OCCUPATIONAL STRESS AMONG OFFSHORE OIL & GAS EMPLOYEES IN MALAYSIA

By

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Project Paper Submitted in Partial Fullfillment of the Requirements

For the Degree of Master of Business Administration (MBA)

Universiti Tun Abdul Razak

May 2022

DECLARATION

I hereby declare that the case study is based on my original work except for quotations and citations that have been duly acknowleged. I also declare it has not been previously or concurrently submitted for any other degree at Universiti Tun Abdul Razak (UNIRAZAK) or other institution.

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Date : 18th June 2022

ABSTRACT

Abstract of the Research paper submitted to the Senate of Universiti Tun Abdul Razak in partial fulfillment of the requirements for the Degree of MBA.

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MAY 2022

Working offshore on oil platforms is seen as a challenging occupational role to many especially with long rotational schedule ranging from fourteen to twenty-eight days away from family. Having to live and work at the same site, shift-work schedule with long working hours, high risks and remote work environment are some common features of an offshore job. Maintaining a healthy work force is critical to oil and gas companies as skilled and experienced employees are highly demanded in the industry. This study aims to examine the occupational stress factors among offshore oil and gas employees in Malaysia including the recent COVID-19 pandemic's impact and further analyses the relationship between the selected dependent, independent and mediating variables. The data will be collected using a self-administered questionnaire to a targeted sample number of employees due to the large population of Malaysian offshore oil and gas workers using the approach of simple random sampling. The data will be analyzed using IBM Statistical Package for Social Science Version 28.0.1. [SPSS 28.0.1] to address the factors by means of reliability analysis, frequency distribution analysis, descriptive and inferential statistical analysis, correlation and multiple regression analysis to address the research objectives. The implications of the findings will not be discussed in this paper. ***Keywords: occupational stress, stressors, oil & gas***

ACKNOWLEDGEMENT

All glory and praises to God in allowing me to complete this project paper.

I would like to take this opportunity to express my deepest gratitude to my supervisor Asst. Prof. Dr. Farhana Tahmida Newaz who have dedicated her valuable time and guidance throughout my Research Paper. Her continuous support and constructive advice are sincerely valued as it had assisted in enhancing my project outcome, without whom I would not have finished the program

My earnest and sincere gratitude to my beloved wife who had been my pillar of strength during the entire journey of my MBA and for the completion of my project paper. If it is not for her, I would not have made it thus far and achieve the title Masters to my name. Her encouragement and understanding have been crucial for my timely completion of this study.

I would also like to thank all the faculty members of UR, fellow classmates and the staffs of SKC who have dedicated their valuable time and undivided effort in assisting me to fulfill the MBA program successfully.

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CHAPTER 1: INTRODUCTION

1.1 BACKGROUND OF STUDY

"Strictus" is the precise expression for stress that was derived from Latin which means stiffly strung (1). Stress is a pervasive and prevalent phenomenon in the entire human lifespan throughout time. Human undergo stress because of the complexity of social, ecological, personal, multiple and simultaneous interactions with other human and its surrounding issues (6). Pleasing events as well as events that create crisis, both cause stress and that is a normal part of our daily life. Stress is not always bad and can be good at times where it improves biophysical health and facilitate performance. It motivates us and help us to be more productive and to be more disciplined as well as helps us to adapt and react to surrounding environment (8). However, if the limit is exponential, then that same stress can be harmful and can lead to injuries both mentally and physically. Stress relates to our body's physical and emotional reaction that confuse, irritate, terrifies, threaten, endanger or stimulate us and places demands on our body.

According to Truch (1980), there are three stages that can describe the body's reaction to stress (3);

i. Reaction Stage: the identification and reaction to stress by the body where the body releases hormones to defense against the stressors. This reaction stage is also often called as alarm stage where emotions, physical and mental stress send an alarm signal to the mind and body to fight or flight response with a surge of adrenaline to all parts of the body.
ii. Resistance Stage: As with the persistence of stress and prolonged surge of adrenaline, the body continues to resist the stress with the mind trying to regain balance by

boosting chemicals in the brain like melatonin which counteract and calms the system. However, if the stressors continue to persist, then there will be a toxic cycle that causes the body to move to the third stage.

iii. Exhaustion Stage: The persistency of the stress is too strong where the body and mind fails to make necessary adjustments to resist further and succumbs to the unending stress this completely shutting down the system that leads to mental and/or physical exhaustion and quickly fall victim to infection and illness.

Stress can be experienced either externally with environmental source or could be a perception of an individual internally. Stress is caused by many factors or situations and these provoking influences are called stressors that makes a person feel livid, frustrated, discouraged, anxious, angry and could be harmful at times (2). In layman's term, stress is simply the feeling of pressure in people's own lives. Stress had been one of the most important and significant subjects in mental health research and one of the most complex spaces in psychology and sociology area in the current century and it is considered the main threat of health (7).

In recent times, stress and its effects have gained much attraction in organizations, globally and is well known as occupational stress. Occupational stress is generally defined as the harmful physical and emotional reactions that transpire when work demands exceed the proficiencies, capabilities or resources of the worker (2,4) that is associated with general psychological, physiological and behavioral stress symptoms. In mid-19th century, there was no occupational stress that was recorded or was understood but over the last 50 years, it grew in an alarming state. In the European continent, occupational stress is considered as a risk assessable disease according to Clarke and Cooper, 2000 (3). Occupational stress occurs when job requirements do not match the needs or capabilities of the worker and that can eventually lead to poor health and injury (5). Beehr and Newman (1978) defined occupational stress as a condition that arises from the interface of people and their work which is characterized by

changes within thyself to force and deviate from regular functional mode. Auerbach and Gramling (1998) exquisitely alleged that everyone faces challenges, threats and annoyances in the workplace that threatens an individual's pride, prestige and the position at work and the place in family, society and in self-image. (11).

Apart from affecting physical health and psychological wellbeing of individuals, the productivity and commitments towards the organization is severely affected due to occupational stress. It has a strong influence on performance and activities of members in any organization. Workers and leaders undergo psychological stress and would get trapped in specific psychological state and react in a way that directly reflects the outcome of an organization which is capable of making immense reparations to the wellbeing of the organization and wobble their corporate goals (9). It is a pattern of reaction at workplace that occurs when workers unable to match the demands given to them due to lack of knowledge, skill or ability and challenges their ability to cope.

According to the American Institute of stress (AIS), some of the common stressors at workplace include job security, long working hours, irregular shifts, work environment that is unconducive, being isolated from herd community, unfair treatment, role ambiguity, poor interpersonal relations, unsatisfactory monetary reward and pay scheme, harassment, office politics, work and family conflicts as well as demands to accomplish tasks without sufficient resources. These stressors could cause physiological problems such as headaches, hair loss, eating disorders, loss of sex drive, serious physical illness, increased heartbeat and blood pressure, palpitations and chest discomfort, muscle ache, sleeping problems, dryness of throat and mouth, frequent urinating, diarrhea, indigestion, stomach ulcers, etc. The behavioral and attitude problems include unwary behavior, distraction, personality change, speech problems, aggressiveness, use of tobacco, alcohol and drugs, burnout, nervousness, absenteeism, lack of

concentration and increased errors. On the psychological aspects, symptoms like physical trauma, anxiety, fear, tension, memory problems, depression and dissatisfactions, poor judgement, feeling isolated or sense of loneliness and catastrophic thoughts are displayed (10).

Occupational stress presents in every organization of every known industry. That said, offshore based operations is not to be left behind in fact, offshore oil and gas production is well recognized as a stressful occupation as described by Parkes, Sutherland & Cooper [12,13] and is also defined as the response from employee when dealing work demands and pressure that are not matched to their level of knowledge and abilities that bring strong challenges towards their ability for coping with it at their workplace [13]. Occupational stress can significantly cause an unusual and dysfunctional behavior at work which subsequently contribute to poor physical and mental health [14]. Numerous stressors in the offshore work environment, which include an adverse physical environment, rough seas, the risks of travel by helicopter and ship, exposure to noise and accident hazards, arduous physical activities, a monotonous life within a limited space, isolation from the community and the family, and the special demands and constraints inherent in offshore work, all exert an adverse effect on the health and safety of these workers [15]. With the recent COVID-19 pandemic that caused economical interruption, there had been a new factor that adds to the existing stressors as explained above which are the Movement Control Orders (MCO) from government, quarantine requirement (pre and post travelling offshore) as well as extended length of stay at work to prevent offshore operations disruption. No studies had yet been done that includes pandemic situation as a possible stressor to offshore workers as part of occupational stress and this is the 1st of its kind where the impact of COVID-19 is included as one of the factors on top of other existing and proven stressors to offshore employees.

Based on the Michigan occupational stress model [14,15,16], two studies by Huang and colleagues indicated that United Kingdom offshore oil workers perceived occupational stress from eight sources; relationship at work and at home, site management problems, factors intrinsic to the job, the uncertainty element of the work environment, living in the off-shore environment, safety, interface between job and family and career prospects and reward [17,18,19]. Work-related stress among offshore workers has been shown to be associated with many adverse health outcomes. Cooper and Sutherland (1987) reported a higher prevalence of anxiety among offshore workers, and that perceived stress from the 'relationship at work and home' was a strong predictor of mental health. Similar effects of stress on the mental health of offshore oil workers were also reported by Parkes (1992). Occupational stress has also been incriminated as a risk factor for increased blood pressure disorders of the digestive, respiratory and musculoskeletal systems [20] and other health problems [21].

From above explanation, it is evident that many researches had been studied on occupational stress factors to offshore oil and gas employees and it is effects that can cause catastrophic paraphernalia to the employees and operations. In Malaysia, offshore employees are significant tax payers and oil and gas industry is the backbone for its industrial revolution and a significant source that aids its development. The study of occupational stress in Malaysian waters for offshore oil and gas employees are crucial as to identify the stressors, effects and possible solutions to overcome the issue and it includes specific factors that will be significant to Malaysian offshore oil and gas workers including COVID-19 impact as one of the factors.

1.2 BACKGROUND OF THE INDUSTRY

Considered the biggest sector in the world in the means of energy and dollar value, oil & gas industry is the powerhouse that moves the major global economies. It is one of the largest, most complex, and important global industries and touches everyone's lives with products such as transportation, heating, electricity fuels, asphalt, lubricant, propane and thousands of petrochemical products from carpets to eyeglasses to clothing. The industry impacts national security, elections, geopolitics, and international conflicts and generates an estimated $3.3 trillion in revenue annually, housing millions of workers across the globe (22).

