International Journal of Instructional Cases
ISSN: 2399-830x

# Virtual Team Management Strategies and Shipboard Fatigue among Sailors: The Moderating Effect of Remote Work Arrangements and the Mediating Role of Perceived Social Support

Sri Tutie Rahayu
Politeknik Maritim Negeri, Semarang, Indonesia
Email: tutie@polimarin.ac.id

**Received Date: 13-12-2022; Accepted Date: 25-04-2023; Publication Date: 28-05-2023**

**Abstract**

Shipboard fatigue is indeed a significant concern among sailors in the maritime sector, impacting their well-being and performance. This study investigates the impact of virtual team management strategies (i.e., flexible scheduling, virtual check-ins and technology use) on shipboard fatigue via the process of perceived social support and the moderating influence of remote work arrangements. A stratified sampling method was employed to choose participants from the Indonesian maritime sector. Data collection took place at two separate time points, with a total of 455 participants included in the study. The findings of the study indicate that the implementation of virtual team management strategies has a significant influence on shipboard fatigue and the perception of social support. The influence of perceived social support on shipboard fatigue was found to be statistically significant. Moreover, the association between virtual team management strategies and shipboard fatigue was found to be mediated by perceived social support. The relationship between perceived social support and shipboard fatigue was influenced by the specific type of remote work status. These findings exhibit theoretical implications in relation to comprehending the dynamics of virtual teams, social support, and fatigue within the maritime industry. This study makes a valuable contribution to the current body of literature by emphasizing the significance of virtual team management strategies and perceived social support in alleviating shipboard fatigue among sailors.

**Keywords:** Virtual Team Management Strategies; Shipboard Fatigue; Perceived Social Support; Remote Work Arrangements; Sailors, Maritime Sector.

How to cite (APA):
Rahayu, S. T. (2023). Virtual Team Management Strategies and Shipboard Fatigue among Sailors: The Moderating Effect of Remote Work Arrangements and the Mediating Role of Perceived Social Support. *International Journal of Instructional Cases*, *7*(1), 110-134.

International Journal of Instructional Cases

International Journal of Instructional Cases
ISSN: 2399-830x

## Introduction

The fast advancement of technology has brought about a significant transformation in the manner in which organizations function and engage in cooperation. The prevalence of virtual teams has risen, allowing organizations to overcome geographical limitations and access a wide range of talented individuals (Swartz & Shrivastava, 2022). Virtual teams, referred to as geographically dispersed teams or remote teams, have become increasingly prominent as they enable the utilization of the combined knowledge and skills of individuals, irrespective of their geographical proximity (Kilcullen, Feitosa, & Salas, 2022). In the contemporary context of a globalized economy, characterized by businesses' relentless pursuit of enhancing their competitive edge, virtual teams present a pragmatic approach to addressing the disparity between talent availability and organizational requirements (Flavián, Guinaliu, & Jordan, 2022). As a result, various organizations spanning different industries have adopted virtual team configurations, acknowledging the advantages they offer, including enhanced productivity, reduced expenses, and the ability to tap into a wider range of skilled individuals (Chai & Park, 2022). Virtual teams have demonstrated their effectiveness in diverse fields, but their management poses significant difficulties in high-pressure contexts, such as the maritime industry.

People employed in the maritime profession, who endure prolonged absences from their places of residence, encounter distinct difficulties pertaining to seclusion, weariness, and the preservation of equilibrium between professional and personal spheres (Thayer, 2021). The intricate interplay between the arduous nature of shipboard work and the lack of in-person communication necessitates the implementation of proficient strategies for managing virtual teams. If these challenges are not effectively addressed, they can have negative consequences on the well-being of sailors, the performance of the team, and the overall effectiveness of the organization (Esmaeili et al., 2022). Therefore, the present study aims to examine the intricate associations between strategies employed in managing virtual teams and the occurrence of fatigue among shipboard personnel. The primary objective is to address these concerns and identify viable and enduring resolutions. The management of virtual teams involves the implementation of various strategies, such as the adoption of flexible scheduling, regular virtual check-ins, and the utilization of technology (Ashwood & Tanner, 2023). The term of flexible scheduling pertains to the adjustment of work hours and tasks in order to accommodate the distinct demands and challenges encountered in the workplace (Marampoutis, Vinot, & Trilling, 2022). According to Davis et al. (2020), virtual check-ins encompass consistent communication and feedback strategies aimed at preserving team unity and promoting efficient collaboration. The concept of technology use refers to the application of diverse digital instruments and platforms in order to facilitate communication, information dissemination, and coordination within a team (Yacob & Peter, 2022).

International Journal of Instructional Cases
ISSN: 2399-830x

In addition, shipboard fatigue encompasses the physical and psychological weariness encountered by sailors as a result of the arduous and secluded nature of their work at sea (Claypoole, Horner, & Sanchez, 2022). According to Zhou et al. (2020), fatigue has the potential to exert negative effects on various aspects of individuals' professional performance, including job performance, decision-making abilities, and overall well-being. Therefore, it is imperative for organizations in the maritime sector to comprehend the significance of virtual team management strategies in relation to shipboard fatigue. This understanding is crucial in order to implement efficient measures and support systems. Furthermore, it is worth noting that perceived social support can function as a mediating factor, encompassing the individual's subjective perception of the aid, comprehension, and emotional backing received from their social network (Warshawski, 2022). It is anticipated that the implementation of effective strategies for managing virtual teams will result in an improvement in the perception of social support among sailors, ultimately leading to a reduction in fatigue experienced during shipboard operations. The role of perceived social support in mediating the relationship between virtual team management strategies and shipboard fatigue is a topic of interest, as it sheds light on the mechanisms through which these strategies impact fatigue levels.

Moreover, this research explores the moderating impact of remote work arrangements on the correlation between virtual team management strategies and shipboard fatigue. Remote work arrangements encompass various types of work arrangements that are implemented within virtual team settings. These arrangements include fully remote, partially remote, or rotation-based schedules (Shirmohammadi, Au, & Beigi, 2022). The anticipated impact of different remote work arrangements on the effectiveness of virtual team management strategies in mitigating shipboard fatigue is a subject of interest. The presence of this moderating effect will prove advantageous for organizations as it enables them to customize their management practices in accordance with the particular remote work arrangements that are implemented. Despite the rising number of virtual teams across various industries, there exists a lack of research pertaining to the maritime sector's particular challenges and managerial approaches, specifically in relation to shipboard fatigue (Xue & Tang, 2019). The main objective of this research paper is to address the existing academic void by examining the intricate correlation between strategies employed in managing virtual teams, fatigue experienced by sailors on board ships, the perceived level of social support, and work arrangements. Therefore, the main objectives of this study are as follows:

- To examine the relationship of virtual team management strategies (flexible scheduling, virtual check-ins, and technology use) with perceived social support and shipboard fatigue among sailors.
- To investigate the mediating role of perceived social support in the relationship between virtual team management strategies and shipboard fatigue.

International Journal of Instructional Cases
ISSN: 2399-830x

- To explore the moderating effect of remote work arrangements on the relationship between perceived social support and shipboard fatigue.

## Theoretical Foundation and Hypothesized Links

### Social Support Theory

This study's theoretical basis is centered on Social Support Theory, a framework that offers a comprehensive understanding of the impact of social relationships and supports systems on individuals' well-being and coping strategies (Bekiros, Jahanshahi, & Munoz-Pacheco, 2022). According to Huang and Zhang (2022), Social Support Theory suggests that individuals who have a greater perception of social support tend to exhibit improved physical and psychological well-being, particularly when faced with difficult or stressful circumstances. Within the scope of this research, the utilization of Social Support Theory as a conceptual framework is employed to investigate the intermediary function of perceived social support in the association between virtual team management strategies and shipboard fatigue among sailors. The hypothesis suggests that the implementation of effective strategies for managing virtual teams has the potential to augment the level of perceived social support experienced by sailors. This, in turn, may serve as a mitigating factor in counteracting the adverse effects of shipboard fatigue. Perceived social support, as posited by Social Support Theory, encompasses emotional, informational, and instrumental support, as outlined by Ferber et al. (2022). Emotional support encompasses the provision of empathy, care, and understanding, which serves to offer individuals a feeling of comfort and reassurance (Oberländer & Bipp, 2022).

