially, the cadets were required to sign a consent form beforehand. Participation was voluntary, allowing cadets to withdraw from the study at any time. To ensure anonymity, cadets were identified only by randomly generated codes. Furthermore, the data was securely stored in a safe data localisation area at the University of Bergen to safeguard privacy considerations.

### **Measurements**

The questionnaires were formed based on established and standardised scales. Importantly, the questionnaires were adapted to the operative context of the cadets, an example being the referral to participants as "cadets" rather than "employees". The questionnaires were thoroughly tested and did not exceed 5-7 minutes in total to complete, which corresponds with Reis and Gable's (2000) recommendations on the duration of daily assessments. The duration was of the essence, as repeatedly asking participants to answer the same questions over time might challenge participants' willingness to complete the study (Ohly et al., 2010).

Daily work engagement was measured using a shortened version of the "Utrecht Work Engagement Scale" (UWES) (Schaufeli et al., 2006). The original version, consisting of 17 items, was condensed to 9 items (UWES-9), making it more manageable for the cadets to complete. This version covers three sub-



dimensions of work engagement: vigour, dedication, and absorption, which are reflected in a total score of all dimensions combined. Examples of assertions of vigour, dedication, and absorption were provided. The questionnaire used a five-point Likert scale ranging from 1 = "strongly disagree" to 5 = "strongly agree". The internal consistency of the scale was at a good level with a mean Cronbach's alpha of .91, ranging from the lowest estimate of .87 to the highest estimate of .97.

Measuring daily self-initiated playful work design, a shortened version of the instrument developed by Scharp et al. (2019) was used. The instrument consisted of two dimensions. One specifically measuring designing fun (e.g. "Today, I looked for humor in the things I needed to do"), and the other specifically measuring designing competition (e.g. "Today, I competed with myself at work – not because I had to, but because I enjoyed it"), each dimension being measured by three items. Responding to the questions, the cadets considered to which extent they agreed to the statements using a 5-point Likert scale ranging from 1 = "totally disagree" to 5 = "totally agree". The two subscales indicated good reliability, with Cronbach's alpha of .86 for designing fun, and .81 for designing competition, across the 20 days.

Monotony was measured using five items from "The Job Boredom Scale" (Lee, 1986). A five-point Likert scale was used to rank the responses from 1 = "not at all" to 5 = "to a great extent". Examples of statements used by the scale to measure monotony were "Have the tasks been monotonous?" "Has it felt like time has been passing slowly?" and "Have my tasks been boring?". The internal consistency of the scale showed a Cronbach's alpha of .80, ranging from the lowest estimate of .51 to the highest estimate of .92.

## **Analysis**

This study examines the impact of daily monotony and playful work design on daily work engagement in a maritime and operational work context, as well as the moderating role of playful work design on the relationship between daily monotony and daily work engagement. To achieve this, we employ multilevel analyses, particularly suited for understanding how various factors interact when measured across different levels of hierarchical structure. Specifically, our dataset follows a hierarchical pattern, where daily measurements (level 1: days) are further divided into within-subjects level measurements (level 2: person). With 27 subjects and 28 repeated measurements, the study has 756 measurement points.

By utilising multilevel analyses, we can examine the variation within individuals over the 28-day measurement period and assess daily fluctuations in monotony, PWD, and work engagement levels.

Several statistical programs were used to analyse the data in this study. SPSS version 28 was used to conduct multilevel analyses. Mplus version 7.4 (Muthén & Muthén, 2015) was employed to compute descriptive statistics and correlations. MLwiN 3.05 (Rashbash et al., 2020) was employed to examine hypotheses using multilevel analyses.

During our analyses, three different models were tested. First, we tested a null model (model with no predictors) to assess how much of the total variation in work engagement that could be attributed to daily fluctuations within individuals (level 1: days) and how much that could be attributed to differences between individuals (level 2: person). Second, we tested a model of main effects, testing the effects of daily monotony and daily PWD on daily work engagement, thereby testing hypotheses 1, 2a and 2b. Third, we tested the interaction model, thereby testing hypotheses 3a and 3b regarding the moderating role of PWD in the form of fun and competition on the relationship between daily monotony and daily work engagement among the cadets. Both the main - and interaction effect models were controlled for the previous day's level of work engagement. To visually present the interaction, online simple slope testing was conducted (Dawson, 2014).

## **Results**

### **Descriptive Statistics**

Table 1 summarises mean values, standard deviation and correlations between the variables in our study. The average reliability coefficients of the study variables are reported along the diagonal axis. Above the diagnosis axis, correlations between variables on a daily level are reported, referring to variations within the individuals from day to day. Below the diagonal axis, variations at the person level are reported, referring to variation between individuals across the 28 days.

As shown in Table 1, there were multiple significant correlations on the daily level. Work engagement significantly and negatively correlated with monotony ( $r = -.37, p < 0.001$ ). Furthermore, work engagement significantly and positively correlated with playful work design in the form of fun ( $r = .43, p < 0.001$ ) and playful work design in the form of competition ( $r = .46, p < 0.001$ ).

Monotony significantly and negatively correlated with playful work design in the form of fun ( $r = -.10, p < 0.05$ ) and playful work design in the form of competition ( $r = -.19, p < 0.05$ ). Finally, playful work design in the form of fun significantly and positively correlated with playful work design in the form of competition ( $r = .59, p < 0.001$ ).