According to Energy Information Administration (EIA), total oil production averaged more than 100.61 million barrels per day (b/d) in 2019, and is expected to grow in near future. The top 5 major oil producing countries are the U.S., Saudi Arabia, Russia, Canada, and China which produces nearly half of the global production of crude oil. The total oil consumption is averaged at 100.3 million barrels per day (b/d) in 2018.

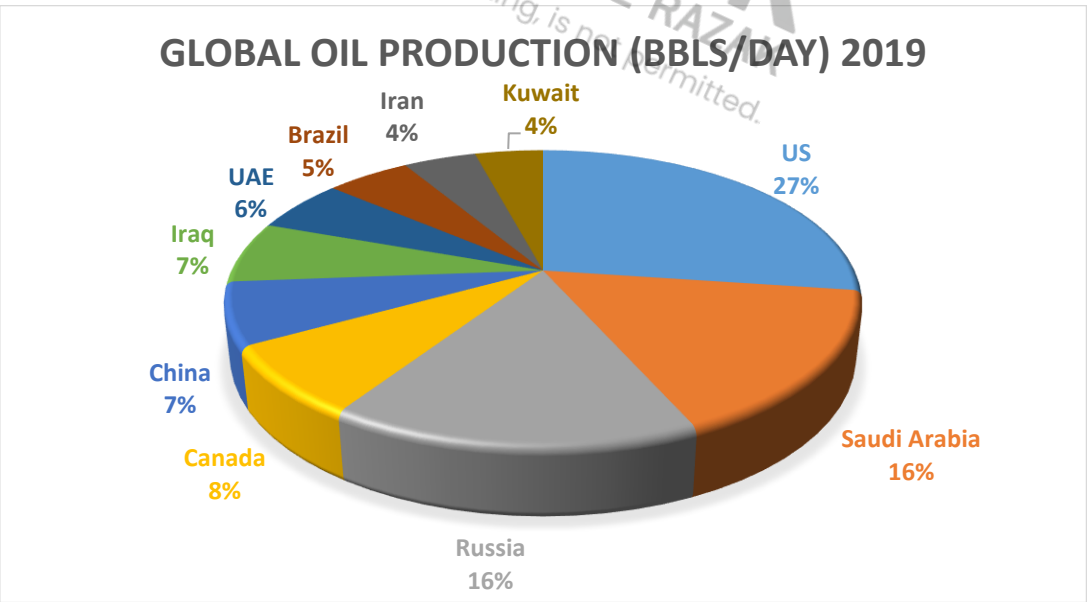

Figure 1.1: Global Oil Production (bpd) in 2019

The global oil and gas business is mainly divided into upstream, midstream and downstream. The upstream division or often known as Exploration & Production involves the search for oil & gas reservoirs either underground or underwater that involves wild cat or exploration drilling or side track drillings in existing reservoirs and wells. Midstream is the sector that embroils the transportation, storage, and processing of crude oil and gas. Downstream refers to the filtering of the crude oil, purifying natural gas and the marketing and commercial supply of these products to consumers and end users in a number of forms including natural gas, diesel oil, petrol, gasoline, lubricants, kerosene, jet fuel, asphalt, heating oil, LPG (liquefied petroleum gas) as well as a number of other types of petrochemicals.

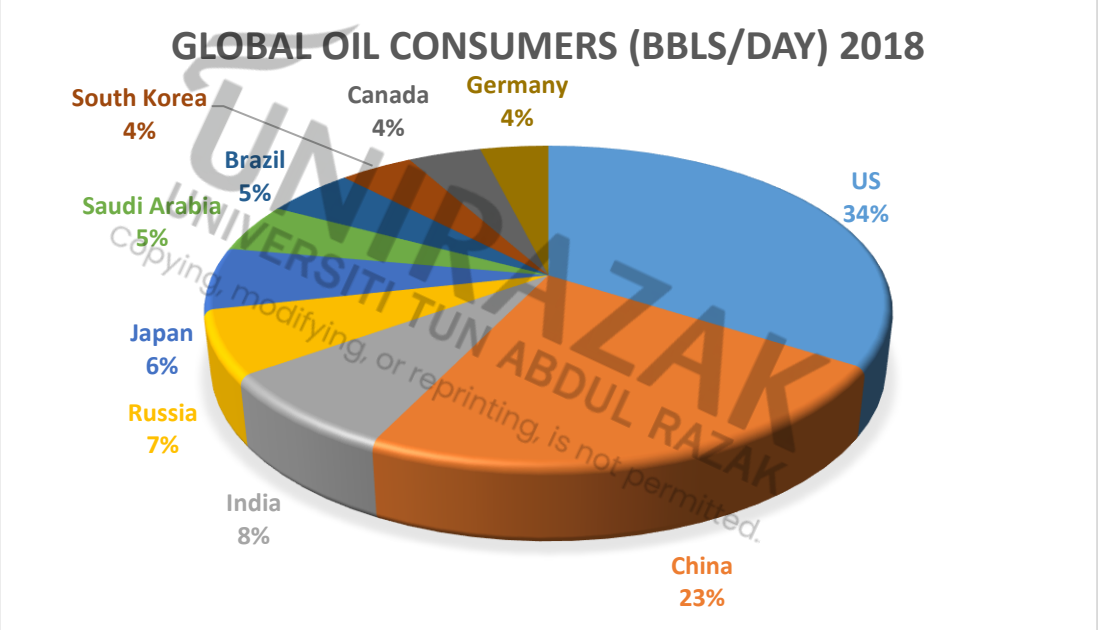

Figure 1.2: Global Oil Consumers (bpd) in 2018

The oil and gas industry operationalizes in thousands of firms of all shapes, sizes and capabilities. The breakdown of different terminology explains the nature of the firms in categories. An Independent Company is a non-integrated company generating nearly all its revenue from either oil and gas production or downstream activities. An Integrated oil company competes in the upstream, midstream, downstream and petrochemicals as well.

National Oil Company (NOC) is controlled by a national government, usually formed to manage the country's hydrocarbon resources. Many NOCs, such as Gazprom, Petrobras, and Sinopec are majority owned by the state and partially owned by private investors. NOCs are usually an arm of a government ministry, such as the ministry of petroleum or ministry of oil and gas. Some NOCs operate only in their home country (e.g., Pemex), and others compete globally across multiple sectors much like an IOC (e.g., Gazprom, Petronas and Statoil). International oil company (IOC) competes across borders globally and often operates in partnership with NOCs in the NOC's home country (e.g.; ExxonMobil, Shell and Total). Oilfield Service Companies are those firms that provide equipment, materials and services to support oil companies in all operations. Some of the large players include Schlumberger, Halliburton and Baker Hughes.

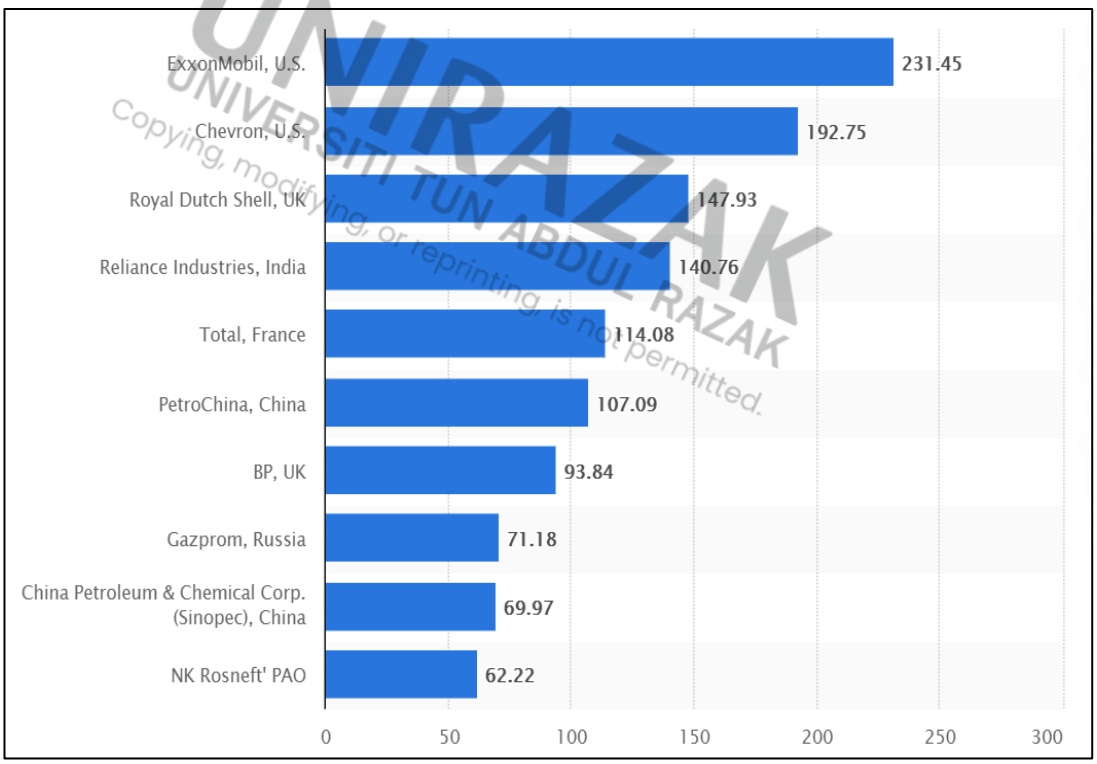

Figure 1.3: Market Capitalization in Billion US Dollars

The size and value of oil and gas companies can be measured by revenue, total asset, reservoir size ownership and etc. The next chart compares the major oil companies, both IOC's and NOC's globally according to market capitalization (Statista, 2021).

Malaysian Oil & Gas industry officially began when Shell drilled for the first oil in Miri, Sarawak in 1910 with one well. Petroleum activities in Borneo expanded markedly in 1960s with the discovery and development of offshore fields and Shell initially was the major player, followed by ExxonMobil (known as Esso, then) and they both dominated the upstream production, downstream refining and sales. Exxon and Shell were given the rights to explore and producing rights in return for tax and royalties.