Informational support comprises the act of offering counsel, direction, and pertinent knowledge to aid individuals in navigating particular obstacles (Mana et al., 2022). Instrumental support refers to the provision of practical assistance, resources, and tangible aid aimed at addressing specific needs (Charoensukmongkol & Phungsoonthorn, 2022). In the context of virtual teams, the implementation of effective strategies for managing virtual teams can cultivate an atmosphere that facilitates the provision of social support among team members. For instance, the implementation of regular virtual check-ins and the cultivation of open communication channels can augment emotional support by enabling sailors to share their experiences and concerns, as well as seek empathetic responses from their team members and leaders. The implementation of flexible scheduling has the potential to afford sailors a heightened sense of agency in managing their work-life equilibrium, thereby enhancing their perceived levels of social support and overall well-being. Therefore, this study seeks to improve our comprehension of the effects of virtual team management strategies on shipboard fatigue among sailors, utilizing Social Support Theory as a theoretical framework. This theoretical framework offers a perspective through which the mediating function of perceived social support can

International Journal of Instructional Cases
ISSN: 2399-830x

be examined, highlighting the significance of establishing supportive virtual team environments within demanding maritime settings.

**Virtual Team Management Strategies on Shipboard Fatigue**

The maritime sector operates within a distinct and challenging setting, wherein seafarers encounter extended periods of seclusion and are subjected to elevated levels of stress (Thayer, 2021). Virtual teams have become increasingly popular in organisations as a means to overcome geographical barriers and effectively utilise talent (Mimica et al., 2022). The proficient administration of virtual teams within the maritime industry is of utmost importance in order to alleviate the detrimental consequences of fatigue experienced by crew members aboard ships. The objective of this research is to examine the effects of various virtual team management approaches, namely flexible scheduling, virtual check-ins, and technology utilisation, on the occurrence of shipboard fatigue among sailors. According to Maderna et al. (2022), the implementation of flexible scheduling is a crucial strategy in managing virtual teams, as it enables sailors to exert more autonomy over their work hours and responsibilities.

Organizations can improve their ability to address the distinctive challenges encountered by sailors during their tenure on board by implementing flexible scheduling and task allocation strategies. The positive correlation between flexible scheduling and employee well-being was underscored in a study conducted by Hunter (2019), which emphasized the significance of flexible scheduling in mitigating fatigue and stress levels. Simultaneously, virtual check-ins pertain to routine communication and feedback mechanisms within virtual team environments (Kilcullen et al., 2022). They facilitate team members and leaders in preserving team cohesion, overseeing progress, and promptly resolving any emerging issues.

Virtual check-ins provide employees with a platform to express their concerns, seek assistance, and obtain feedback, thereby cultivating a sense of inclusion and mitigating sensations of seclusion (Ashwood & Tanner, 2023). The significance of regular communication and interpersonal engagement in virtual teams was underscored in a study conducted by Swartz and Shrivastava (2022), which emphasised the favourable effects of these factors on team cohesion and member satisfaction. The implementation of virtual check-ins within maritime virtual teams can offer sailors a system of support and mitigate the psychological and emotional burden associated with isolation at sea, thereby leading to a reduction in fatigue levels. Furthermore, technology assumes a crucial role in enabling communication, collaboration, and coordination among members of virtual teams. The use of digital technologies, including video conferencing, instant messaging, and collaborative platforms, within the maritime industry facilitates the overcoming of geographical barriers among sailors, enabling efficient communication and collaboration (Purwanto & Sulaiman, 2023). According to recent research conducted by Claypoole et al. (2022) and Fernandes et al. (2022), the

International Journal of Instructional Cases
ISSN: 2399-830x

utilization of technology in virtual teams operating in the maritime sector has been found to enhance task efficiency, mitigate misunderstandings, and enhance overall team effectiveness. These positive outcomes have the potential to reduce the occurrence of shipboard fatigue. Therefore, it is hypothesized that;

**Hypothesis 1:** Virtual team management strategies (flexible scheduling, virtual check-ins, and technology use) have a direct negative association with shipboard fatigue among sailors. Specifically, higher levels of virtual team management strategies will be associated with lower levels of shipboard fatigue.

**Virtual Team Management Strategies on Perceived Social Support**

In the maritime sector, the incorporation of flexible scheduling practises within virtual teams can contribute to the provision of sailors with a perception of assistance and empathy, thereby augmenting their perceived social support. Concurrently, virtual check-ins play a role in fostering the growth of supportive relationships through their facilitation of interpersonal connections and the provision of opportunities for information sharing and emotional exchanges (Haun et al., 2022). In the maritime industry, the incorporation of virtual check-ins into the administration of virtual teams has the potential to foster a supportive atmosphere, promoting a sense of connection and appreciation among sailors, ultimately augmenting their perception of social support. In addition, it should be noted that the utilisation of efficient technological tools and platforms plays a significant role in facilitating interactions, promoting the exchange of knowledge, and cultivating relationships. These aspects are considered vital components of social support, as highlighted by Wibowo (2022). Therefore, the significant influence of virtual team management strategies, such as flexible scheduling, virtual check-ins, and technology utilization, on the perception of social support among sailors in the maritime industry has been established (Claypoole et al., 2022). These strategies can be employed by organizations operating in the maritime sector to foster conducive virtual team environments, thereby enhancing the overall well-being and satisfaction of sailors. Therefore, it is hypothesized that;

**Hypothesis 2:** Virtual team management strategies (flexible scheduling, virtual check-ins, and technology use) are positively associated with perceived social support.

**Perceived Social Support on Shipboard Fatigue**

Inside the maritime sector, individuals employed as sailors frequently encounter elevated levels of stress and fatigue as a result of the challenging demands inherent to their shipboard duties (Thomas et al., 2019). The presence of social support can have a significant impact on mitigating the adverse consequences of fatigue in isolated and challenging settings (Jameson et al., 2023). Perceived social support pertains to an individual's subjective appraisal of the assistance, comprehension, and emotional sustenance they receive from others (Huang & Zhang, 2022). Multiple

International Journal of Instructional Cases
ISSN: 2399-830x

research studies have elucidated the advantageous impacts of perceived social support on the overall well-being of individuals and the mitigation of stress. Zhang et al. (2022) conducted a study that revealed a negative correlation between perceived social support and stress and fatigue levels among individuals. Previous investigation has demonstrated that the existence of social support can mitigate the adverse effects of stressors, bolster coping strategies, and foster psychological well-being (Ferber et al., 2022). Furthermore, in the maritime domain, the level of social support perceived by sailors can have a substantial influence on the occurrence of shipboard fatigue. According to Asif et al. (2023), sailors can experience a sense of connectedness and belonging through the provision of emotional and instrumental support from a supportive network consisting of colleagues, supervisors, and family members. According to Nguyen and Tuan (2022), the provision of emotional support by empathetic and understanding individuals can effectively mitigate the psychological strain associated with shipboard work, thereby resulting in reduced levels of fatigue. Furthermore, the implementation of open communication, the establishment of mentoring programs, and the incorporation of support systems have the potential to augment the perception of social support among employees. This, in turn, can lead to a reduction in fatigue levels and an enhancement of the overall well-being of individuals within the workforce (Wang, 2022). Hence, it is projected that;

**Hypothesis 3:** Perceived social support negatively associate with sailors' shipboard fatigue.

**The Mediatory Role of Perceived Social Support**

The inclusion of virtual teams within the organisational framework has become an essential component, facilitating collaborative efforts across geographical limitations (Kilcullen et al., 2022). Nonetheless, within the maritime sector, the arduous nature of shipboard tasks frequently gives rise to elevated levels of fatigue among seafarers (Zhou et al., 2020). The objective of this research is to investigate the mediating effect of perceived social support on the relationship between virtual team management strategies, such as flexible scheduling, virtual check-ins, technology use, and shipboard fatigue. Gaining a comprehensive understanding of the fundamental mechanisms by which perceived social support impacts the correlation between virtual team management strategies and shipboard fatigue can yield valuable insights for the development of interventions aimed at providing support to sailors in virtual team settings. Studies in the past have shown the beneficial impact of perceived social support on the well-being of individuals and the alleviation of stress (Mana et al., 2022). When individuals have a greater perception of social support, they tend to experience reduced levels of fatigue and stress. According to Kim, So, and Wirtz (2022), the existence of social support functions as a protective mechanism against the adverse effects of stressors and fosters psychological well-being. The objective of the present study is to expand upon the existing body of knowledge and examine the underlying mechanism by which perceived social support influences the

International Journal of Instructional Cases
ISSN: 2399-830x

effectiveness of virtual team management strategies in addressing shipboard fatigue among sailors. Therefore, it is hypothesized that;

**Hypothesis 4:** Perceived social support will mediate the association between virtual team management strategies (flexible scheduling, virtual check-ins, and technology use) and shipboard fatigue among sailors. Specifically, higher levels of virtual team management strategies will be positively associated with perceived social support, which in turn will be negatively associated with shipboard fatigue.