Our analysis also revealed several significant correlations on the person level. Work engagement was significantly and negatively related to monotony ( $r = -.83, p < 0.001$ ). Work engagement had positive, significant correlations with playful work design in the form of fun ( $r = .61, p < 0.001$ ) and playful work design in the form of competition ( $r = .67, p < 0.001$ ). Furthermore, playful work design in the form of competition was significantly and positively correlated with monotony ( $r = .44, p < 0.01$ ). Additionally, playful work design in the form of competition was significantly and positively correlated with playful work design in the form of fun ( $r = .74, p < 0.001$ ).

**Table 1**

*Mean, standard deviation, and the correlations between the study variables*

	<i>M</i>	<i>SD</i>	1	2	3	4
1. Work Engagement	3.44	0.69	.91	-.37***	.43***	.46***
2. Monotony	2.62	0.73	-.83***	.80	-.10*	-.19***
3. PWD fun	3.25	0.76	.61***	-.32	.86	.59***
4. PWD competition	3.32	0.71	.67***	-.44**	.74***	.81

*Note.* \*  $p < 0.05$ ., \*\*  $p < 0.01$ ., \*\*\*  $p < 0.001$ .,  $N = 756$  measurement points. The diagonal axis shows the reliability coefficient, above the diagonal axis are correlations at the daily level (variations within the individual), and below the diagonal axis are correlations at the person level (variations between individuals).  $N = 27$ , measurement points = 756.

*Note.* PWD fun = Playful work design in the form of fun, PWD competition = Playful work design in the form of competition.

### **Multilevel Analysis**

Table 2 presents the results from the null model, main effect model, and interaction model. Results from the null model showed that daily fluctuations within individuals explain 58% of the total variance in work engagement, whereas

differences between individuals explain 42% of the total variance in work engagement,

In hypothesis 1, we predicted a negative relationship between daily monotony and daily work engagement. The main effect model revealed that there indeed was a significant and negative relationship between these variables ( $B = -0.299$ ,  $p < 0.001$ ). Hence, hypothesis 1 is supported.

In hypothesis 2, we expected a positive relationship between daily playful work design in the form of fun and daily work engagement (H2a), and a positive relationship between daily playful work design in the form of competition and daily work engagement (H2b). The results from the main effect model revealed that there was a significant positive relationship between daily playful work design in the form of fun and daily work engagement ( $B = 0.222$ ,  $p < 0.001$ ), and similarly between daily playful work design in the form of competition and daily work engagement ( $B = 0.261$ ,  $p < 0.001$ ). Hence, hypothesis 2a and 2b are supported.

As formulated in hypothesis 3a, we expected the relationship between daily monotony and daily work engagement to be negatively moderated by daily playful work design in the form of fun, and expected a stronger negative relationship when playful work design in the form of fun was low compared to high. The results from the interaction model show that the interaction between daily monotony and daily playful work design in the form of fun was significant ( $B = 0.155$ ,  $p < 0.01$ ), supporting our hypothesis. To further explore the significant interaction involving designing fun, we depicted the relationship graphically using simple slope testing (see figure 2). On days where the cadets exhibited high levels of playful work design in the form of fun, the test revealed a statistically significant relationship between monotony and work engagement (simple slope =  $-0.203$  ( $-4.174$ ),  $p < 0.001$ ). Interestingly, this relationship was also statistically significant on days where cadets exhibited lower levels of playful work design in the form of fun (simple slope =  $-0.379$  ( $-8.011$ ),  $p < 0.001$ ). However, in line with our prediction, the negative relationship between daily monotony and daily work engagement was stronger when playful work design in the form of fun was lower compared to higher. Hence, hypothesis 3a is supported.

In hypothesis 2b, we expected the negative relationship between daily monotony and daily work engagement to be negatively moderated by playful work design in the form of competition, and similarly expected a stronger

negative relationship when playful work design in the form of competition was low compared to high. However, the interaction between daily monotony and daily playful work design in the form of competition was non-significant ( $B = 0.115, p > NS$ ). Hence hypothesis 3b is not supported.