In 1974, however, Malaysian Government noticed the strategic value of having control of its own natural resource and developed a government entity to control the resources by forming its own oil and natural gas company, Petroliam Nasional Berhad (PETRONAS) that comes under direct purview of the Prime Minister. Today there are more than 4000 companies operating in Malaysian Oil & Gas Industry comprising of IOC's, Independents, Local Vendors & Suppliers, Manufacturing and Service Companies.

Malaysia is the 2nd largest oil and natural gas producer in Southeast Asia and is the 5th largest exporter of liquefied natural gas (LNG) in the world, as of 2019 and she is blessed with rich and high quality oil and gas reservoirs with an average daily production of over 1.8 million barrels of oil equivalent and the proven reserves are estimated at over 5 billion barrels of oil equivalent contained in more than 400 fields in the mostly shallow waters offshore Peninsular Malaysia, Sabah and Sarawak since the 1960s [23]. About 42% of oil and 13% gas is produced in Sabah, while Peninsular Malaysia produces 32% oil and 26% gas with remaining 26% oil and 61% gas is produced from Sarawak [24]. Petronas holds exclusive ownership rights to all oil and natural gas exploration and production projects in Malaysia, and its Malaysia Petroleum Management (MPM) is responsible for managing all upstream licensing processes. The oil and gas industry contributes about 20% of Malaysia's annual GDP with financial contributions to government revenue in the form of taxes, dividends, and cash payments that comprises about 35% of total government revenue in 2019 [24].

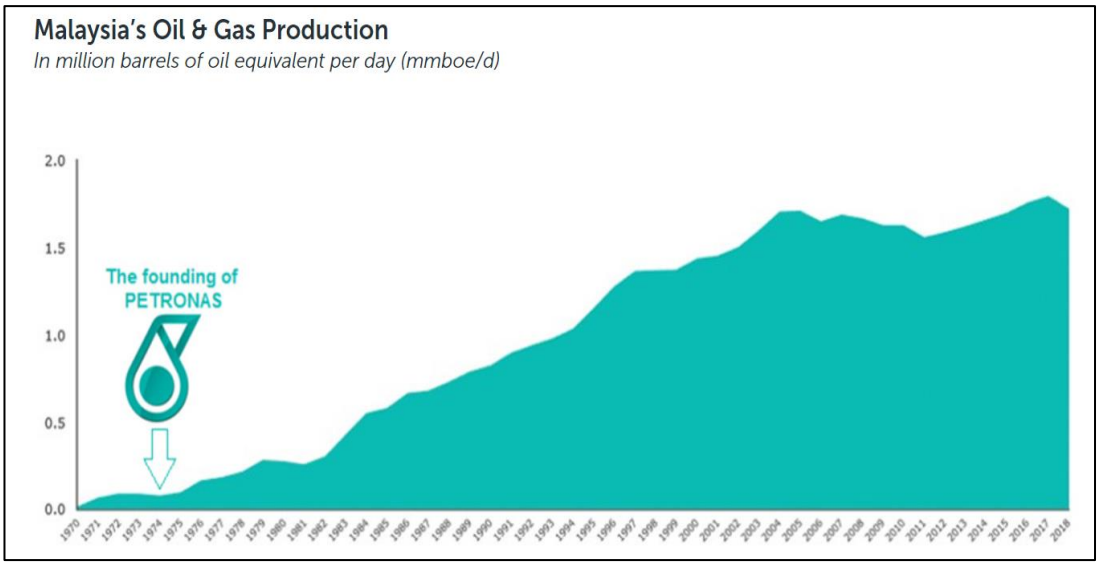

Figure 1.4: Malaysia's Oil & Gas Production (2019)

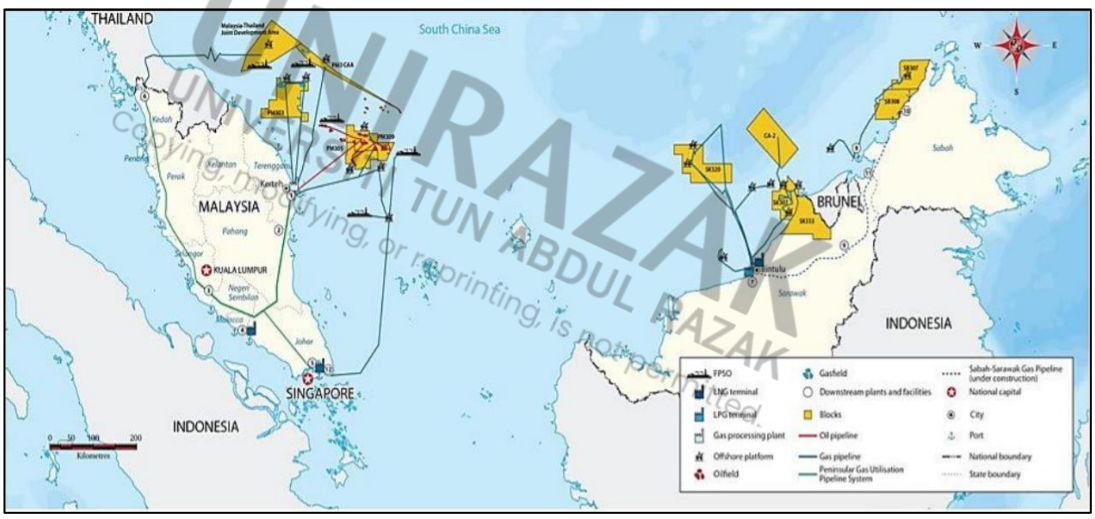

Figure 1.5: Malaysia's Oil & Gas Production Blocks

This large industry provides an enormous employment opportunity to Malaysians and foreigners with a total of more than 20,000 employees in the upstream sector alone who work on offshore oil and gas platforms. This manpower engagement is significant for a continuous, safe and successful operation on offshore platforms and hence why stress management and

prevention is key to prevent offshore employees from health and safety risks that may interrupt offshore operations.

1.3 PROBLEM STATEMENT

The work environment of an offshore platform is unique, where the workers, regardless they are first class degree engineers or school dropout cleaners, live and work in the same restricted confined area surrounded by nothing but the uncertain ocean. They work for a certain period of time without any breaks in between until the hitch period is over, far away from their loved ones. Offshore oil and gas platform employees face constant uncertainty with issues such as safety of their workplace, hazardous tasks to undertake, production demands and constant technological changes. Given the nature of such work, it can be determined by logical judgement that those working offshore cannot operate at optimal capacity as they constantly experience stress caused by a myriad of factors [25]. With the challenging work environment and the nature of work involved, often, offshore jobs may not be a preferred option to many people. Recruitment and retaining offshore employees, especially the skilled and experienced ones, can be a challenge to the industry. Hence many of the oil and gas companies go out of their way to make sure their employees' have a safe and conducive environment. Work performance of offshore oil and gas platform employees are crucial to the success of any oil and gas company. They are unquestionably the most vital capital and they need to be constantly motivated to be retained [26].

Anxiety and depression, which are 2 of the effects of stressors are very popular disease compared to AIDS and HIV in the year of 2019. Lots of suicide and self-harmed occurred throughout the year with rate of double to triple fold compared to few decades ago [27]. However in Malaysia, the Patron of the Malaysia Psychiatric Association (MPA) stated that according to National Health and Morbidity Survey, 29% of Malaysia in year 2017 had

depression and anxiety disorder, according to The Star Online, 2018. Furthermore, in Malaysia, at least 5 people commit suicide daily referring to Wong (2019) [28]. As for work stress or job stress according to Workplace Stress Continues to Mount by Korn Ferry, stated that 76% of the respondent admit that work stress affect the personal life, 66% experienced sleep disturbance and 16% quite their job due to overloaded work stress [29].

Malaysia depends heavily on oil and gas revenue as it brings about one third of the nation's revenue and manages a vast number of employee in the upstream oil and gas industry. Working offshore induces a number of stressors that may impact their performance that is directly related to the output of production. Hence, understanding the significant stressors to Malaysian offshore employees is crucial to make sure the underpinning factors can be identified and eliminated or at least mitigated to allow uninterrupted operations output. This study aims to identify the relationship of occupational stress and the selected factors (interface between job and social life, physical environment at offshore platforms, COVID-19 pandemic impact on work rotation schedule, safety and health hazards and organizational structure).

1.4 RESEARCH OBJECTIVES

1. To identify the relationship between interface between job and social life with occupational stress.
2. To identify the relationship between physical environment at offshore platforms with occupational stress.
3. To identify the relationship between COVID-19 pandemic on work rotation schedule with occupational stress.
4. To identify the relationship between safety and health hazards with occupational stress.
5. To identify the relationship between organizational structure with occupational stress.

1.5 RESEARCH QUESTIONS

1. What is the relationship between interface between job and social life with occupational stress?
2. What is the relationship between physical environments at offshore platforms with occupational stress?
3. What is the relationship between COVID-19 pandemic on work rotation schedule with occupational stress?
4. What is the relationship between safety and health hazards with occupational stress?
5. What is the relationship between organizational structures with occupational stress?

1.6 SIGNIFICANCE OF THE STUDY

The purpose of this research is to determine the relationship between occupational stress to offshore employees in Malaysia with significant factors that contributes to the cause. The research is expected to add further value to the existing researches on the knowledge of stressors identification and outcome of this study will help determine the connections between them. A new factor, COVID-19 pandemic impact is also included as a factor in altering the work schedules that will affect the occupational stress and in future, this study will help to accommodate similar pandemic effects to the relevance of the study. To date, few studies have examined the mental health of offshore oil workers. A study by Sutherland and Cooper [17] reported that approximately 19% of offshore workers had obsessionality and phobic anxiety. Sutherland and Cooper [17] also revealed that offshore workers reported higher rates of anxiety than the general population, and that perceived stress from safety problems at work was a strong predictor of anxiety among offshore workers. De Dreu *et al*. [19] analyzed 2,126 medical evacuations from four major oil and/or gas producers operating in the UK sectors of the North Sea from 1976 to 1984 and found that 1.98% of the evacuations were carried out primarily due to mental disorders. A comparative study by Parkes [30] on mental health among operators working on offshore and onshore platforms showed that rates of anxiety were significantly higher among offshore workers as compared with onshore workers. Hence, this paper will be significant to the organization and employees to understand the stressors that are affecting the Malaysian offshore oil and gas workers and prevention and elimination techniques to the stressors can be identified and applied.