**The Moderating Role of Remote Work Status**

Current research indicates that the extent of interaction and support received can differ among individuals with remote work status. Certain employees or workers may be assigned to a comprehensive remote work arrangement, while others may be assigned to a hybrid arrangement that involves alternating between remote work and on-site work (De Vincenzi et al., 2022). The nature of an individual's remote work arrangement can have an influence on the extent and caliber of social support they receive. Various factors, including the physical separation between individuals, the restricted opportunities for in-person interactions, and the dependence on technology-mediated communication, can significantly impact the perceived extent of social support within remote work environments. According to Hunter (2019). Previous research investigations have provided evidence supporting the notion that perceived social support has a beneficial impact on an individual's well-being and can help alleviate stress. Previous research has indicated a negative correlation between heightened perceptions of social support and decreased levels of fatigue and stress (Zou et al., 2023). Social support plays a protective role in mitigating the adverse effects of stressors, thereby fostering psychological well-being (Razgulin, Argustaitė-Zailskienė, & Šmigelskas, 2023).

Additionally, the moderating influence of remote work status indicates that the association between perceived social support and shipboard fatigue could potentially differ depending on the specific type of remote work arrangement. In work environments that are entirely remote, where opportunities for in-person interactions are restricted, the significance of perceived social support becomes heightened in alleviating fatigue (Lampe, 2021). According to Gommans and Leider (2022), the implementation of remote work arrangements that offer extensive virtual communication, mentoring initiatives, and supportive networks can effectively mitigate the negative consequences associated with shipboard fatigue. On the contrary, within hybrid remote work configurations, individuals in maritime occupations may experience advantages derived from a blend of face-to-face and digital engagements. The provision of on-site assistance and in-person interactions has the potential to complement the perceived social support obtained through remote means, thereby potentially mitigating levels of fatigue (Thayer, 2021). Therefore, comprehending the moderating function of remote work status can assist organizations in customizing

International Journal of Instructional Cases
ISSN: 2399-830x

support mechanisms to meet the distinct requirements of individuals working remotely in the maritime industry. Hence, it is hypothesized that;

**Hypothesis 5:** The type of remote work status will moderate the relationship between perceived social support and shipboard fatigue. Specifically, sailors in fully remote work arrangements will exhibit a stronger association between perceived social support and shipboard fatigue compared to sailors in hybrid remote work arrangements.

### Theoretical Framework

Drawing upon the Social Support Theory proposed by Cohen and Wills (1985), the present study endeavors to put forth a conceptual framework, as depicted in Figure 1, that elucidates the presumed interrelationships among the variables under investigation.

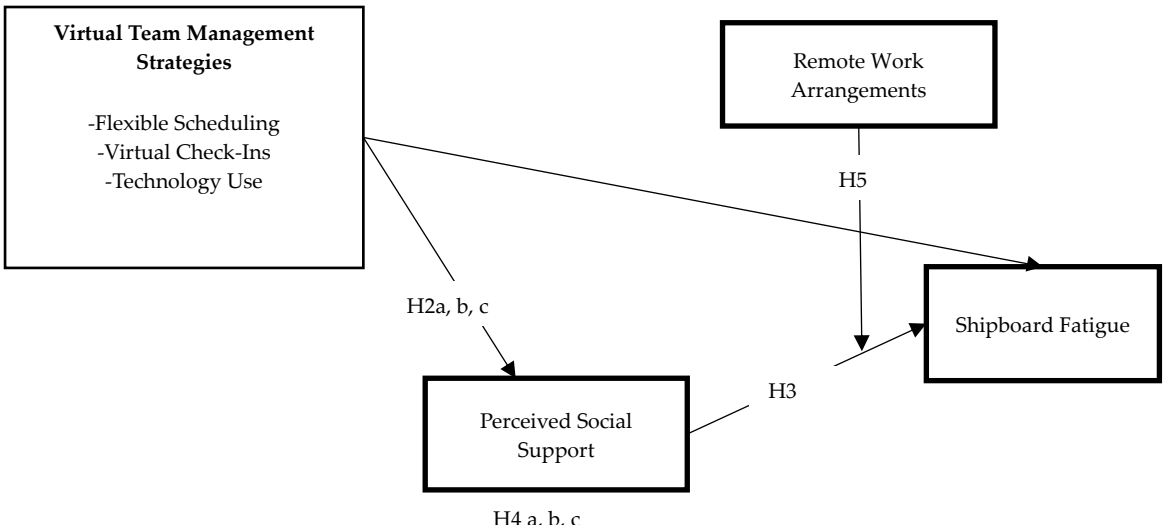


**Figure 1.** The theoretical framework of the study

## Research Methodology

The research employed a time-lagged data collection approach, wherein data was gathered at two distinct time intervals to capture temporal variations (Mansoor, Awan, & Paracha, 2022). The employing of stratified sampling was implemented in order to guarantee the acquisition of a representative sample from various sectors within the maritime industry. The process of data collection encompassed multiple stages. Initially, an exhaustive compilation of companies and organisations operating within the maritime sector of Indonesia was undertaken. In order to ensure representation across various sectors, the sampling frame was stratified into distinct categories, including shipping companies, port authorities, maritime training institutions, and maritime service providers. The process of reaching out to potential respondents was conducted in a systematic way. The contact details of key personnel or human resources departments for each organization were acquired by the researchers through publicly accessible sources and industry directories. A preliminary electronic communication was dispatched to the designated individuals, elucidating the objective

International Journal of Instructional Cases
ISSN: 2399-830x

of the investigation, underscoring the strict adherence to confidentiality and anonymity in relation to the collected data, and requesting consent to disseminate the questionnaire among members of their respective organizations. The survey instrument was distributed to the designated participants through electronic means subsequent to obtaining affirmative responses and official authorizations. The participants were given explicit and comprehensive instructions to guarantee precise and uniform execution of the survey. A significant proportion of the companies and organizations initially approached within the Indonesian maritime sector expressed their willingness to participate in the study.

The researchers ensured consistent communication with the designated contacts, effectively addressing any inquiries or apprehensions that arose throughout the distribution phase of the survey. The survey participants were provided with an appropriate time period within which to fulfill the survey. Several reminders were dispatched in order to increase response rates and motivate prompt completion. The process of data collection encompassed two distinct time points, namely Time 1 and Time 2. The data collection for Time 1 occurred between August 1, 2022, and September 30, 2022. Data collection for Time 2 commenced on October 1, 2022, and concluded on November 30, 2022, following a four-week interval. The temporal delay facilitated the analysis of temporal variations in the variables under investigation. Following the conclusion of the data collection phase, a thorough examination of the responses was conducted to ensure their comprehensiveness and coherence. Responses that were either incomplete or inconsistent were omitted from the final dataset. The ultimate dataset comprised of 455 questionnaires that were fully completed by participants from the maritime sector in Indonesia. During the process of collecting data, the researchers took measures to guarantee the confidentiality and anonymity of the participants' responses. The data were securely stored and accessed exclusively by the research team for the purpose of analysis.