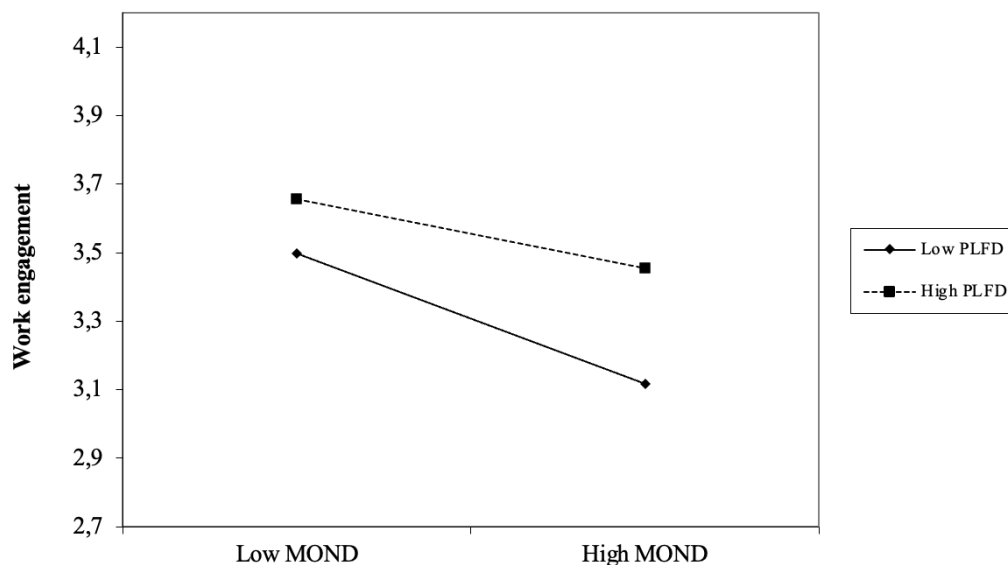
**Table 2**  
*Multilevel Analysis*

	B	SE	Null model		Main effect	
			model	SE	Interaction	model
			B	SE	B	SE
Intercept	3.424***	0.088	3.422***	0.088	3.431***	0.088
MOND			-0.299***	0.035	-0.291***	0.034
PLFD-m			0.222***	0.036	0.218***	0.036
PLCD-m			0.261***	0.042	0.253***	0.041
MOND*PLFD-m					0.155**	0.063
MOND*PLCD-m					0.115	0.074
Variance level 2 (person)	0.198 (42%)	0.057	0.203	0.057	0.199	0.056
Variance level 1 (day)	0.274 (58%)	0.016	0.183	0.010	0.178	0.010
-2 Log Likelihood	1073.637		820.408		801.144	

*Note.* MOND = Monotony, PLFD-m = Playful work design in the form of fun, PLCD-m = Playful work design in the form of competition. \*\*  $p < 0.01$ ., \*\*\*  $p < 0.001$  ( $N = 27$ , measurement points = 756). Variance and SE level 1 (day) (percentage of total variance)

**Figure 2**

*Simple slope analyses of the relationship between daily monotony and daily work engagement on days where cadets exhibit high and low levels of playful work design in the form of fun.*



*Note.* MOND = Monotony, PLFD = Playful Work Design in the form of fun.

## Discussion

In line with our prediction, we found support for a negative relationship between daily monotony and daily work engagement. In other words, the more monotony the cadets experienced on a given day, the more their work engagement decreased. Additionally, we found support for the expected positive relationships between playful work design (in the form of both fun and competition) and daily work engagement. Regarding the interactions, we found support for the prediction that playful work design in the form of fun negatively moderated the relationship between daily monotony and daily work engagement, thus mitigating the negative impact of monotonous work on the cadets' work engagement. Furthermore, the moderation effect was stronger when cadets exhibited higher levels of playful work design in the form of fun compared to lower levels. However, the equivalent interaction regarding playful work design in the form of competition did not show any significant effect, meaning that designing competition did not significantly moderate the relationship between daily monotony and daily work engagement.

Next, we will discuss the results of the study in more detail. This will be

followed by an examination of theoretical and practical implications, and, finally, we will suggest potential areas for future research.

### **Work engagement as a daily fluctuating phenomenon**

The prerequisite for utilising a diary study to measure work engagement is that work engagement indeed fluctuates on a daily level. The results from our null model showed that differences *within* individuals explained 58% of the total variation in work engagement, whereas differences *between* individuals explained 42%. These findings imply that the levels of work engagement varied within the cadets from day to day, aligning with previous research that supports work engagement as a daily fluctuating phenomenon (Bakker, 2014). Therefore, diary studies are well-suited to capture these daily fluctuations in work engagement.

### **The relationship between daily monotony and daily work engagement**

We found support for a negative relationship between daily monotony and daily work engagement. By controlling for work engagement on the prior day, we could more easily observe the patterns of how cadets were affected by more or less monotonous work and its impact on their engagement on that given day. In essence, our findings imply that on days when confronted with monotonous tasks, the cadets were likely to struggle to maintain their level of work engagement. This finding was expected and aligns with theory and previous studies highlighting how monotonous work can disengage workers by providing little stimuli, making the work less interesting, challenging, and meaningful (Scharp et al., 2021; Dishon-Berkovits et al., 2024). Such studies have employed large samples from a broad spectrum of occupations and organisations (Harju et al., 2016), with some also utilising quantitative diary studies (Scharp et al., 2021). Therefore, it is logical that on days when cadets were assigned monotonous work, they experienced reduced engagement.

The finding that monotonous work negatively correlates with work engagement aligns with the assumptions of the JD-R model. In line with the theory (Bakker & Demerouti, 2017), monotonous work can be considered a hindrance demand that, if the strain becomes too high, can increase the risk of stress and burnout, potentially leading to decreased motivation, satisfaction and engagement. Indeed, other studies employing the JD-R model have found similar outcomes when investigating boredom; persistent boredom at work tends to make employees dissatisfied and disengaged, diminishing their commitment (Kawada et

al., 2024). Conversely, adding more challenges to one's job in terms of new tasks or approaches increases the likelihood of employees engaging with and investing resources into their work (Harju et al., 2016). This finding is consistent with the JD-R model's assumptions regarding challenging demands, which, unlike hindrance demands, encourage employees to fully and purposefully engage in their work (Bakker & Demerouti, 2017). Therefore, to maintain high levels of work engagement, monotonous work may be viewed as a hindrance job demand that requires adequate job- or personal resources to deal with.