1.7 THE ORGANIZATION OF THE STUDY

1.7.1 CHAPTER 1

Chapter 1 introduces the general stress definition, factors influencing stress and deep dives into occupational stress overview. The chapter also gives a detailed overview of the oil and gas industry and spells out the Malaysian context with oil and gas daily production rate as well as briefly explaining the significance of the industry to our nation's revenue. From there, the number of employees are approximately tabulated to signify the importance of the workforce's welfare for an uninterrupted oil and gas production. Chapter 1 introduces to occupational stressors in offshore oil and gas industry, expounds the background of the study, explains the problem statement, establishes the research objective and research question and finally derives the significance of this research paper.

1.7.2 CHAPTER 2

Chapter 2 focuses on literature review of offshore occupational stressors, the theoretical background that drives this research paper and a detailed study on each factors that is identified in this research under empirical study. All the variables are defined and explained based on previous researches. Finally the conceptual modal is proposed and the hypotheses for this study are outlined.

1.7.3 CHAPTER 3

Chapter 3 explains the methods that the researcher will be using to quantify the dependent, independent and moderating variables. In addition, this chapter also describes the research design, population and sampling technique that will be used. The primary method that will be used in collecting data will be through a set of survey questionnaires in dual language.

1.7.4 CHAPTER 4

This chapter analyzes the field survey data from questionnaires and encapsulates the findings for the study. This chapter extensively discusses the Reliability Analysis, Descriptive Analysis, Frequency Distribution Analysis, Correlation Analysis and Multiple Regression Analysis used to analyze the data. It also explains the validity of data as well as acceptance or rejections of the hypotheses.

1.7.5 CHAPTER 5

To conclude the research paper, Chapter 5 summarizes the key findings and their implications for the proposed conceptual model and hypothesis testing. Furthermore, it concludes the objective of the study as described in Chapter 1, validates the justifications based on academic and theoretical contributions with the analytical value input from Chapter 4. The ethics of research, limitations of study, future recommendations for research and suggestions of remedial actions are included in this chapter as well.

1.8 STUDY PLAN

A Gantt chart is constructed to prepare the study/research roadmap in order for the researcher to have a look ahead on the research work and to complete the study in stipulated time. The Research Project timeline is tentative and is subject to change according to unforeseen circumstances [extension of semester, postponed work, etc.].

WEEK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RESEARCH PROPOSAL																				
TOPIC SELECTION																				
JOURNAL ANAYSIS																				
CHAP 1 : INTRODUCTION																				
CHAP 2 : LITERATURE REVIEW																				
CHAP 3 : RESEARCH METHODOLOGY																				
REPORT PREPARATION																				
REPORT PRESENTATION																				
REPORT SUBMISSION																				
RESEARCH PROJECT (PLAN)																				
DATA COLLECTION																				
CHAP 4 : DATA ANALYSIS																				
CHAP 5 : CONCLUSION																				
REPORT PREPARATION																				
REPORT PRESENTATION																				
REPORT SUBMISSION																				

Table 1.1: Gantt chart for Research Paper time frame

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

A selection of available published documents that relates to offshore occupational stress, which contain information, ideas, data and evidence written from the standpoint of the interest of the study was reviewed extensively to fulfill the objective of the research. In regards to the interest of the researcher on the topic, a few variables were selected as subject of the study. The dependent variable (DV) is the Occupational Stress. The independent variables (IV) are interface between job and social life, physical environment at offshore platforms, COVID-19 pandemic on work rotation schedule, safety and health hazards and organizational structure. The moderating variables are age and education level that affect some of the IV's. This chapter explains the underpinning theory that support this study, explains each and every stressors that are identified for the interest of the study as well as proposes a conceptual framework for the research.

2.2 THEORETICAL FOUNDATION

Stress is defined as mental or physical sensation molded through an individual's cognitive assessment of the stimulus and is a result of one's interference with the environs, which determines an employees' performance, based on Lazarus & Folkman (1984). There are various stressors in the offshore work environment that can exert an hostile effect on the health and safety of these offshore employees that includes bad weather with heavy downpours, storm, typhoon, high waves and aggressive sea conditions, adversative physical atmosphere, the imminent presence of danger while travelling by vessels and choppers, exposure to poisonous gasses, noise and accident hazards, a repetitious and boring life within a limited

space, separation from the social community and family as well as the extraordinary demands and limitations integral in offshore work [31].

An occupational stress questionnaire was used for the study in the UK North Sea oil and gas workers by Cooper & Marshall, (1976), Cooper and Sutherland (1987) and Sutherland and Cooper (1996) based on Cooper and Marshall's occupational stress model, and they identified sixteen sources of occupational stress in both their studies. Some of them were career advancements and incentive/compensation, work-home and job-family relationship, problems related to field management, elements inherent to the job, the ever-changing and unpredictable work environment, offshore living environment and safety of employees, career prospects and the equivalent remuneration, climate and work relationship, climate and organizational structure, physical well-being, work balance and mode of transportation.

McNabb, Ratard, Horan, & Farley (1994) recorded and explained a higher incidence of non-fatal injuries among offshore oil workers than onshore workers. They hypothesized that some stressors, such as work organizational factors, shift schedules and apparent existing risks may have contributed to the higher margin of injuries at work. Occupational stress has also been impeached as a risk factor for amplified blood pressure [20], disorders of the digestive, respiratory and musculoskeletal systems [20,31,32,33] and other health problems [21].The Michigan occupational stress ideally [34-37] advocates that occupational stress is an intricate, multivariate and vigorous progression in which stressors, perceived stress, short-term response, continuing health consequences and altering variables are all inter-related.

Stress can be of different types as explained by Penley et.all (2002) [51,52].

2.2.1 ACUTE STRESS

Acute stress is the most common form of stress among human beings. Acute stress deals with the pressure of the near future or dealing with the very recent past. This type of stress is often misinterpreted as a negative connotation. But in certain circumstances, it is a good thing to have some acute stress in life. Running or any other form of exercise is considered an acute stressor. Some exciting or exhilarating experiences is an acute stress is usually very fun. Acute stress is a short-term stress which has long term causes.

2.2.2 CHRONIC STRESS

Chronic stress is just the opposite of acute stress. It has an enormous effect on people which become a very serious health risk if it continues over a long period of time. Chronic stress leads to memory loss, damage special recognition and produces decreased desire for eating. The severity varies from person to person and gender difference can also be an underlying factor. Women are able to take longer durations of stress than men without showing the same maladaptive changes. Men can deal with shorter stress duration better than women. Beyond a limit, the chances for them to develop mental issues increase drastically.

2.2.3 EMOTIONAL STRESS

When undergoing emotional stress, the hormones get out of balance. Cortisol levels go up and DHEA levels go down the coping hormones get depressed and the pleasure hormones don't get released.

2.2.4 SLEEP DEPRIVATION-INDUCED STRESS

Sleep is a natural medicine, pure and simple. But without adequate levels of restorative sleep, our body release cortisol, which sets up a stress cycle and causes a disruption in the sleep we do get.

2.2.5 DIETARY STRESS

An unbalanced diet causes stress in the body. So does eating too little or too much, which can disrupt the digestive system and hinder the body's ability to recover from physical exertion or even a day of overwork at the workplace.

2.2.6 PHYSICAL STRESS

This kind of stress typically occurs from exerting too much in a workout, but it also affects those who have the type of job that demands a lot physically, such as a construction work.

2.2.7 CHEMICAL STRESS

Chemical stress occurs when the body has to get rid of compounds that are harmful or toxic to it. Most such toxins come from the external environment, everything from the air that is breathed, the water and food intake, the home and office inhabited.

2.2.8 INFLAMMATION-INDUCED STRESS

Inflammation is a side effect of stress, but it also serves as a promoter of stress on the body. Inflammation comes from a number of things, including working out too hard, eating a poor diet, being overweight, and not getting enough omega 3 in the diet.

2.2.9 TIME AND ANTICIPATORY STRESS

Time stress is experienced when there is little or no time to meet the personal obligations or work deadlines. Anticipatory stress is concerning the future. It can also be vague and undefined, like an overall sense of dread or worry about the future that something will go wrong.

2.2.10 SITUATIONAL AND ENCOUNTER STRESS

Situational stress is experienced when there is no control over the situation. It includes situations involving conflict, or a loss of status or acceptance. Encounter stress is the most common type of stress which is encountered by the physicians and social workers. It occurs when the role of an individual involves a lot of personal interactions with those groups in distress.

Comprehensively, over 264 million people were estimated to suffer depression from general workplace and the associating cost for mental illness globally had reached up to US$2.5 trillion. In Malaysia itself, the cost for mental illness has the likelihood to increase radically from RM43.6 billion up to RM99.9 billion from 2010 to 2030 according to Bernama (2017).

The extensive literature review and research studies are the basis and underpinning theory for this paper where the specific focus is fixated on the Malaysian offshore employee's occupational stressor relationship based on the previous studies done by many other researches.

2.3 EMPIRICAL STUDY

2.3.1 INTERFACE BETWEEN JOB AND SOCIAL LIFE

Working offshore can be stressful due to numerous factors and one of them is the interface between job and social life of an individual. This is one of the stressors that will be studied in this research for Malaysian oil and gas employees. The nature of work, based on rotation that may expect the employees to be based offshore for a minimum of 14 days to a nominal maximum of 28 days prevent them from being engaged with social life onshore, especially with family and friends. The risk of marriage and love relationship breakdown and worrying about poor relationship with children and family could be a huge distress to the employees. Employees who work offshore for a long time spend only half their lifetime with their families since the remaining half is spent offshore, away at sea. Leaving behind spouse to cope with situations at home also causes stress to them as their counterpart needs to manage every aspect of life alone, taking the responsibilities of both parents. Isolation at offshore causes a monotonous lifestyle and many at times they need to miss out on social events. In addition to these, other psychosocial aspects of offshore work concern the living conditions that include confined spaces, limited privacy and limited opportunities for leisure activities and retreat [38] add to this factor that leads to occupational stress. This classification denotes the occupational stress due to lack of social support at home and conflict in regards to stress both inside and outside of place of work [39].