**Demographic Characteristics of the Respondents**

This research sought to analyze the demographic characteristics of the respondents in order to obtain a comprehensive understanding of the composition of the sample. The findings derived from the survey conducted among individuals employed in the maritime sector of Indonesia unveiled a heterogeneous demographic composition of participants. The sample population exhibited a gender distribution with 78% male respondents and 22% female respondents. In terms of age demographics, a majority of the participants, accounting for 60% of the sample, belonged to the age range of 25-35 years. The sample consisted of individuals between the ages of 36 and 45, who made up 30% of the participants, while those aged 46 and above constituted 10% of the sample. With regards to the participants' educational attainment, it was found that 45% of the respondents had completed a

International Journal of Instructional Cases
ISSN: 2399-830x

bachelor's degree, 30% had obtained a master's degree, and the remaining 25% possessed alternative qualifications such as vocational or professional certifications. In relation to professional experience, the majority of participants (55%) possessed a work history of 5-10 years within the maritime industry. Additionally, 30% of respondents reported having 10-15 years of experience, while the remaining 15% indicated having accumulated more than 15 years of experience. Furthermore, the participants encompassed diverse sectors within the maritime industry, comprising 40% employed in shipping companies, 25% in port authorities, 20% in maritime training institutions, and 15% in maritime service providers.

**Study Metrics**

The assessment of participants' usage of flexible scheduling was conducted by employing a scale that was adapted from Grant and Ashford's (2008) work. The scale comprised items that assessed the extent to which participants possessed control over their work schedules, their capacity to modify working hours to accommodate personal requirements, and their level of adaptability within virtual team settings. The virtual check-ins questionnaire assessed the frequency and efficacy of communication and coordination among team members in virtual environments. The frequency of virtual check-ins, such as team meetings, video conferences, or online collaboration sessions, was assessed by participants (Feitosa & Salas, 2021; Lomicka, 2020). The assessment of technology utilisation in virtual teams was conducted through the administration of a questionnaire that was modified from a previous study conducted by Ng, Lit, and Cheung (2022). The survey assessed the frequency at which participants utilised various technological tools and platforms, including project management software, video conferencing tools, and instant messaging applications. The proficiency and frequency of technology use in virtual team interactions were assessed by the participants. The scale developed by Zhou et al. (2020) was utilised to assess the participants' degree of fatigue experienced during shipboard operations. The participants provided subjective ratings of their levels of fatigue, exhaustion, and weariness that they experienced while working on board ships. The measurement of participants' perception of social support was conducted using the scale developed by Wang and Eccles (2012).

The participants provided ratings indicating their level of agreement with statements pertaining to the emotional and instrumental support they received from different sources. The scale used in this study encompassed various types of remote work arrangements, as indicated by the participants. The items in the scale were designed to evaluate the characteristics of their remote work, including whether it was fully remote or a hybrid remote arrangement. The participants provided information regarding their remote work status by reporting the frequency and scope of their remote work arrangements.

International Journal of Instructional Cases
ISSN: 2399-830x

### Descriptive Statistics

Table 1 presents descriptive statistics for five variables examined in a study.

**Table 1.** Descriptive Statistics for Study Variables

| Variables | Mean | Std. | Skewness | Kurtosis | Min. | Max. |
|---|---|---|---|---|---|---|
| Flexible Scheduling | 4.52 | 0.87 | -0.12 | 0.62 | 2.10 | 6.80 |
| Virtual Check-ins | 3.78 | 0.92 | 0.35 | -0.18 | 1.50 | 5.60 |
| Technology Use | 4.10 | 0.76 | -0.05 | 0.42 | 2.40 | 5.90 |
| Shipboard Fatigue | 2.95 | 0.68 | 0.72 | 0.95 | 1.20 | 4.80 |
| Perceived Social Support | 3.85 | 0.92 | -0.20 | 0.58 | 1.80 | 6.20 |

The mean values, which indicate the average scores, were computed for each variable. The variable "Flexible Scheduling" exhibited a mean value of 4.52, suggesting that, on average, participants reported a considerable degree of flexibility in their scheduling. The variable labelled as "Virtual Check-ins" exhibited a marginally lower mean value of 3.78, indicating that participants were somewhat less engaged in the practise of virtual check-ins. The participants in the study exhibited a moderate level of technology utilisation, as evidenced by the mean score of 4.10 on the "Technology Use" scale. The participants in the study reported experiencing a phenomenon known as "Shipboard Fatigue" with an average score of 2.95, indicating that the levels of fatigue reported were relatively low. Finally, the variable "Perceived Social Support" exhibited a mean value of 3.85, indicating that participants held perceptions of moderate levels of social support within their immediate surroundings. Table 1 presents the standard deviation, skewness, kurtosis, minimum, and maximum values for each variable. These statistical measures offer insights into the variability, distribution shape, and range of responses observed in the study.

### Correlation among Study variables

Table 2 displays the pairwise correlations between the variables in the study.

**Table 2.** Correlation Matrix for Study Variables

| Variables | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. Flexible Scheduling | 1.00 | | | | | |
| 2. Virtual Check-ins | 0.42 | 1.00 | | | | |
| 3. Technology Use | 0.34 | 0.58 | 1.00 | | | |
| 4. Shipboard Fatigue | -0.25 | -0.18 | -0.15 | 1.00 | | |
| 5. Perceived Social Support | 0.56 | 0.45 | 0.39 | -0.32 | 1.00 | |
| 6. Type of Remote Work | 0.12 | 0.19 | 0.26 | 0.21 | 0.38 | 1.00 |

International Journal of Instructional Cases
ISSN: 2399-830x

There is a positive correlation between flexible scheduling and virtual check-ins ($r = 0.42$, $p < 0.05$), as well as technology use ($r = 0.34$, $p < 0.05$). This indicates that individuals who have higher levels of flexible scheduling tend to participate in virtual check-ins more frequently and make more extensive use of technology in virtual team settings. There exists a negative correlation between shipboard fatigue and flexible scheduling ($r = -0.25$, $p < 0.05$), suggesting that individuals who have more flexible scheduling arrangements tend to have lower levels of fatigue. Furthermore, there exists a negative correlation between shipboard fatigue and virtual check-ins ($r = -0.18$, $p < 0.05$) as well as technology use ($r = -0.15$, $p < 0.05$). This indicates that increased participation in virtual check-ins and utilisation of technology are linked to decreased levels of fatigue. The results of the study indicate that there is a positive correlation between perceived social support and three variables: flexible scheduling ($r = 0.56$, $p < 0.05$), virtual check-ins ($r = 0.45$, $p < 0.05$), and technology use ($r = 0.39$, $p < 0.05$). This suggests that individuals who perceive higher levels of social support also report higher levels of flexible scheduling, engagement in virtual check-ins, and technology use. In conclusion, there exists a negative correlation ($r = -0.32$, $p < 0.05$) between perceived social support and shipboard fatigue, indicating that increased levels of perceived social support are linked to decreased levels of fatigue.

**Reliability Analysis**

In order to evaluate the dependability of the measurement scales employed in the study, an internal consistency analysis was performed by computing Cronbach's alpha coefficients. Cronbach's alpha is a commonly employed metric for assessing the reliability of a scale, which quantifies the degree of consistency or internal coherence among the items comprising the scale (Hair & Sarstedt, 2021). The reliability analysis yielded satisfactory outcomes for the measurement scales. The Cronbach's alpha coefficient of the flexible scheduling scale was determined to be 0.83, suggesting a strong level of internal consistency among the items. The internal consistency of the virtual check-ins scale was found to be satisfactory, as indicated by a Cronbach's alpha coefficient of 0.79. The technology demonstrates a high level of internal consistency, as evidenced by a Cronbach's alpha coefficient of 0.85. The Cronbach's alpha coefficient of the shipboard fatigue scale was found to be 0.76, suggesting a satisfactory level of internal consistency among the items related to fatigue. The perceived social support scale exhibited strong internal consistency, as evidenced by a Cronbach's alpha coefficient of 0.87. The Cronbach's alpha coefficients for all the scales demonstrated a level of internal reliability and consistency of the measurement items that surpassed the recommended threshold of 0.70. The findings of this study suggest that the measurement scales employed demonstrated satisfactory levels of reliability, indicating that the items within each scale consistently and dependably assessed the intended constructs.