Principles of SDT (Ryan & Deci, 2000) may supplement these points by explaining how hindrance job demands, such as monotony, impede agency and lead to disengagement. Research indicates that job demands' impact on engagement can be mediated by the extent to which employees' basic psychological needs for autonomy, competence, and relatedness are satisfied (Albrecht, 2015). Unlike challenging demands that promote purposeful and energetic engagement, hindrance demands are negatively associated with satisfying these needs, contributing to decreased work engagement and other adverse outcomes (Crawford et al., 2010). This aligns with the understanding that hindrance demands obstruct goal achievement and personal growth, causing strains and decreased motivation (Bakker & Sanz-Vergel, 2013). It is plausible that need satisfaction mediates the observed negative relationship between daily monotony and the cadets' daily work engagement. Monotonous work may particularly undermine autonomy and competence needs, as evidenced by its impact on perceptions of meaningfulness, importance, efficacy, and competence in the role (Zeshan et al., 2023; Van den Broeck et al., 2016). Therefore, applying elements of SDT (Ryan & Deci, 2000) to this discussion adds to our understanding of how hindrance job demands, such as monotony, can influence work engagement.

### **The relationship between playful work design in the form of fun and work engagement**

We found support for a significant and positive relationship between PWD in the form of fun and daily work engagement. This suggests that the cadets were likely to experience increased work engagement on days when they incorporated elements of fun and play into their work. These findings are consistent with previous research indicating that designing fun effectively improves work



engagement and performance (Bakker et al., 2020b; Scharp et al., 2019). Our study contributes to this literature by showing that these strategies can be successfully applied in an operative context.

The inherent need for fun and play that is present in most people sheds light on the positive relationship between designing fun and daily work engagement. According to Donoff and Bridgman (2017), humans have an innate playfulness. While many perceive 'work' and 'play' as separate, the workplace can foster our innate playfulness. Research indicates that playful individuals can make any environment more enjoyable, entertaining, and stimulating (Barnett, 2007). Thus, it makes sense that cadets can make even the most monotonous tasks more enjoyable by integrating playful elements in the form of fun. Specifically, designing fun can enhance the cadets' enjoyment and sense of meaning, likely leading to increased engagement.

The positive relationship between designing fun and daily work engagement can be understood in light of JD-R theory and the development and utilisation of personal resources at work. Previous studies show that when employees face hindrance demands, maintaining engagement and performance is easier with sufficient resources (Tadić et al., 2015; Bakker et al., 2020b). The JD-R model suggests that not only job resources, but also personal resources, can mitigate the negative effects of hindrance job demands on well-being (Bakker & Demerouti, 2017). Although organisations can help their employees by equipping them with resources, employees can also take a proactive approach to better their own working situation. By redesigning their work to be more fun and playful, cadets in our study utilised their personal resources. Previous research indicates that this approach can enhance feelings of control and the ability to influence the work environment (Petelczyc et al., 2018). Additionally, this may reduce boredom, work-related stress, and increase work engagement (Scharp et al., 2019). Therefore, playful work design in the form of fun is not just a proactive strategy but also a valuable personal resource for enhancing engagement.

The relationship between designing fun and daily work engagement can also be understood in terms of the basic psychological need for relatedness. According to SDT, relatedness refers to the basic need to integrate into the social environment and includes feelings of attachment and belonging (Sailer et al., 2017; Deci & Ryan, 1985; Ryan & Deci, 2000). Sailer et al. (2017) suggest that basic psychological needs can serve as motivational resources that individuals can

develop by transforming their environment. Play is inherently interactive, involving both the individual and others (Van Vleet & Feeney, 2015). Thus, introducing playful elements in the form of fun, especially when shared with colleagues, can foster a sense of belonging and enhance social relatedness (Sailer et al., 2017). While the primary goal of play is enjoyment, connecting with others is an additional goal (Mainemelis & Ronson, 2016). Hence, playful interactions with colleagues may have contributed to the observed increase in work engagement among cadets who implemented fun elements into their tasks.

### **The relationship between playful work design in the form of competition and work engagement**

We found support for our prediction regarding a positive relationship between playful work design in the form of competition and work engagement. Our findings show that by proactively designing work tasks to be competitive, the cadets can make them more entertaining, challenging, and complex, creating opportunities to experience competence and more engagement with work.

There are numerous ways to understand this relationship, one of which involves looking at how designing competition can work as a personal resource to foster work engagement. In light of the JD-R model (Bakker & Demerouti, 2017), job resources act as primary drivers of employee engagement, as making work competitive to promote feelings of efficacy and achievement may increase employee engagement. Harju et al. (2016) discussed that boredom is likely to arise when faced with monotonous work tasks and, consequently, the risk of experiencing disengagement. Experiencing work tasks as exciting and challenging can activate the body and may counter these effects, leading the cadets to remain engaged and involved in their work (Csikszentmihalyi, 1975). These points suggest that the cadets, as most employees in general, need to experience their work tasks as challenging and exciting. The cadets who utilise their personal resources by approaching work tasks in new ways can proactively change their work experience during the execution of the activity to become exciting, challenging, and engaging (Scharp et al., 2019). In essence, designing competition can be considered a personal resource and proactive strategy cadets employ to enhance their job engagement.

Moreover, this relationship can be interpreted through the need satisfaction of basic psychological needs and their association with work engagement. In other

words, PWD in the form of competition could serve as a strategy to satisfy the cadets' need for autonomy and control. Autonomy is a widely studied factor in relation to achieving work engagement. In military settings, the presence of monotony and uniformity frequently results in a lack of autonomy and freedom (Bartone, 2006). Factors such as heavy workloads, prolonged shifts, and repetitive tasks over time further accentuate this environment. Nevertheless, implementing competition presents a promising avenue for addressing this issue by catering to engagement through satisfying basic needs. By incorporating elements of competition and giving individuals more control over their work tasks, PWD in the form of competition, offers a means to fulfil this need to facilitate the cadets' engagement. Several studies have explored the significance of autonomy and control in relation to work engagement. Specifically, a study conducted by Scharp et al. (2022) delves into this topic, providing insights as to how PWD in the form of competition can meet the need for autonomy and thus enhance work engagement. The study further supports the argument that designing competition can potentially increase engagement and satisfaction by introducing elements of competition and giving individuals more control over their work tasks. Despite the challenges posed by the lack of autonomy, designing competition shows promise in addressing these issues and can potentially assist the cadets in achieving higher levels of work engagement in their military operations. Hence, designing work tasks as more competitive can be a valuable strategy to enhance cadets' work engagement by addressing their need for autonomy, competence, and control.