There's a known phenomenon that is called the "Intermittent Husband Syndrome" [40] where Morrice and Taylor (1978) described it as a triad of symptoms: anxiety, depression and sexual difficulties, which occur as a result of frequent partings and reunions between a wife and husband. There is anxiety, tearfulness and depression in the wives of intermittent husbands when they are about to part with their husbands, and that there is also anger, anxiety, tension and recrimination on reunion of the couple [40]. Angrist & Johnson (2000) revealed in their study on effects of work-related absence on families that deployment of male soldiers had no effect on marital dissolution, but deployment of female soldiers led to a large and statistically significant increase in divorce rates.

White & Keith (1990) and Shen & Dicker (2008) further mentioned that the family conflict that arise from working a non-standard pattern of days and working hours is such that might increase the likelihood of divorce. Parkes & Clark (1997) conducted individual interviews with a total of 19 wives of offshore personnel on issue relating to their husband's offshore employment, family and domestic issues associated with offshore employment, particularly those associated with the husband's intermittent absence from home. Issues raised by these wives include disruption of the family routine and leisure activities, problem of the partner in readjusting to the family, mood changes, tension and anxiety. Parkes & Clark (1997) mentioned that the initial period of shore leave tends to give rise to particular problems of adjustment, especially if the husband had been on night shifts immediately before going on shore leave. They further revealed that in one instance, a wife whose husband worked three weeks of day/night shift-work reported that her husband had extreme difficulty in readjusting which took at least one week to come out of it while others spoke of their husbands needing time to unwind or needing to be left alone for one or two days. These reports of these wives about their husbands indicate that their husbands underwent some sorts of psychological problems.

2.3.2 PHYSICAL ENVIRONMENT AT OFFSHORE PLATFORM

This factor refers to the occupational stress experienced by an individual as a magnitude to their physical working environment. Where it could be a major contributor to the inability to concentrate or perform effectively, according to Burke (1988) [39]. Physical demands of the work environment are considered to be an intrinsic job factor [13]. However, the experience of environmental factors is highly subjective, different people having different inception in terms of exposure to the levels of temperature, noise and light. Sutherland and Cooper (1988) also had encompassed some of the conceivable environmental factors in their conceptualization of physical environmental demands that includes noise, temperature variation, ventilation and humidity, lighting and illumination levels, hygiene and climate. In South Africa, Shadwell, Schlebusch and van Niekerk (1996) investigated the effects of environmental variables in places where they could not be controlled by employees and found that many of the employees displayed symptoms indicative of sick-building syndrome when thresholds of noise and air pollution were exceeded. Apart from that, poor air circulation in the living accommodation, rest being disturbed because of the sharing of living accommodation with others, living with persons having different lifestyle and behaviors and disturbance in the living accommodation due to noise from machinery [41] are few other factors to stress to offshore employees too.

2.3.3 SAFETY & HEALTH HAZARDS

Offshore work requires its employees to be mentally and physically fit [42]. Previous studies analyzing acute incidents of offshore injury and illness from medical evacuation records found respiratory diseases, flu infections, gastrointestinal problems, headache, and unspecific pain syndromes to be common causes for illness [43,44]. Further complaints consisted of

cardiovascular disease, sleep problems, skin irritations and general physical and psychological disturbances [46-48]. Due to the required high health standards, it has been discussed that offshore oil and gas workers represent an exceptionally healthy work population [49,50]. However, evidence is mixed, and health complaints among the workers have also been described (e.g. sleeping problems [49], musculoskeletal complaints [44], and overweight). Likewise, although some studies reported good mental health for offshore oil and gas workers [49], other studies produced conflicting results (e.g. higher levels of nervousness [49], mental fatigue and anxiety in offshore oil and gas workers compared to onshore workers). The imminent presence of wariness for employees offshore leads to stress even at earlier stages of career, knowing that these are risks that is unavoidable.

There is high standards of safety in offshore oil and gas industry, nevertheless, employees still worry about inadequate emergency response to accidents (e.g. fire, explosion) [41], disasters caused by harsh and unpredictable off-shore climates and natural feeling of inadequacy when someone has an accident due to dubious reasons. Besides that, travelling to offshore via vessels and helicopters alone pose their own threat.

2.3.4 ORGANIZATIONAL STRUCTURE

Organizational structure relates to the stress experienced by an individual due to working for an institution where rules are rigidly set and procedures and protocol must be closely followed. There is a distinct hierarchy and a definite ‘system’ or specific channel to go through with any decision or request [39]. When this functions properly, it facilitates the flow of information, but if one does not know the correct channels to go through, it can be extremely frustrating and time consuming which can lead to a feeling of deprivation of freedom [41]. Apart from that, the work structure of fixed rotation falls under this same category. Working 14 days of

day-shift alternating with 14 days of night-shift with lack of paid holidays and inconsistent compensation leads to stress to employees offshore as well [41].

When there is too much work to do and not enough time or resources to do it can be stressful. Work overload arises when demands exceed the capacity of a person to meet all of them adequately. The target for work completion is always set by superior and must be completed within a time frame. As the dead line for the task completion approaches, the work pressure increases. If the employee is unable to cope-up with the work pressure it leads to physical or mental stress.

Poor working conditions represent other important job stressors. Extreme temperature high or low density, loud noise, lighting visibility, radiation or chemical exposure and adverse weather condition at any given time are few examples of working conditions that can cause stress in employees. When these environmental stressors are present the job performance of the employees deteriorates. This can lead to serious incident. On an oil and gas platform workers work in group or buddy system, they must have good interrelation between colleagues to perform the job given. A good working relationships and interactions with peers, sub-ordinates, and superiors are vital aspects of the organization achievement for work completion. When relationships are poor and unhealthy, they become sources of stress

The organizational structure or factors can be explained into sub divisions as below;

2.3.4.1 Workload and Time Pressure

When there is too much work to do and not enough time or resources to do it can be stressful. Roll over load arises when demands exceed the capacity of a person to meet all of them adequately. Role overload or a condition to work too hard is the major source of stress for many jobs. The target to be attained is always within a time frame. As the dead line for the task completion approaches, the work pressure increases. If the employee is unable to cope-up with the work pressure it leads to physical or mental stress.

2.3.4.2 Job Conditions

Poor job conditions represent another important set of job stressors. Extreme temperature high or low density of, loud noise, lighting, radiation and air pollution are few examples of working conditions that can cause stress in employees. When these environmental stressors are present the job performance of the employees deteriorates which leads to serious consequences. Moreover, their effects are cumulative. When the working hours of employees are too long without interval or rest period they become tired both physically and mentally. If this continues the employees are prone to stress.

2.3.4.3 Role Conflict and Ambiguity

Differing expectations or demands on a person at the work place cause role conflict. Role ambiguity occurs when an employee is uncertain and vague about assigned job duties and responsibilities. Role conflict and role ambiguity are significant sources of job related stress.

Having responsibilities for the behavior of others and lack of opportunity to participate in decision making are other aspects of employee's roles that are stressful.

2.3.4.4 Career Planning and Development

The past liberalization era had led many business organizations for reorganization and downsizing to keep in line with the industry demands. Such restructuring of jobs, work teams, departments or entire organizations have many careers related (especially career planning and development) concerns of employees. Hence the employees find these concerns stressful.

2.3.4.5 Interpersonal Relations

Groups and teams in the Organization have a major impact on the behavior of people. Good working relationships and interactions with peers, sub-ordinates, and superiors are vital aspects of organizational life, helping people to achieve their personal and organizational goals. When relationships are poor and unhealthy, they become sources of stress.

2.3.5 COVID-19 IMPACT ON WORK ROTATION SCHEDULE

With some existing organizational structure, offshore employee are proven in many empirical studies that the rotation in work schedule is a stressor [41]. With the recent Covid-19 pandemic, the circumstances was worsen for employees. For organizations to have business continuity in the midst of pandemic, government restrictions and movement control orders, few indispensable actions had to be taken and some of them were to have longer working days than as agreed in contract, home-quarantine and quarantine in hotels without fair

compensations as well as inconsistent rotation schedule. This COVID-19 impact on offshore work rotation schedule is a factor that was not discussed in previous researches.

2.4 PROPOSED CONCEPTUAL FRAMEWORK

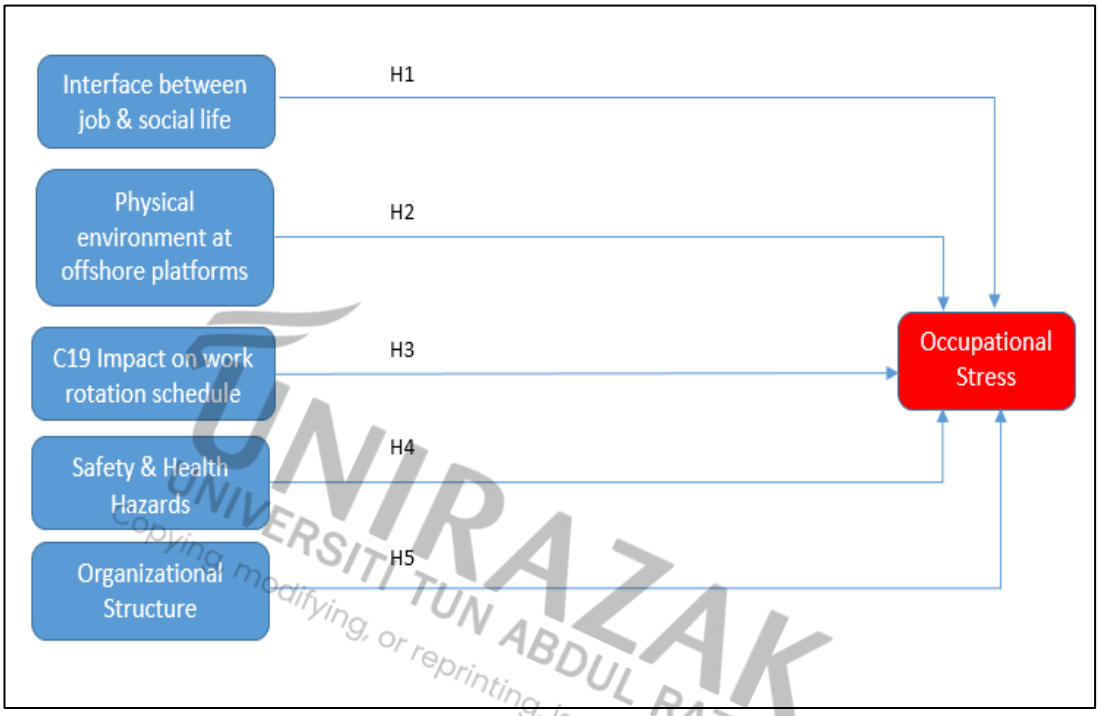

Figure 2.1: Theoretical Framework

2.5 HYPOTHESIS DEVELOPMENT

H1: There is a significant relationship between interface between job and social life with occupational stress.