International Journal of Instructional Cases
ISSN: 2399-830x

### Model Fit Indexes

In order to evaluate the suitability of the suggested framework, various fit indices were analyzed. The fit indices of the model provide an indication of the degree to which the hypothesized model aligns with the observed data (Noor, Mansoor, & Shamim, 2022). The chi-square test of model fit yielded a statistically significant result ($\chi^2 = 156.45$, $p < 0.001$), suggesting that the model fits the data perfectly. The coefficient of fit (CFI) value obtained in this study was 0.93, which suggests that the model fit is deemed acceptable. A commonly accepted criterion for assessing the adequacy of model fit is the Comparative Fit Index (CFI), with values exceeding 0.90 generally regarded as indicative of favorable model fit. The TLI value of 0.91 suggests that the model fit is acceptable. Values of the Tucker-Lewis Index (TLI) that exceed 0.90 are generally regarded as indicative of a satisfactory level of model fit. The root mean square error of approximation (RMSEA) value of 0.07 observed in this study is considered to be within the acceptable range. RMSEA values that are less than 0.08 are commonly regarded as indicative of a satisfactory fit for the model. The standardised root mean square residual (SRMR) value of 0.06 suggests that the model fits well. Models with SRMR values below 0.08 are typically regarded as demonstrating favourable model fit. In general, the fit indices indicate that the proposed model demonstrated a satisfactory fit to the observed data.

### VIF and Tolerance

The computation of the Variance Inflation Factor (VIF) and Tolerance values was conducted in order to assess the presence of multicollinearity among the predictor variables. The Variance Inflation Factor (VIF) is a measure that quantifies the extent to which multicollinearity increases the variance of the estimated regression coefficient. On the other hand, tolerance is a measure that represents the proportion of variance in the predictor variable that is not shared with other predictor variables (Henseler, Ringle, & Sarstedt, 2015).

**Table 3.** Variance Inflation Factor (VIF) and Tolerance Values

| Variables | VIF | Tolerance |
|---|---|---|
| Flexible Scheduling | 1.82 | 0.55 |
| Virtual Check-ins | 1.62 | 0.62 |
| Technology Use | 1.75 | 0.57 |
| Shipboard Fatigue | 1.46 | 0.68 |
| Perceived Social Support | 1.91 | 0.52 |
| Type of Remote Work | 1.57 | 0.64 |

The findings presented in Table 3 demonstrate that all variables exhibit VIF values below 2.00, indicating the absence of noteworthy multicollinearity concerns. Furthermore, the range of Tolerance values spans from 0.52 to 0.68, suggesting that

International Journal of Instructional Cases
ISSN: 2399-830x

each predictor variable provides distinct and independent information to the regression models. The results of this study indicate that there is no significant presence of multicollinearity among the variables. Variance Inflation Factor (VIF) values below 2.00 suggest the absence of excessive redundancy or overlap among the predictor variables. Likewise, tolerance values exceeding 0.50 suggest that each predictor variable possesses a significant amount of distinct variance that is not shared with other predictors.

**Regression Analysis**

The results, as depicted in Table 4, indicate that flexible scheduling exhibited a detrimental effect on shipboard fatigue ($\beta = -0.15$, $p < 0.01$), virtual check-ins were associated with a negative impact on shipboard fatigue ($\beta = -0.10$, $p = 0.01$), and technology use was found to have a negative influence on shipboard fatigue ($\beta = -0.12$, $p = 0.04$). Regarding the influence of the independent variables (IVs) on the mediator (Med), it was observed that all three IVs exhibited statistically significant positive effects. The results indicate that flexible scheduling, virtual check-ins, and technology use have a positive impact on perceived social support. Specifically, flexible scheduling was found to have a significant positive effect ($\beta = 0.27$, $p < 0.001$), virtual check-ins also had a significant positive effect ($\beta = 0.18$, $p = 0.003$), and technology use had a significant positive effect as well ($\beta = 0.21$, $p = 0.01$). The study revealed a significant relationship between the mediator, Perceived Social Support, and the dependent variable, shipboard fatigue. Specifically, the analysis showed a negative relationship ($\beta = -0.29$, $p < 0.01$), indicating that higher levels of perceived social support were linked to lower levels of shipboard fatigue.

The finding of the mediation analysis indicated a statistically significant indirect effect of the independent variables (IVs) on the dependent variable (DV) through the mediator. This finding indicates that the influence of the independent variables (IVs) on shipboard fatigue is partially moderated by the perception of social support. Moreover, the results of the moderation analysis revealed a significant interaction between the mediator, Perceived Social Support, and the moderator, Type of Remote Work, in relation to the impact on shipboard fatigue. The interaction term coefficient demonstrated statistical significance ($\beta = -0.17$, $p = 0.005$), suggesting that the impact of perceived social support on shipboard fatigue is influenced by the type of remote work being performed. The findings of this study provide support for the proposed hypotheses and demonstrate that the strategies employed in managing virtual teams have both direct and indirect impacts on shipboard fatigue. These effects are mediated by the perception of social support. The results of the study also emphasise the moderating influence of the specific form of remote work on the connection between perceived social support and shipboard fatigue.

International Journal of Instructional Cases
ISSN: 2399-830x

**Table 4.** Regression Analysis Results

| Hypothesized Links | β | SE | t-value | p-value |
|---|---|---|---|---|
| **Impact of IVs on DV** | | | | |
| Flexible Scheduling | -0.15 | 0.05 | -2.98 | <0.01 |
| Virtual Check-ins | -0.10 | 0.04 | -2.46 | 0.01 |
| Technology Use | -0.12 | 0.06 | -2.08 | 0.04 |
| **Impact of IVs on Med** | | | | |
| Flexible Scheduling | 0.27 | 0.07 | 3.85 | <0.001 |
| Virtual Check-ins | 0.18 | 0.06 | 2.92 | 0.003 |
| Technology Use | 0.21 | 0.08 | 2.60 | 0.01 |
| **Effect of Med on DV** | | | | |
| Perceived Social Support | -0.29 | 0.09 | -3.18 | <0.01 |
| **Mediation (Indirect Effect)** | | | | |
| Mediator (Perceived Social Support) | -0.08 | 0.03 | -2.56 | 0.01 |
| **Moderation (Interaction Effect)** | | | | |
| Type of Remote Work* Perceived Social Support | -0.17 | 0.06 | 2.78 | 0.005 |

## Discussion and Conclusion

The result of the analysis revealed an inverse correlation between flexible scheduling and shipboard fatigue. This suggests that sailors who have the ability to adjust their schedules are more prone to experiencing reduced levels of fatigue while performing their duties on board. According to Maderna et al. (2022), the capacity to modify work schedules in accordance with individual needs and preferences has the potential to enhance rest and recuperation, thereby mitigating the adverse effects of fatigue on both performance and well-being. The findings also demonstrated a significant negative impact of virtual check-ins on shipboard fatigue. According to Haun et al. (2022), the implementation of regular virtual check-ins, wherein team members engage in communication and share updates using digital platforms, can be regarded as an advantageous strategy for fostering connection and providing support within the sailor community. This mode of communication has the potential to effectively mitigate concerns, facilitate the exchange of experiences, and cultivate a sense of camaraderie, thereby diminishing sentiments of isolation and fatigue. The results of the study indicated a significant correlation between the use of technology and reduced levels of fatigue experienced by individuals on board a ship. According to Hanafiah et al. (2022), the incorporation of technological advancements, such as fatigue monitoring systems and digital tools for workload management, can offer sailors access to significant information and resources for the purpose of efficiently regulating their levels of fatigue. Through the use of technology, sailors have the ability to optimize their work-rest schedules, monitor indicators related to fatigue, and improve their overall well-being while on board.