### **The moderating role of playful work design in the form of fun**

We found support for the predicted moderating effect of PWD in the form of fun and the relationship between daily monotony and daily work engagement. This implies that on days when cadets experienced high levels of monotony in their work tasks, incorporating playful elements into their work served as a "buffer", proactively creating their own optimal work experience. In other words, the cadets took initiative to actively shape their work environment to enhance their own engagement and satisfaction.

In the case of using PWD as a personal resource to be better equipped to stay engaged on days influenced by monotonous tasks, a possible explanation for this effect might be visible through the JD-R model (Bakker & Demerouti, 2017). When cadets face monotonous tasks, these tasks can be perceived as a hindrance

demand and a lack of resources. In the context of this study, the introduction of PWD in the form of fun serves as a valuable strategy to mitigate disengagement by transforming monotonous tasks into more enjoyable and stimulating activities. By addressing the lack of stimuli and challenges inherent in monotonous work, playful attitudes and activities become essential resources in terms of protecting work engagement.

Monotony in tasks is often intricately linked with boredom, a prevalent issue in workplace settings. Indeed, previous research suggested that engaging in play and fun offers a promising avenue to counteract the adverse effects of hindrance demands such as monotonous activities. Csikszentmihalyi (1975) proposed that immersing oneself in enjoyable activities can facilitate a state of flow, where individuals become fully absorbed in the task, disconnecting from external stressors. Proactively emphasising a task's engaging, creative and humorous aspects can evoke positive emotions such as joy, excitement, and engagement. Additionally, previous research supports the notion that play and fun can aid individuals in alleviating frustration, stress, and worries associated with monotonous tasks (Van Vleet & Feeney, 2015), and unlock possibilities to elevate stimulation levels, effectively averting boredom and safeguarding against decreased engagement.

Furthermore, the SDT (Ryan & Deci, 2000) could offer valuable insights into the moderating effect of designing fun. PWD in the form of fun has been linked to relatedness, as playful activities often involve interaction and collaboration with others. By fostering a sense of belonging and connection with colleagues, designing fun enhances the quality of interpersonal relationships in the workplace (Becker & Tews, 2016), contributing to higher levels of work engagement (Sailer et al., 2017). Additionally, autonomy could be satisfied by giving individuals the liberty to approach their tasks playfully, allowing them to exercise control and choice in their work activities. Monotonous and repetitive tasks associated with stress and boredom in military operations are common for cadets (Bartone, 2006), and increased autonomy can empower individuals to shape their work environment to suit their preferences, thus enhancing their sense of ownership and engagement. Lastly, PWD in the form of fun can promote feelings of competence by providing opportunities for skill development and mastery. Engaging in enjoyable and challenging activities can foster a sense of

accomplishment, competence, and efficacy, potentially leading to increased motivation and engagement (Scharp et al., 2022).

### **The moderating role of playful work design in the form of competition**

Our prediction that PWD in the form of competition would moderate the relationship between daily monotony and daily work engagement was not supported. This was surprising as prior research has suggested that implementing elements of competition into work activities could act as a buffer to agency hindrance demands. This implies that on days when cadets experience high levels of monotony in their work tasks, those who, on their own initiative, manage to perceive the meaningful, exciting, and challenging aspects of their tasks may experience less negative effects on work engagements.

There may be various explanations for the lack of a significant moderating effect of designing competition, one of which could involve individual variations in response to boredom, PWD, and engagement. This entails not only the individual response to the actual use of PWD itself when working, but also whether or not PWD is utilised in the first place. Prior research has indicated that a one-size-fits-all approach might not be an optimal solution to counter disengagement (Dishon-Berkovits et al., 2024). This implies that there is room for individual variations in the effectiveness of designing competition to moderate the relationship between monotony and work engagement. For instance, Scharp et al. (2019) found that individuals who scored high on traits such as openness to experiences and playfulness showed stronger tendencies to want to adopt PWD in the form of competition. However, it is plausible that our sample of cadets might not perceive competition as an optimal solution for maintaining engagement, perhaps due to a discrepancy between trait profiles or preferences and competitive dynamics. Additionally, individual differences in response to work engagement and monotony could also play a vital role in describing this result. Following the research by Mäkikangas et al. (2013), consistent positive associations between certain personality factors from the Big Five model and work engagement have been highlighted. Specifically, emotional stability, extraversion, and conscientiousness have been linked to influence work engagement. Loukidou et al. (2009) suggest that certain personality traits may predispose individuals to experience boredom more frequently in their work. This emphasises that understanding these individual personality differences can provide insights into

how individuals perceive and respond to monotony in their work, consequently affecting the moderating effect of PWD in the form of competition.