H2: There is a significant relationship between physical environment at offshore platforms with occupational stress.

H3: There is a significant relationship between COVID-19 impact on work rotation schedule with occupational stress.

H4: There is a significant relationship between safety and health hazards with occupational stress.

H5: There is a significant relationship between organizational structure with occupational stress.

2.6 SUMMARY OF CHAPTER 2

This chapter explicates the excessive literature review that was studied prior to this research which is the foundation for the underpinning theory on Malaysian offshore employees' occupational stress factors. The chapter details out the account for all the selected factors; interface between job and social life, physical environment at offshore platforms, COVID-19 impact on work rotation schedule, safety and health hazards and organizational structure.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

Chapter 3 provides a thorough interpretation of the research approach and methodologies used to determine the relationship between occupational stress with the identified stressors including the moderating variables of age and education level relationships. The chapter also covers the research design, sample and sample population acquiring strategy, data collecting method as well as operationalization and measurement of each variables. Finally, the method of data analysis is explained comprehensively.

3.2 RESEARCH DESIGN

Research design is a strategic plan that is charted during a study in order to reach valid conclusions, with particular consideration given researcher's selection and assignment to conditions, data collection, and data analysis. Research designs may take a variety of forms, including experiments, observational studies, longitudinal designs, surveys, focus groups and other nonexperimental methods. In research design, the researcher is expected to create their own step-by-step guidance in order to ensure the objectives of the research is met [27]. It comprises the blueprint of the data collection, measurement and analysis of the gathered data and is the arrangement of conditions for collection and evaluation of data in a fashion which is designed to combine relevance to the research purpose.

A descriptive study will be undertaken in order to ascertain and be able to describe the characteristics and the relationships of the dependent, independent and moderating variables

that are defined in this particular research. Of all the different type of research strategy, a survey research will be selected to conduct this research since it is the best scheme for collecting information from targeted individuals. A questionnaire that is adapted and modified from the study that was used previously in North Sea, UK [13,53,54] will be utilized for collecting information from the subject of interest to describe, compare and explain Malaysian offshore employees' knowledge, attitudes and behavior towards the stressors and occupational stress relationship. A cross-sectional study will be conducted among Malaysian offshore oil & gas employees owned by an International Oil Company that is based in South China Sea via a non-contrived field study with minimal researcher interference. The unit of analysis will be individuals working at various platforms that belongs to the particular IOC.

3.3 STUDY POPULATION AND SAMPLING PROCEDURES

According to Sundram et al., (2016) [55], the term "target population" refers to the category of people the researcher is interested in studying. In this research, the size of population in the selected International Oil Company that is currently operating in Malaysia in South China Sea has about 3000 employees and service contractors. The sample population needed for this research according to Taro Yamane, 1967 [56] is n=97 with +/- 10% precision level at 95% confidence level.

Table 2. Sample size for ±3%, ±5%, ±7% and ±10% Precision Levels Where Confidence Level is 95% and P=.5.

Size of	Sample Size (n) for Precision (E) of:			
Population	±3%	±5%	±7%	±10%
3,000	811	353	191	97

Table 3.1: Taro Yamane sample population table

Probability sampling will be used for this research since this study has a population frame and a simple random sampling will be chosen to conduct this study since any individual in the population has an equal possibility of being selected for this research and has the most negligible bias. The sample population will include the job scopes of offshore management staffs, engineers, First Line Supervisors, production and maintenance technicians, roustabouts, carne operators, catering crew, drilling & well services team, painting and construction team as well as contract helpers.

3.4 DATA COLLECTION METHOD

With more than 3000 employees and contractors, there will be only 97 valid questionnaires needed for the justifications and data analysis, as per Taro Yamane's sample population theory [56]. However, according to Nigell Lindemann (2021) [57], the average response rate for questionnaire based data collection method is only 33%. Hence, a set of 300 questionnaires using Google Form will be sent out via social media apps. Since the researcher works in one of the platform, the survey will be conducted while the researcher is at work offshore to validate 20-30% of the questionnaires. The questionnaire survey form is a quantitative technique and as a mean of primary data and this method is chosen for this study as it is a convenient method to get information from the respondents. According to Hox & Boeije (2005), primary data is defined as first-hand data collection from the original sources [59] to help the researcher get explicit and raw information needed to answer the research question.

The questionnaire will be in bilingual (English and Malay language) format to accommodate the majority of Malaysian oil and gas employees and contractors who do not have English as their 1st language in the identified organization. The questionnaire will be translated from English to Malay and the translation draft will be verified by a local linguistic expert who is fluent in both the language. This is in accordance to the back translation method suggested by

Brislin (1980) [58] to ensure consistency in meaning. The data collection is estimated to begin in mid-Feb 2022 and expected to complete by end of Feb 2022.

This research will be analyzed based on secondary data as well to support the findings and theory as well as the data collected from questionnaire. Secondary data is data recorded and gathered from previous research such as journals, websites, articles and others databases. Secondary data can be separated over time since it is made accessible to readers. It helps the researcher get more information and shows a strong indication that the source is accurate and based on the facts.

3.5 OPERATIONALIZATION AND MEASUREMENT

The questionnaire will be divided into 6 segments with the 1st segment covering the demographic measurements whereas the last 5 segments will be covering each independent variable. To determine the respondent's agreement with the question, a 5-point Likert scale method will be used. A Likert scale is a scale used to measure surveys taken directly from the respondent on a single factor. To minimalize the biasness of data gathered as well as to ensure that no sensitive information are concealed, all questionnaires will be on an anonymous basis. The employees will be assured that the information received from them will be used for research and study objectives only and that the questionnaires would not be released to their respective organization [41].

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Table 3.2: 5 Point Likert Scale

Part A: Demographic information [age; education level, marital status, years of work experience and job titles]

Part B: Questions related to interface between job and social life

Part C: Questions related to physical environment at offshore platforms

Part D: Questions related to C19 Impact on work rotation schedule

Part E: Questions related to safety & health hazards

Part F: Questions related to Organizational structure

3.6 DATA ANALYSIS TECHNIQUES

The technique of data analysis is a crucial part to the research and the researcher should be able to identify the right modus operandi in order to get the desired results. It is the application of logic to comprehend a subject [60]. The data analysis technique may include identifying a coherent pattern and summarizing the pertinent information revealed by the study. IBM Statistical Package for Social Science Version 28.0.1. (SPSS 28.0.1) will be used to run Reliability Analysis, Descriptive Analysis, Frequency Distribution Analysis, Correlation Analysis and Multiple Regression to analyze the data collected from the questionnaires.

3.6.1 RELIABILITY ANALYSIS

A reliability test will be carried out to determine the trustworthiness of the data for the analysis to determine whether or not the data obtained from the survey is reliable for the analysis. According to Ursachi, Horodnic, & Zait (2013), prior to the analysis of the data, the level of error needs to be identified to an acceptable level. Cronbach's alpha test will be used to determine the accuracy of multiple-question surveys using Likert scale. According to Hair Jr., Black, Babin, & Anderson (2014), the range of Cronbach's alpha should be in between 0 to 1 with minimum acceptable limit of 0.7.

Cronbach's Alpha (α)	Internal Consistency
Less than 0.6 (< 0.6)	Poor
0.6 to Less than 0.7 (0.6 - < 0.7)	Moderate
0.7 to Less than 0.8 (0.7 - < 0.8)	Good
0.8 to Less than 0.9 (0.8 - < 0.9)	Very Good
More or equals to 0.9 (≥ 0.9)	Excellent

Table 3.3: Interpretation of Cronbach's Alpha

3.6.2 DESCRIPTIVE AND INFERENTIAL STATISTICS ANALYSIS

Typically in most research conducted on groups of people, both descriptive and inferential statistics will be used to analyze the results to draw conclusions [62]. According to Krosnin (2008), descriptive analysis is an analysis method of data that helps to explain, examine and summarize data in a quantitative and constructive way such that patterns might emerge that

will satisfy every condition of the data that had been gathered [61]. However, descriptive analysis alone will not be sufficient to make conclusions beyond the data that had been analyzed regarding the hypotheses that is made for this research. They are simply a way to describe the gathered data based on the sample population. Hence why, the descriptive analysis is paired with inferential analysis which is a strategy that allows the use of the sample population data to make generalizations about the populations from which the samples were drawn [62]. The descriptive analysis which will consist the percentages and frequency of each variable of the respondent will be used quantitatively using means and standard deviations of individual stressors in this research and an inferential analysis based on secondary data will be used for a more precise and reliable analysis.

Mean Score	Level
1.00 – 2.33	Low
2.34 – 3.67	Moderate
3.68 – 5.00	High

Table 3.4: Mean Score Level for Descriptive Analysis

3.6.3 FREQUENCY DISTRIBUTION ANALYSIS

According to Gravetter FJ and Wallnau LB (2000), one of the common methods for organizing data is to construct frequency distribution which is an organized representation of the number of individuals in each category on the scale of measurement either in tabulated or graphical format [65]. It allows the researcher to have a glance at the entire data conveniently and presents a picture of how the individual observations are distributed in the measurement scale. The frequency analysis will be carried out to obtain accumulated number of responses

associated with different values of one variable and also to identify the majority and minority level among respondents in the demographical information.

3.6.4 CORRELATION ANALYSIS

The correlation analysis is significant and will be used in this research to identify, investigate and define the relationship between the dependent, moderating and independent variables. Pearson's correlation is used for studying and looking at the connection between two quantitative and continuous variables. According to Guildford (1973), the Pearson correlation measures the strength of the linear relationship between two variables. It has a value between -1 to 1, with a value of -1 meaning a total negative linear correlation, 0 being no correlation, and + 1 meaning a total positive correlation. It indicates that the two variables are linked to each other [63,64]. The strength of the relationship is shown as per the table below where if the correlation analysis is more than 0.90, then it has a very high dependability of relationship between the variables.