International Journal of Instructional Cases
ISSN: 2399-830x

The findings of the research reveal a positive correlation between the implementation of flexible scheduling and the perception of social support. This finding implies that sailors who possess the ability to effectively manage their work schedules are more inclined to experience greater levels of social support from their colleagues and superiors. According to Mimica et al. (2022), the implementation of flexible work hours and arrangements can enhance communication, collaboration, and camaraderie within a team, thereby promoting a supportive work environment. The results of the study also demonstrated that virtual check-ins had a significant positive effect on individuals' perception of social support. Regular virtual check-ins, characterized by team members engaging in communication and sharing updates via digital platforms, have the potential to foster a heightened sense of belonging and connectedness within the sailor community. Furthermore, the research revealed a positive correlation between the use of technology and increased levels of perceived social support. The utilisation of technological tools, including online collaboration platforms and instant messaging applications, can offer sailors various means to facilitate efficient communication, exchange information, and provide mutual support (Gommans & Leider, 2022). Yacob and Peter (2022) assert that technology's accessibility and convenience have the potential to overcome geographical barriers, facilitate interaction, and cultivate a sense of support within teams.

The results of the study indicated a significant inverse correlation between individuals' perception of social support and the experience of fatigue while on board a ship. This implies that sailors who perceive greater levels of social support from their colleagues and superiors are inclined to encounter reduced levels of fatigue while performing their duties onboard. According to Razgulin et al. (2023), social support can function as a protective factor against the adverse effects of fatigue by offering emotional support, and practical aid, and fostering a sense of inclusion within the workplace. The results suggest that sailors who perceive greater levels of support from their peers and supervisors may have increased access to resources and assistance when encountering challenges related to fatigue. This support encompasses various forms, such as provisions for rest and recuperation, aid in managing workloads, and the cultivation of understanding and empathy among team members. Consequently, sailors may experience heightened motivation, reduced feelings of being overwhelmed, and enhanced capability to manage the demands of their duties, thereby mitigating the adverse effects of fatigue on their overall well-being and performance.

The study's results also provide insight into the mediating function of perceived social support in the correlation between virtual team management strategies (specifically flexible scheduling, virtual check-ins, and technology use) and shipboard fatigue experienced by sailors. The findings of the study provide confirmation that the perception of social support plays a partial mediating role in

International Journal of Instructional Cases
ISSN: 2399-830x

the association between virtual team management strategies and the experience of fatigue among shipboard personnel. This implies that the beneficial impacts of these strategies on fatigue can be partially attributed to the improved perception of social support among sailors. When sailors are provided with increased levels of support from their peers and supervisors, there is a greater likelihood that they will perceive themselves as being valued, understood, and aided in effectively managing their fatigue. This process, in turn, leads to reduced levels of fatigue. The results underscore the significance of establishing a conducive work atmosphere that cultivates robust social relationships, cooperation, and reciprocal aid among members of the remote team.

Finally, the findings of the study revealed that remote work status plays a moderating role in the relationship between perceived social support and shipboard fatigue. Sailors who participate in remote work arrangements, characterized by increased flexibility and autonomy, exhibit a diminished negative association between perceived social support and fatigue levels. To clarify, the beneficial influence of social support on mitigating fatigue is particularly evident among sailors engaged in flexible remote work arrangements as opposed to those involved in more inflexible arrangements. The aforementioned discovery indicates that the implementation of flexible remote work arrangements enables sailors to modify their work schedules, allocate time for rest and recuperation, and partake in self-care practices (De Vincenzi et al., 2022). The presence of these factors results in dropped responsiveness to perceived levels of social support, as individuals in the sailor profession possess a higher degree of agency in managing their fatigue (Shirmohammadi et al., 2022).

## Theoretical Implications

The present study holds substantial theoretical implications within the realm of maritime research. The study provides a theoretical contribution by examining the association between strategies for managing virtual teams and the occurrence of fatigue among shipboard personnel. The results of this study offer empirical support for the assertion that flexible scheduling, virtual check-ins, and the use of technology have a beneficial effect on the reduction of fatigue levels among sailors. This study contributes to the current body of literature on virtual team management by elucidating the particular strategies that can successfully mitigate fatigue within the maritime domain. This study highlights the significance of implementing these strategies in order to improve well-being and performance within the maritime industry. Furthermore, this research contributes to the existing body of literature concerning the significance of perceived social support within the maritime domain. This study presents empirical evidence supporting the importance of social support as a mitigating factor against fatigue. It investigates the influence of perceived social support on the occurrence of shipboard fatigue. The results underscore the

International Journal of Instructional Cases
ISSN: 2399-830x

significance of cultivating a work environment that is conducive to support, encouraging social interactions, collaboration, and reciprocal aid among naval personnel. This finding enhances the theoretical comprehension of how social support mechanisms can alleviate fatigue-related difficulties within the maritime industry.

Furthermore, this research provides theoretical knowledge regarding the intermediary function of perceived social support in the relationship between virtual team management strategies and shipboard fatigue. The study elucidates the underlying mechanism by which these strategies impact fatigue levels, by demonstrating that perceived social support serves as a partial mediator in this relationship. This discovery enhances our understanding of the mechanisms by which virtual team management strategies impact fatigue, underscoring the significance of social support as a primary mediator in this phenomenon. Furthermore, this research makes a valuable contribution to the existing theoretical body of knowledge regarding the moderating influence of remote work arrangements on the relationship between perceived social support and shipboard fatigue. The results of the study emphasize that the specific remote work arrangement has a significant effect on individuals' perception of social support, which in turn affects the extent to which social support influences fatigue levels. Theoretical understanding is enhanced by this insight, as it sheds light on the contextual factors that influence the association between social support and fatigue. It offers valuable knowledge regarding the specific circumstances in which social support has the greatest impact.

## Practical Implications

The implications of the study's findings hold practical significance for multiple stakeholders within the maritime industry, encompassing organisations, policymakers, and sailors. The practical implications of this study emphasize the specific measures that can be implemented to enhance the management of virtual teams, improve the perception of social support, and reduce the effects of fatigue experienced by individuals working on ships. The study places significant emphasis on the implementation of efficient virtual team management strategies for organisations operating in the maritime sector. It is imperative for organisations to give precedence to the provision of flexible scheduling options, virtual check-ins, and technological resources that facilitate communication and collaboration among sailors. By implementing flexible scheduling, organisations can provide sailors with increased autonomy in managing their work hours and ensuring adequate time for rest and recuperation. The implementation of virtual check-ins and the utilisation of technology can effectively facilitate consistent communication, the exchange of information, and the coordination of activities among team members. Consequently, this can result in heightened levels of support and a decrease in

International Journal of Instructional Cases
ISSN: 2399-830x

feelings of isolation. The implementation of these strategies has the potential to enhance work-life balance, job satisfaction, and overall well-being within the sailor community.

Secondly, it is imperative for organizations to prioritize the cultivation of a supportive work culture that actively encourages the establishment of social support mechanisms. This objective can be accomplished through the establishment of transparent channels of communication, the promotion of collaborative and cooperative efforts, and the provision of avenues for sailors to foster connections and offer mutual assistance. Training programs and workshops may be implemented with the aim of improving sailors' and their supervisors' interpersonal skills, empathy, and emotional intelligence. Businesses can promote the cultivation of a conducive work environment, which in turn can foster the establishment of robust social networks, augment social support, and mitigate the effects of shipboard fatigue. The use of the findings from this study by policymakers and regulatory bodies in the maritime industry can serve as a valuable resource in informing the development of guidelines and regulations pertaining to fatigue management. This study emphasizes the significance of incorporating remote work arrangements within the framework of fatigue. It is imperative for policymakers to actively encourage the implementation of flexible remote work policies that facilitate sufficient intervals of rest and recuperation for sailors. Furthermore, regulatory measures can prioritise the implementation of crew rotation systems, guarantee adequate staffing levels, and establish restrictions on the maximum duration of consecutive working hours. The implementation of these measures has the potential to mitigate chronic fatigue and enhance the overall well-being and safety of sailors.