Furthermore, the unpredictable nature of the context, specifically military operations, may have contributed to the reduced effectiveness of PWD in the form of competition. Although facing monotonous and repetitive tasks (Bartone, 2006) is not uncommon for cadets, military operations also pose a lack of predictability in tasks and situations on a day-to-day basis. This may present challenges in implementing PWD, as unclear guidelines regarding tasks and situations may hinder the effective utilisation of PWD. Thus, the unforeseeable nature of the military environment poses a challenge to design competition and may diminish the moderating effect on the relationship between monotony and work engagement - moreover, the feasibility of designing competition within specific tasks. For instance, tasks such as lookout duties in military operations may not lend themselves easily to competitive elements. These duties often require focus on the primary objective, which may not align well with the competitive dynamics commonly associated with PWD. In such cases, the nature of the task itself may impose constraints on the implementation of competitive elements.

### **Theoretical implications**

The present study contributes to the burgeoning field of playful work design by exploring its impact on work engagement within an operational military context. As PWD is a relatively new area of study, this study adds to the existing literature by elucidating how various forms of PWD influence the dynamics of work engagement. Additionally, by investigating the moderating effect of PWD on the relationship between monotony and work engagement, the research provides valuable insights into the implications of implementing playful elements in work environments. This study underscores the importance of considering PWD as a multifaceted construct that can enhance and constrain work engagement, offering nuanced perspectives for organisational practices in fostering employee engagement.

As well as serving as an addition to the existing literature, the study also supports and complements prior research, not only in terms of the direct relationships between PWD and work engagement (Bakker et al., 2020; Scharp et al., 2019; Scharp et al., 2021; Scharp et al., 2022) but also in terms of the relationship between monotony and work engagement (Dishon-Berkovits et al.,

2024; Harju et al., 2016; Scharp et al., 2021; Van den Broeck et al., 2016; Zeshan et al., 2023). Furthermore, it supports previous research stating that work engagement fluctuates (Bakker, 2013).

In accordance with the understanding of work engagement as a dynamic phenomenon, posited by the JD-R theory, the study demonstrates daily fluctuations in work engagement among cadets, with work engagement varying within individuals from day to day. Specifically, it reveals a negative relationship between daily monotony and work engagement, suggesting that monotonous tasks serve as a hindrance job demand that diminishes work engagement. Moreover, there is also an indication that PWD can be considered a personal resource in fostering engagement. The positive relationship between playful work design in the form of fun and competition and work engagement indicates that employees who proactively integrate elements of fun and/or competition into their work experience heightened levels of engagement. This is in line with the JD-R model's proposition that personal resources and job resources can mitigate the adverse effects of hindrance demands on employee well-being (Tadic et al., 2015; Bakker et al., 2020). Additionally, the use of self-initiated PWD appears to be more helpful in mitigating the impact of monotony and maintaining work engagement, especially on days when cadets encounter high levels of monotony in their tasks.

Our findings showed that designing fun had a significant moderator role on the relationship between monotony and work engagement, whereas designing competition did not, further highlighting the importance of distinguishing between different forms of PWD. This suggests that not all playful elements are equally effective in mitigating the negative effects of monotony on work engagement. Specifically, fun appears to be more universally beneficial, aligning with theories that emphasise the role of positive emotions and intrinsic motivation (e.g. SDT by Ryan & Deci, 2000). Furthermore, the positive effect of fun can be linked to several concepts such as flow (Csikszentmihalyi, 1975). Fun activities may facilitate flow states, where individuals are fully absorbed in their tasks, thereby reducing the negative impact of monotony on work engagement. Hence, adding to the understanding of how specific types of PWD can promote optimal work experiences.

The study further supports the value of diary studies in this context with the ability to capture daily dynamics and fluctuations in variables such as task monotony, self-initiated playful work design, and work engagement. Traditional

research designs in work and organisational psychology often rely on cross-sectional or longitudinal approaches (Ohly et al., 2010), exposing limitations in capturing daily variations. This research addresses these limitations by collecting participant data daily using a quantitative diary design. This was of considerable importance as our study showed that 58% of the total variance in work engagement was due to daily fluctuations within individuals, which aligns with indications from previous research (Bakker, 2014). Moreover, the within-subjects design employed in this investigation facilitates the exploration of daily interactions among variables within the same participants across time. This approach offers a more nuanced understanding of how daily fluctuations in task characteristics and PWD relate to variations in work engagement, contributing to a deeper understanding of the dynamic nature of these constructs.

### **Practical implications**

The findings of our study can make several practical contributions. These findings underscore the importance and potential benefits of incorporating elements of play and competition into the work environment to enhance employee engagement, particularly when facing monotonous work and other hindrance demands. By recognizing the value of incorporating playful elements, employees and organisations can strive to optimise engagement and well-being.

Firstly, viewed through a resource perspective, a personal and proactive approach may yield greater efficiency in resource utilisation compared to traditional top-down approaches. Historically, research and organisations have mainly focused on top-down approaches incorporating playful elements into work, primarily relying on costly strategies such as gamification (Herzig et al., 2015). However, the realisation that a one-size-fits-all approach might be too ambitious has led to a shift in focus (Dishon-Berkovits et al., 2024). The results from the study indicate that by empowering individuals to take a personal and proactive approach to playfully design their work tasks, organisations can enhance the effectiveness of this strategy. As mentioned, personality traits such as openness and playfulness increase the probability of adopting the strategy (Scharp et al., 2019). However, when employees have the freedom to create and design the work tasks that suit them best, there is a general sense that they are more likely to engage with the strategy and derive greater benefits from it. Hence, organisations should promote a culture that encourages employees to take ownership of their



work design and infuse it with playful elements tailored to their preferences and strengths. This approach increases the potential for optimal use of resources and fosters a sense of autonomy, competence, and engagement among employees.