R	Strength of Relationship
<0.20	Almost negligible
0.20 – 0.39	Low correlations, definite but small relationship
0.40 – 0.69	Moderate correlation with substantial relationship
0.70 – 0.89	High correlation; marked relationship
>0.90	Very high correlation; very dependable relationship

Table 3.5: Correlation Table

3.6.5 MULTIPLE REGRESSION ANALYSIS

Finally, multiple regression analysis will be conducted to assess the strength of the relationship between the occupational stress [dependent variable] and the identified independent variables as well as the importance of each of the stressors to the relationship [66].

3.7 SUMMARY OF CHAPTER 3

A detailed study of the researcher's methods and strategies for measuring the dependent and independent variables are clearly outlined in this chapter. In addition, the study design, population, and sampling technique were all mentioned in this chapter. The chapter also covers the research design, sample and sample population acquiring strategy, data collecting method as well as operationalization and measurement of each variables. Finally, the method of data analysis is explained comprehensively.

CHAPTER 4: ANALYSIS

4.1 DATA COLLECTION, INTERPRETATION AND ANALYSIS

As described earlier in Chapter 3, IBM Statistical Package for Social Science Version 28.0.1. (SPSS 28.0.1) was used to run Reliability Analysis, Descriptive Analysis, Frequency Distribution Analysis, Correlation Analysis and Multiple Regression to analyze the data collected from the questionnaires.

The questionnaires were sent out in bilingual (English and Malay language) format to accommodate the majority of Malaysian oil and gas employees and contractors who do not have English as their 1st language in the identified organization. The questionnaire was initially created in English format based on occupational stress questionnaire that was used for the study in the UK North Sea oil and gas workers by Cooper & Marshall, (1976), Cooper and Sutherland (1987) and Sutherland and Cooper (1996) based on Cooper and Marshall's occupational stress model. It was then translated from English to Malay and the translation draft was verified by a local linguistic expert who is fluent in both the language which is in accordance to the back translation method suggested by Brislin (1980) [58] to ensure consistency in meaning. The data collection began in mid-February 2022 and was completed by end of March 2022.

A set of 200 questionnaires in both languages using Google Form was sent out via social media apps and 143 have been successfully collected back, accounting for 71.5% response rate. Since the researcher works in one of the platform, the initial part of the survey was conducted while the researcher was at work offshore to validate 10% of the questionnaires. With more than 3000 employees and contractors, there will be only 97 valid questionnaires needed for the

justifications and data analysis, as per Taro Yamane's sample population theory [56]. However, after the planned duration of survey timing, the total questionnaires received was 143 sets which was 48% more than what was expected. Hence the precision level is +/- 8.5% for 95% confidence level.

Since the questionnaire was in bilingual, the final data was all translated back to English in order to feed the data into SPSS software. No alteration of feedback was changed in the process to uphold the originality and accuracy of the data. Only the participants profile information and the Likert Scale that was in Malay Language was translated to English as per table below using Microsoft Excel prior to feeding all 144 data set into SPSS.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Sangat Tidak Setuju	Tidak Setuju	Berkecuali	Setuju	Sangat Setuju
1	2	3	4	5

Table 4.1: Likert Scale in English and Malay Language

In addition to that, Q1, Q2, Q24, Q28, Q30, Q31 were all transformed and recoded into different variables using the reverse values since these questions were set in negative values (negatively coded) in order to get the right correlations as suggested by SPSS expert, Ruben Geert van den Berg [67]. The only thing that changed were the numeric values underlying the answers by retaining all dictionary information including variable labels and formats. All variables had their original names in order and no alteration to data values were made.

4.2 CHARACTERISTICS OF THE STUDY SUBJECT

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	2	1.4	1.4	1.4
	Male	141	98.6	98.6	100
	Total	143	100	100	
Age Group					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21 – 30 Years	13	9.1	9.1	9.1
	31 – 40 Years	85	59.4	59.4	68.5
	41 – 50 Years	32	22.4	22.4	90.9
	51 – 60 Years	8	5.6	5.6	96.5
	More than 61 Years	5	3.5	3.5	100
	Total	143	100	100	
Highest Education Level					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secondary School	28	19.6	19.6	100
	Diploma	71	49.7	49.7	75.5
	Bachelor Degree	37	25.9	25.9	25.9
	Master's Degree	7	4.9	4.9	80.4
	Total	143	100	100	
Years of Service					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5 Years and below	15	10.5	10.5	33.6
	6 – 15 Years	79	55.2	55.2	88.8
	16 – 25 Years	33	23.1	23.1	23.1
	More than 25 Years	16	11.2	11.2	100
	Total	143	100	100	
Position					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Managerial	12	8.4	8.4	53.1
	Engineer	24	16.8	16.8	16.8
	First Line Supervisor	40	28	28	44.8
	Technician	42	29.4	29.4	100
	Roustabout/Helper/Crew/Others	25	17.5	17.5	70.6
	Total	143	100	100	

Table 4.2a Frequency Table for Participants Characteristics

Statistics						
		Gender	Age Group	Highest Education Level	Years of Service	Position
N	Valid	143	143	143	143	143
	Missing	0	0	0	0	0
Mean		1.99	2.35	2.18	2.55	3.15
Median		2	2	2	3	3
Mode		2	2	2	3	5
Std. Deviation		0.118	0.858	1.032	0.969	1.515
Variance		0.014	0.736	1.065	0.94	2.295
Minimum		1	1	1	1	1
Maximum		2	5	4	4	5

Table 4.2b Statistics Table for Participants Characteristics

Demographic characteristic is the first section of the questionnaire components. The demographic section included gender, age group, highest education level, years of service and position. Based on the SPSS analysis obtained as per Table 4.2a and Table 4.2b, there were 2 females respondent (1.4%) and 141 male respondents (98.6%) out of 143 participants and it is a fair account since the offshore oil and gas industry is mostly dominated by male counterparts.

The age distribution of the participants are 13 (9.1%) for range between 21-30 years, 85 (59.4%) for range between 31-40 years, 32 (22.4%) for 41-50 years, 8 (5.6%) for range between 51-60 years and 5 (3.5%) for more than 61 years old. The mean for the age group is 2.35 (SD = 0.858) which falls under the range between 31-40 years old. It shows that the majority of workforce in Malaysian oil and Gas Industry are in the middle age of 31-40 years old.

The highest education level segment shows that 37 (25.9%) respondents have acquired Bachelor's Degree, 71 (49.7%) have Diploma, 7 (4.9%) have Master's Degree and 28 (19.6%) respondents have acquired at least a secondary school qualification. The mean is 2.18 (SD =

1.032) where the majority of the respondents fall under the qualification of Diploma level in the oil and gas industry.

For experience or number of years of service in the industry, there were 15 (10.5%) respondents who had experience of 5 years and below, 79 (55.2%) with 6-15 years, 33 (23.1%) with 16-25 years and 16 (11.2%) with more than 25 years of experience. The mean is 2.55 (SD = 0.969) and shows the majority of respondents have 6-15 years of service in the industry.

For the position segment, 24 (16.8%) were Engineers, 40 (28%) were First Line Supervisors, 12 (8.4%) under management/managerial position, 42 (29.4%) as technician level and 25 (17.5%) as roustabout/helper/crew/others position. The mean is 3.15 (SD = 1.515) where the majority of respondents represent the technician level

4.3 DESCRIPTIVE ANALYSIS

4.3.1 OCCUPATIONAL STRESS (DV)

Table 4.3 shows the respondent's result derived from the Occupational Stress questionnaire's statement. Based on statement one indication, 57.3% of the respondents strongly agree they have clear planned goals and objectives for their job. Second statement indicates 55.9% of respondents strongly agree that they can count on their colleagues to listen to them when they need to talk about problems at work. Statement three indicates 37.1% of respondents disagree that they have developed serious physical illness such as back pain, muscle aches, high blood pressure and migraine because of their work nature offshore. Statement four and five have 33.6% respondents respectively disagreeing that they have started smoking or intend to smoke

more at work to relieve their perceived tension and stress as well as they have developed sleeping problems due to their work nature at offshore. 36.4% respondent disagree that they have become very aggressive and quick to anger, changing their personality from a calm and patience person after they have started working offshore (statement six). The final statement for the dependent value in occupational stress questionnaire indicates 30.1% of respondent feel neutral about that they are usually under a lot of pressure when they are at work.

No	Statements	1	2	3	4	5
		Value in %				
DV1	I have clear planned goals and objectives for my job	2.8	28.0	10.5	1.4	**57.3**
DV2	I can count on my colleagues to listen to me when I need to talk about problems at work.	3.5	18.9	16.8	4.9	**55.9**
DV3	I have developed serious physical illness such as back pain, muscle aches, high blood pressure and migraine because of my work nature offshore.	19.6	**37.1**	29.4	6.3	7.7
DV4	I have started smoking or intend to smoke more at work to relieve my perceived tension and stress.	15.4	**33.6**	23.1	7.0	21.0
DV5	I have developed sleeping problems due to my work nature at offshore	25.2	**33.6**	24.5	7.7	9.1
DV6	I have become very aggressive and quick to anger, changing my personality from a calm and patience person after I have started working offshore.	21.0	**36.4**	25.2	4.9	12.6
DV7	I am usually under a lot of pressure when I am at work.	37.1	18.9	**30.1**	10.5	3.5

**Note: 1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree*

Table 4.3 Itemized Questions for Occupational Stress (DV) in Row Percentage

Figure 4.1 shows the result of the distribution of dependent variable of the occupational stress. The mean score of the occupational stress variable is 20.22 with a standard deviation of 4.22. From Table 4.9, the median score is 20.0 whereas the graph's skewness is 0.131 and the graph's kurtosis is 0.425.