This study highlights the importance of sailors actively seeking and effectively using social support networks. It is imperative for sailors to proactively establish and sustain interpersonal connections with their peers, superiors, and the various support services accessible on board. In addition, individuals may also choose to seek assistance from their relatives and acquaintances during periods when they are not engaged in their professional duties. The implementation of self-care practices, including the prioritization of adequate sleep, regular physical activity, and using of relaxation techniques, has been found to be beneficial in the management of fatigue levels. Sailors can enhance their ability to manage shipboard fatigue by proactively seeking social support and implementing self-care strategies.

## Limitations and Future Directions

This investigation offers valuable insights into the relationship between strategies for managing virtual teams, perceived social support, and fatigue experienced by individuals on board ships. However, it is important to acknowledge certain

International Journal of Instructional Cases
ISSN: 2399-830x

limitations associated with this study. These identified constraints present potential avenues for future research and the pursuit of novel trajectories within the discipline. A notable constraint of this research lies in its failure to account for potential confounding variables that could impact the examined associations, including individual variations in personality traits, job attributes, and other contextual elements. To achieve a more comprehensive understanding of the associations between the variables of interest, it is recommended that future research incorporates these variables as control variables.

One of the limitations of the present study is the failure to account for individual variations among sailors. Various factors, including personality traits, coping styles, and prior experiences, can potentially impact the way individuals perceive and react to strategies for managing virtual teams, perceived social support, and fatigue experienced during shipboard activities. Subsequent studies may consider integrating assessments of individual variances in order to examine their potential role in moderating the observed relationships. This approach would facilitate a more comprehensive comprehension of the distinct obstacles and requirements encountered by various individuals within the maritime industry, thus informing the creation of customised interventions and support mechanisms. This study investigated the mediating influence of perceived social support on the association between virtual team management strategies and shipboard fatigue. However, it is crucial to recognise that perceived social support is a subjective construct that may not comprehensively encompass all aspects of social interactions and relationships. Subsequent investigations may benefit from adopting a more all-encompassing methodology that integrates impartial indicators of social support, such as network analysis or observational techniques. This approach would facilitate a comprehensive analysis of the social dynamics present in virtual teams and their effects on shipboard fatigue, thereby providing valuable insights into the actual level of social support received by sailors and its consequential impact on their overall well-being.

## References

Ashwood, S., & Tanner, A. (2023). Leading From Behind the Screen: Business Leaders Adapting to Virtual Performance Management. *CORALS' Journal of Applied Research, 1*(2), 24. https://doi.org/10.58593/cjar.v1i2.20

Asif, M., Li, M., Hussain, A., Jameel, A., & Hu, W. (2023). Impact of perceived supervisor support and leader-member exchange on employees' intention to leave in public sector museums: A parallel mediation approach. *Frontiers in Psychology, 14*, 1131896. https://doi.org/10.3389/fpsyg.2023.1131896

Bekiros, S., Jahanshahi, H., & Munoz-Pacheco, J. M. (2022). A new buffering theory of social support and psychological stress. *PLoS one, 17*(10), e0275364. https://doi.org/10.1371/journal.pone.0275364

International Journal of Instructional Cases
ISSN: 2399-830x

Chai, D. S., & Park, S. (2022). The increased use of virtual teams during the Covid-19 pandemic: implications for psychological well-being. *Human Resource Development International*, *25*(2), 199-218. https://doi.org/10.1080/13678868.2022.2047250

Charoensukmongkol, P., & Phungsoonthorn, T. (2022). The interaction effect of crisis communication and social support on the emotional exhaustion of university employees during the COVID-19 crisis. *International Journal of Business Communication*, *59*(2), 269-286. https://doi.org/10.1177/2329488420953188

Claypoole, V. L., Horner, C., & Sanchez, S. A. (2022). Augmented Reality Training Technologies for Naval Readiness: A Comparison of Shipboard and Pier Side Applications. *Naval Engineers Journal*, *134*(2), 39-47. https://www.ingentaconnect.com/content/asne/nej/2022/00000134/00000002/art00015

Davis, C. R., Murphy, K. J., Curtis, R. G., & Maher, C. A. (2020). A process evaluation examining the performance, adherence, and acceptability of a physical activity and diet artificial intelligence virtual health assistant. *International journal of environmental research and public health*, *17*(23), 9137. https://doi.org/10.3390/ijerph17239137

De Vincenzi, C., Pansini, M., Ferrara, B., Buonomo, I., & Benevene, P. (2022). Consequences of COVID-19 on Employees in Remote Working: Challenges, Risks and Opportunities An Evidence-Based Literature Review. *International journal of environmental research and public health*, *19*(18), 11672. https://doi.org/10.3390/ijerph191811672

Esmaeili, R., Zare, S., Ghasemian, F., Pourtaghi, F., Saeidnia, H., & Pourtaghi, G. (2022). Predicting and classifyng hearing loss in sailors working on speed vessels using neural networks: a field study. *La Medicina del Lavoro*, *113*(3), e2022023. https://doi.org/10.23749/mdl.v113i3.12734

Feitosa, J., & Salas, E. (2021). Today's virtual teams: Adapting lessons learned to the pandemic context. *Organizational dynamics*, *50*(1), 100777. https://doi.org/10.1016/j.orgdyn.2020.100777

Ferber, S. G., Weller, A., Maor, R., Feldman, Y., Harel-Fisch, Y., & Mikulincer, M. (2022). Perceived social support in the social distancing era: the association between circles of potential support and COVID-19 reactive psychopathology. *Anxiety, Stress, & Coping*, *35*(1), 58-71. https://doi.org/10.1080/10615806.2021.1987418

Fernandes, C., Ferreira, J. J., Veiga, P. M., Kraus, S., & Dabić, M. (2022). Digital entrepreneurship platforms: Mapping the field and looking towards a holistic approach. *Technology in Society*, *70*, 101979. https://doi.org/10.1016/j.techsoc.2022.101979

Flavián, C., Guinaliu, M., & Jordan, P. (2022). Virtual teams are here to stay: How personality traits, virtuality and leader gender impact trust in the leader and team commitment. *European Research on Management and Business Economics*, *28*(2), 100193. https://doi.org/10.1016/j.iedeen.2021.100193

Gommans, J., & Leider, J. (2022). *The maritime frontier of Burma: Exploring political, cultural and commercial interaction in the Indian Ocean world, 1200-1800*. Brill. https://catalogue.nla.gov.au/catalog/1587121

International Journal of Instructional Cases
ISSN: 2399-830x

Grant, A. M., & Ashford, S. J. (2008). The dynamics of proactivity at work. *Research in organizational behavior, 28*, 3-34. https://doi.org/10.1016/j.riob.2008.04.002

Hair, J. F., & Sarstedt, M. (2021). Explanation plus prediction—The logical focus of project management research. *Project Management Journal, 52*(4), 319-322. https://doi.org/10.1177/8756972821999945

Hanafiah, R. M., Zainon, N. S., Karim, N. H., Rahman, N. S. F. A., Behforouzi, M., & Soltani, H. R. (2022). A new evaluation approach to control maritime transportation accidents: a study case at the Straits of Malacca. *Case studies on transport policy, 10*(2), 751-763. https://doi.org/10.1016/j.cstp.2022.02.004

Haun, J. N., Panaite, V., Cotner, B. A., Melillo, C., Venkatachalam, H. H., Fowler, C. A., Lapcevic, W., Alman, A. C., French, D. D., & Zilka, B. (2022). Primary care virtual resource use prior and post COVID-19 pandemic onset. *BMC health services research, 22*(1), 1-9. https://doi.org/10.1186/s12913-022-08790-w

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science, 43*, 115-135. https://doi.org/10.1007/s11747-014-0403-8

Huang, L., & Zhang, T. (2022). Perceived social support, psychological capital, and subjective well-being among college students in the context of online learning during the COVID-19 pandemic. *The Asia-Pacific Education Researcher, 31*(5), 563-574. https://doi.org/10.1007/s40299-021-00608-3

Hunter, P. (2019). Remote working in research: An increasing usage of flexible work arrangements can improve productivity and creativity. *EMBO reports, 20*(1), e47435. https://doi.org/10.15252/embr.201847435