Moreover, organisations should make an effort to raise awareness and facilitate the adoption of PWD among employees, as engaged employees yield advantages at the organisational level as well. The implementation of PWD in work contexts hinges significantly on raising awareness and facilitating its adoption. Awareness is crucial to ensuring the effective utilisation of PWD strategies. Through interventions containing lectures and PWD training programs, employees can gain information about its existence and exercise it in practice, thus serving as an effective channel for raising awareness about the strategies (Scharp et al., 2022). This increases the probability of experiencing the potential benefits of PWD, as this study supports that facilitating employees to incorporate elements of fun and play into their work tasks can significantly enhance work engagement. Particularly noteworthy is the moderating effect of designing fun on the relationship between monotony and daily work engagement, suggesting its heightened utility on days characterised by high levels of monotony. However, it is imperative to encourage the use of PWD when necessary, rather than imposing it as a forced measure. Intrinsic motivation is a crucial aspect of play (Mainemelis & Ronson, 2006; Petelczyc et al., 2018; Scharp et al., 2021), and participation in PWD programs and the general use of PWD should be voluntary (Scharp et al., 2021). This should be a priority for organisations as it is evident that engaged employees yield several advantages at an individual and organisational level. Previous research has shown that engaged employees exhibit positive physical and mental health outcomes (Seppälä et al., 2011), reduced absenteeism and turnover intention (Schaufeli, 2012), increased performance (Balducci et al., 2010; Singh & James, 2016), and a positive relation to business-unit performance, suggesting a potential competitive advantage (Harter et al., 2002; Schaufeli, 2012).

Furthermore, the finding that designing competition did not moderate the relationship between monotony and daily work engagement provides us some key insight regarding the practical application of PWD in the form of competition. Firstly, it challenges the assumption that integrating competition into work tasks universally buffers against agency hindrance demands. This highlights the need to consider individual variations in response to PWD, as not all employees may

perceive competition as motivating or engaging. In other words, the study underscores the importance of understanding individual personality traits, such as openness to experiences and playfulness, in shaping responses to PWD initiatives (Scharp et al., 2019). Secondly, the unpredictable nature of the military context introduces additional complexities in implementing PWD, particularly in the form of competition. The feasibility of incorporating competitive elements into specific tasks, such as lookout duties in military operations, poses practical challenges. This suggests that the nature of the task itself can impose constraints on the implementation of competitive dynamics, influencing their effectiveness in enhancing work engagement amidst monotony.

Ultimately, PWD can be used as a strategy to help employees stay engaged when confronted with hindrance demands. With the growing implementation of automated systems, consequently diminishing direct human involvement and increasing the prevalence of boredom in various work settings, there is a risk of the potential rise of hindrance demands such as monotony in the workplace (Cummings et al., 2015). Concerns about the expansion and development of technology and automated systems such as AI have been identified, encompassing factors such as the devaluing of human skills and reduced human control, posing a threat to well-being and engagement (Cowls & Floridi, 2018; Musikanski et al., 2019). Recognising that the nature of work is becoming increasingly monotonous (Cummings et al., 2015), proactive measures can be implemented to counteract its negative effects on employee engagement. By acknowledging the challenges posed by hindrance demands such as monotonous work activities, organisations can support employees in developing tailored interventions to enhance engagement.

### **Limitations and avenues for future research**

To fully evaluate our results, it is necessary to discuss the methodological limitations in our study. This also allows us to pinpoint areas for future research to address.

#### ***Limitations***

Like all research, our study has its limitations. An important limitation concerns the size of our sample and the extent to which this may restrict the generalizability of our findings. The response rate from the invited participants was lower than expected (38%), raising questions about whether our sample is representative of

the population we aim to study. This also raises concerns about whether our sample has enough statistical power to detect true relationships (Andrade, 2020). Also, with a smaller sample, the potential for random errors is higher (Springate, 2011). However, the fact that our study utilises repeated measurements over 28 days reduces the risk of such factors affecting the results, as these are likely to average out over time.

Another concern regarding the generalizability of our findings is the homogeneity of our sample. Our sample exclusively consisted of cadets at the Naval Academy, primarily young men. Additionally, the military may attract individuals with specific characteristics, leading to less personality variability across the population (Hystad et al., 2011). Consequently, even if our findings are representative of the population we aimed to study, it is necessary to question the extent to which these findings can be generalised to other working populations.

Our study relies on self-report data, which inherently raises validity concerns due to the possibility of common method variance. However, several factors mitigate the impact of this potential issue. Firstly, we employed validated measures with demonstrated construct validity, ensuring the reliability of our data. Secondly, as argued by Conway and Lance (2010), self-report measures may be appropriate, particularly when assessing personal experiences like those related to our study variables. Additionally, the presence of interaction effects in our analysis suggests that common method variance is not a significant concern (Scarph et al., 2021). Furthermore, our analysis incorporates within-person deviations, partially avoiding potential self-report biases associated with between-person differences (Gabriel et al., 2019). While the use of self-report data always warrants careful consideration, these factors collectively underscore the validity and reliability of our findings. Although it is impossible to eliminate these errors completely, we have taken steps to minimise the risk of them.

Cross-sectional studies also face the challenge of establishing causal relationships. In fact, Grosz et al. (2020) argue that addressing causal inference based on nonexperimental evidence has manifested as somewhat of a taboo. Even if we cannot draw firm conclusions regarding causal directions, there are several elements in our design that may allow us to imply them. For example, controlling for work engagement on the prior day allowed us to observe not only how monotony and PWD correlated with work engagement, but also the daily fluctuations in these relationships. Also, we observed that the negative

relationship between monotony and work engagement was stronger when playful work design in the form of fun was low compared to high, which strengthens our causal assumptions regarding how employees can utilise personal resources such as self-initiated PWD to elevate their own engagement when faced with monotonous work. Furthermore, we employed a diary study, allowing us to take measurements while the cadets' experiences were ongoing. The capturing of real-time experiences across multiple measurement points may allow us to more confidently imply causal directions in our findings.

### ***Future research***

Future research can expand upon our findings by exploring these relationships in various occupational groups, settings, and cultures. Our study revealed that on days when cadets designed fun, they were able to mitigate the negative impact of monotony on work engagement. Surprisingly, this buffering effect was not observed when cadets designed competition. This unexpected finding suggests the need for further investigation into the conditions under which designing fun and designing competition are most effective. For instance, it may be that the nature of military operations poses challenges in implementing competitive elements, or that individuals entering military training may possess traits less conducive to successfully engaging in competitive design, such as lower openness to experience (Jackson et al., 2012). Therefore, exploring these relationships with more heterogeneous samples could shed light on when and how designing competition and fun enhance work engagement.

We also encourage future research to employ a larger sample size to better represent the population. While we have drawn on theory and existing literature to discuss potential explanations for our findings, it is crucial to consider our sample size when interpreting them. Therefore, we advise researchers to replicate this study with a larger sample size, which would enhance the ability to detect true relationships (Andrade, 2020). Although we acknowledge the meaningfulness of our findings, we strongly recommend further research with larger samples to validate and extend these findings.

Monotonous work has been linked to various negative outcomes beyond disengagement, raising the question of whether PWD strategies can act as a buffer against these effects. For instance, Melamed et al. (1995) have associated monotonous work conditions with lower job satisfaction, higher stress levels,

absenteeism, and turnover intention. This suggests that using PWD to protect work engagement on monotonous days could potentially yield additional positive outcomes, a topic that future studies may wish to explore further.

Lastly, future research could employ experimental designs to strengthen the assumption of causal directions in our findings. Drawing from the JD-R model (Bakker & Demerouti, 2017), our study suggests that employees may utilise self-initiated PWD as a personal resource. By doing so, they may be able to protect their engagement when faced with hindrance job demands in the form of monotonous work. We also found that the negative relationship between monotony and work engagement was weaker on days when PWD in the form of fun was higher compared to lower, suggesting that the presence or absence of self-initiated PWD in the form of fun influenced how strongly monotony affected work engagement. However, it is plausible that individuals with higher engagement levels are more likely to engage in PWD, as suggested by Kahn (1990) and Maslach & Leiter (1997), who argue that engaged individuals invest more in their tasks and seek challenges. As such, it is possible that this proactive behaviour could stem from existing engagement. Given that experimental studies have demonstrated how other bottom-up job designs enhance engagement and performance (Oprea et al., 2019), future research could design interventions to stimulate PWD and observe their effects over time to clarify these causal relationships.

### **Conclusion**

The present study investigated how daily monotony and daily playful work design in the form of fun and competition relates to daily work engagement among cadets at the Royal Norwegian Naval Academy. The negative relationship we identified between monotony and work engagement implies that cadets struggled to maintain their engagement levels on days when they had to perform monotonous work. We found it reasonable to categorise work monotony as an agency hindrance demand that impedes agency and engagement by depriving individuals of the opportunity to create meaningful results and experiences. Additionally, we found that cadets who introduced elements of fun and competition into their work were able to elevate their work engagement. In other words, cadets who actively incorporated fun and competitive elements into their tasks demonstrated higher levels of engagement, emphasising the role of PWD as a personal resource in enhancing work experiences. Therefore, it was unsurprising that our findings

revealed that cadets who proactively redesigned their monotonous work to be more fun were able to protect their work engagement to a larger degree than those who did not. However, this was not the case when designing competition, suggesting the need for further exploration into the contextual factors influencing the effectiveness of the two forms of playful work design.

Our study contributes to the theoretical understanding and practical application in the field of organisational psychology. Our findings highlight the dynamic nature of work engagement, influenced by factors such as monotony and self-initiated playful work design. Theoretical frameworks such as the Job Demands-Resources model (Bakker & Demerouti, 2017) and Self-Determination Theory (Ryan & Deci, 2000) offer valuable insights into the mechanisms underlying these relationships. Moreover, our study underscores the practical significance of incorporating playful elements into the work environment to enhance employee well-being and performance. By empowering individuals to proactively shape their work experiences through playful designs, employees and organisations can create more engaging and fulfilling workplaces.

While our study provides valuable insights, it is not without limitations. Methodological constraints, such as the size and homogeneity of our sample, warrant caution in generalising findings. Future research should address these limitations and explore avenues for further investigation, including replication with larger samples and examination of additional outcomes beyond work engagement. The study emphasises the importance of incorporating playful elements into the work environment to mitigate the negative impact of monotony and enhance employee engagement. By understanding the dynamic interplay between task characteristics, individual behaviours, and engagement, employees can create conditions and organisations can create environments that promote vitality, well-being, and performance.

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