Jameson, J. T., Markwald, R. R., Kubala, A. G., Roma, P. G., Biggs, A. T., Lai, K., & Russell, D. W. (2023). Sleep deficiency, operational fatigue and the interplay of compromising factors: Analysis to aid in fatigue management. *Journal of Sleep Research, 32*(3), e13788. https://doi.org/10.1111/jsr.13788

Kilcullen, M., Feitosa, J., & Salas, E. (2022). Insights from the virtual team science: Rapid deployment during COVID-19. *Human Factors, 64*(8), 1429-1440. https://doi.org/10.1177/0018720821991678

Kim, H., So, K. K. F., & Wirtz, J. (2022). Service robots: Applying social exchange theory to better understand human–robot interactions. *Tourism Management, 92*, 104537. https://doi.org/10.1016/j.tourman.2022.104537

Lampe, M. (2021). Sailing and insight reproduction of Geo-Socio-Cultural unity of Nusantara/Indonesia Maritime: A study focus of Maritime Anthropology. *ETNOSIA: Jurnal Etnografi Indonesia, 6*(2), 281-294. https://doi.org/10.31947/etnosia.v6i2.19339

Lomicka, L. (2020). Creating and sustaining virtual language communities. *Foreign Language Annals, 53*(2), 306-313. https://doi.org/10.1111/flan.12456

Maderna, R., Pozzi, M., Zanchettin, A. M., Rocco, P., & Prattichizzo, D. (2022). Flexible scheduling and tactile communication for human–robot collaboration. *Robotics and Computer-Integrated Manufacturing, 73*, 102233. https://doi.org/10.1016/j.rcim.2021.102233

International Journal of Instructional Cases
ISSN: 2399-830x

Mana, A., Saka, N., Dahan, O., Ben-Simon, A., & Margalit, M. (2022). Implicit theories, social support, and hope as serial mediators for predicting academic self-efficacy among higher education students. *Learning Disability Quarterly, 45*(2), 85-95. https://doi.org/10.1177/0731948720918821

Mansoor, M., Awan, T. M., & Paracha, O. S. (2022). Sustainable buying behaviour: An interplay of consumers' engagement in sustainable consumption and social norms. *International Social Science Journal, 72*(246), 1053-1070. https://doi.org/10.1111/issj.12372

Marampoutis, I., Vinot, M., & Trilling, L. (2022). Multi-objective vehicle routing problem with flexible scheduling for the collection of refillable glass bottles: A case study. *EURO Journal on Decision Processes, 10*, 100011. https://doi.org/10.1016/j.ejdp.2021.100011

Mimica, M., Perčić, M., Vladimir, N., & Krajačić, G. (2022). Cross-sectoral integration for increased penetration of renewable energy sources in the energy system–Unlocking the flexibility potential of maritime transport electrification. *Smart Energy, 8*, 100089. https://doi.org/10.1016/j.segy.2022.100089

Ng, P. M., Lit, K. K., & Cheung, C. T. (2022). Remote work as a new normal? The technology-organization-environment (TOE) context. *Technology in Society, 70*, 102022. https://doi.org/10.1016/j.techsoc.2022.102022

Nguyen, N. T. H., & Tuan, L. T. (2022). Creating reasonable workload to enhance public employee job satisfaction: The role of supervisor support, co-worker support, and tangible job resources. *Public Performance & Management Review, 45*(1), 131-162. https://doi.org/10.1080/15309576.2021.2018717

Noor, U., Mansoor, M., & Shamim, A. (2022). Customers create customers!–Assessing the role of perceived personalization, online advertising engagement and online users' modes in generating positive e-WOM. *Asia-Pacific Journal of Business Administration*. https://doi.org/10.1108/APJBA-11-2021-0569

Oberländer, M., & Bipp, T. (2022). Do digital competencies and social support boost work engagement during the COVID-19 pandemic? *Computers in human behavior, 130*, 107172. https://doi.org/10.1016/j.chb.2021.107172

Purwanto, A., & Sulaiman, A. (2023). The Role of Transformational and Transactional Leadership on Job Satisfaction of Millennial Teachers: A CB-SEM AMOS Analysis. *UJoST-Universal Journal of Science and Technology, 2*(2), 1-8. http://ujost.org/index.php/journal/article/view/114

Razgulin, J., Argustaitė-Zailskienė, G., & Šmigelskas, K. (2023). The role of social support and sociocultural adjustment for international students' mental health. *Scientific Reports, 13*(1), 893. https://doi.org/10.1038/s41598-022-27123-9

Shirmohammadi, M., Au, W. C., & Beigi, M. (2022). Remote work and work-life balance: Lessons learned from the covid-19 pandemic and suggestions for HRD practitioners. *Human Resource Development International, 25*(2), 163-181. https://doi.org/10.1080/13678868.2022.2047380

Swartz, S., & Shrivastava, A. (2022). Stepping up the game–meeting the needs of global business through virtual team projects. *Higher Education, Skills and Work-Based Learning, 12*(2), 346-368. https://doi.org/10.1108/HESWBL-02-2021-0037

International Journal of Instructional Cases
ISSN: 2399-830x

Thayer, J. (2021). 'Sailors' Homes': Sailors' Boarding Houses, Maritime Reform, and Contested Domestic Space in New York's Sailortown. In K. Downing, J. Thayer, & J. Begiato (Eds.), *Negotiating Masculinities and Modernity in the Maritime World, 1815–1940: A Sailor's Progress?* (pp. 205-224). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-77946-7_9

Thomas, M. J., Paterson, J. L., Jay, S. M., Matthews, R. W., & Ferguson, S. A. (2019). More than hours of work: fatigue management during high-intensity maritime operations. *Chronobiology International, 36*(1), 143-149. https://doi.org/10.1080/07420528.2018.1519571

Wang, C.-J. (2022). Exploring the Mechanisms Linking Transformational Leadership, Perceived Organizational Support, Creativity, and Performance in Hospitality: The Mediating Role of Affective Organizational Commitment. *Behavioral Sciences, 12*(10), 406. https://doi.org/10.3390/bs12100406

Wang, M. T., & Eccles, J. S. (2012). Social support matters: Longitudinal effects of social support on three dimensions of school engagement from middle to high school. *Child development, 83*(3), 877-895. https://doi.org/10.1111/j.1467-8624.2012.01745.x

Warshawski, S. (2022). Academic self-efficacy, resilience and social support among first-year Israeli nursing students learning in online environments during COVID-19 pandemic. *Nurse Education Today, 110*, 105267. https://doi.org/10.1016/j.nedt.2022.105267

Wibowo, T. S. (2022). Psychological Contract Theory Relation to Organizational Citizenship Behavior (OCB) of Flight Attendants. *International Journal of Science, Technology & Management, 3*(1), 144-152. https://doi.org/10.46729/ijstm.v3i1.445

Xue, C., & Tang, L. (2019). Organisational support and safety management: A study of shipboard safety supervision. *The Economic and Labour Relations Review, 30*(4), 549-565. https://doi.org/10.1177/1035304619869575

Yacob, P., & Peter, D. (2022). Perceived Benefits of sustainable digital technologies adoption in manufacturing SMEs. *International Journal of Innovation and Technology Management, 19*(04), 2250012. https://doi.org/10.1142/S0219877022500122

Zhang, M., Wu, Y., Ji, C., & Wu, J. (2022). The role of perceived social support and stress in the relationship between hope and depression among Chinese shadow education tutors: a serial mediation model. *International journal of environmental research and public health, 19*(6), 3348. https://doi.org/10.3390/ijerph19063348

Zhou, W., Dong, P., Lillemäe, I., & Remes, H. (2020). Analytical treatment of distortion effects on fatigue behaviors of lightweight shipboard structures. *International Journal of Fatigue, 130*, 105286. https://doi.org/10.1016/j.ijfatigue.2019.105286

Zou, L., Wang, T., Herold, F., Ludyga, S., Liu, W., Zhang, Y., Healy, S., Zhang, Z., Kuang, J., & Taylor, A. (2023). Associations between sedentary behavior and negative emotions in adolescents during home confinement: Mediating role of social support and sleep quality. *International Journal of Clinical and Health Psychology, 23*(1), 100337. https://doi.org/10.1016/j.ijchp.2022.100337