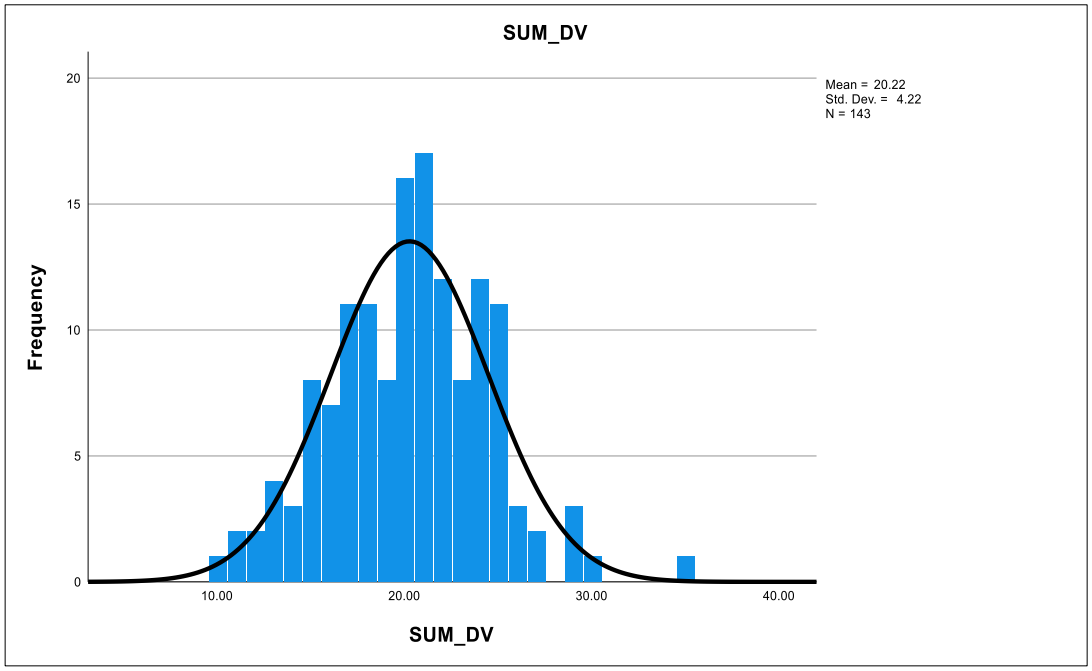

Figure 4.1 Distribution of Summation of Occupational Stress (DV1)

4.3.2 INTERFACE BETWEEN JOB AND SOCIAL LIFE (E)

Table 4.4 shows the respondent's result derived from the first independent value, interface between job and social life questionnaire's statement. Based on statement one indication, 43.3% of the respondents disagree that they are worried their marriage/love relationship will breakdown due to their nature of work offshore. Second statement indicates 28.0% of respondents strongly disagree that leaving their wife/partner to cope with situations at home while they are at work offshore often makes them worried and unable to focus 100% at work. Statement three indicates 37.8% of respondents strongly disagree that they are often worried about poor relationship with their children since they are always away from them due to their offshore rotation. Statement four have 34.3% respondents disagreeing that their social life is always disrupted since they are away offshore and they often feel unhappy about this situation. 43.4% respondent strongly disagree that they have limited privacy and limited opportunities for leisure activities while they are offshore (statement five).

No	Statements	1	2	3	4	5
		Value in %				
E1	I am worried my marriage/love relationship will breakdown due to my nature of work offshore	16.8	**43.4**	17.5	9.8	12.6
E2	Leaving my wife/partner to cope with situations at home while I am at work offshore often makes me worried and unable to focus 100% at work.	**28.0**	24.5	27.3	13.3	7.0
E3	I am often worried about poor relationship with my children since I am always away from them due to my offshore rotation.	**37.8**	21.0	21.7	14.0	5.6
E4	My social life is always disrupted since I am away offshore and I often feel unhappy about this situation.	30.1	**34.3**	16.8	14.0	4.9
E5	I have limited privacy and limited opportunities for leisure activities while I am offshore.	**43.4**	17.5	21.7	15.4	2.1

**Note: 1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree*

Table 4.4 Itemized Questions for interface between job and social life (E) in row Percentage

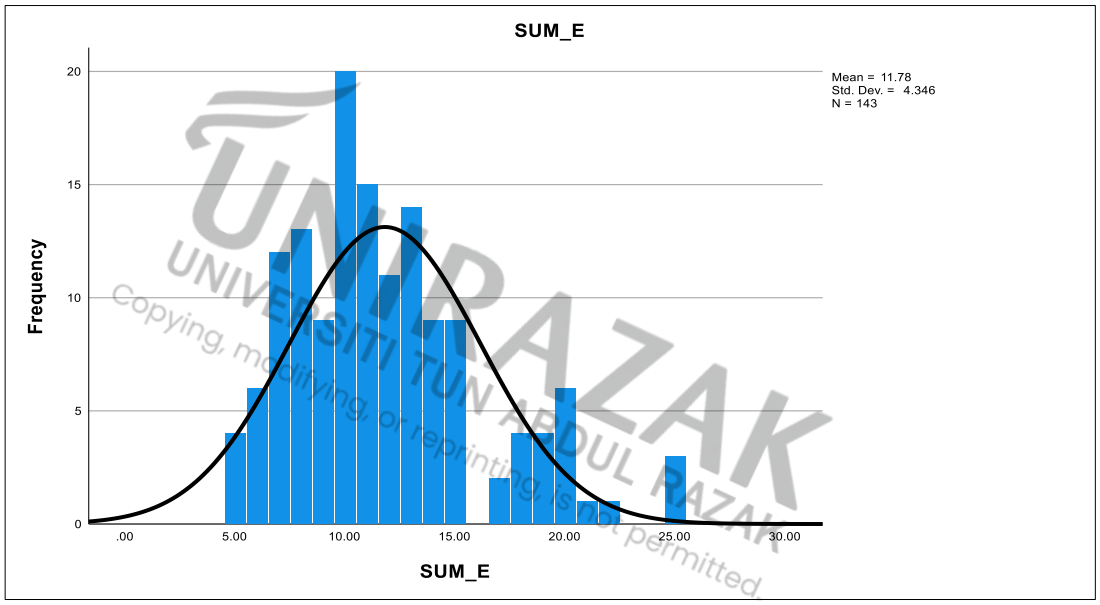

Figure 4.2 Distribution of Summation of Interface between Job and Social Life (E)

Figure 4.2 shows the result of the distribution of independent variable of the interface between job and social life. The mean score of this independent variable is 11.78 with a standard deviation of 4.346. From Table 4.9, the median score is 11.0 whereas the graph's skewness is 0.917 and the graph's kurtosis is 0.670.

4.3.3 PHYSICAL ENVIRONMENT AT OFFSHORE PLATFORMS (F)

No	Statements	1	2	3	4	5
		Value in %				
F1	There is an unpleasant working conditions due to noise, heat and vibration	32.9	18.9	**33.6**	10.5	4.2
F2	There is poor air circulation in the living accommodation.	18.2	**35.0**	32.9	7.0	7.0
F3	My rest is often disturbed because of sharing of living accommodation with others and/or noise from other sources and/or sharing room with opposite shift colleagues.	**34.3**	22.4	25.9	14.0	3.5
F4	I often feel disturbed by living with other colleagues having different lifestyle and behaviors.	27.3	25.2	**35.0**	9.8	2.8
F5	It is difficult to maintain a good hygiene at living and work areas.	24.5	**39.9**	23.1	5.6	7.0

**Note: 1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree*

Table 4.5 Itemized Questions for physical environment at offshore platform (F) in row Percentage

Table 4.5 shows the respondent's result derived from the second independent value, physical environment at offshore platform questionnaire's statement. Based on statement one, 33.6% of the respondents are neutral on indicating there is an unpleasant working conditions due to noise, heat and vibration. Second statement indicates 35.0% of respondents disagree that there is poor air circulation in the living accommodation. Statement three indicates 34.3% of respondents strongly disagree that their rest is often disturbed because of sharing of living accommodation with others and/or noise from other sources and/or sharing room with opposite shift colleagues. Statement four have 35.0% respondents being neutral that they often feel disturbed by living with other colleagues having different lifestyle and behaviors. 39.9% respondent disagree that it is difficult to maintain a good hygiene at living and work areas (statement five).

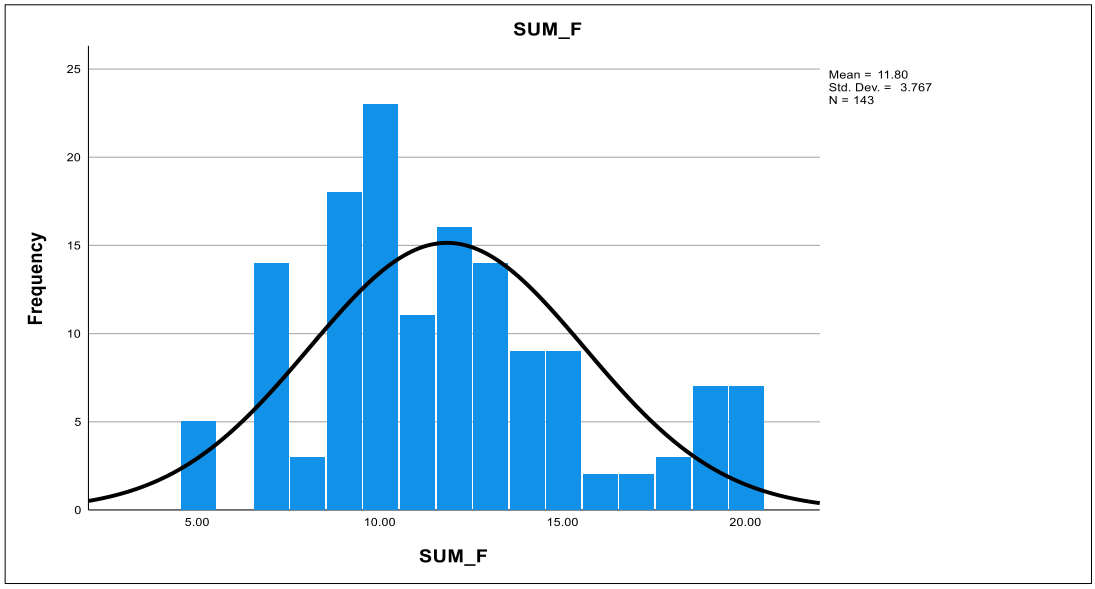

Figure 4.3 Distribution of Summation of physical environment at offshore platform (F)

Figure 4.3 shows the result of the distribution of independent variable of the physical environment at offshore platform (F). The mean score of this independent variable is 11.8 with a standard deviation of 3.767. From Table 4.9, the median score is 11.0 whereas the graph's skewness is 0.560 and the graph's kurtosis is -0.210

4.3.4 SAFETY & HEALTH HAZARDS (G)

No	Statements	1	2	3	4	5
		Value in %				
G1	I am worried about inadequate emergency response to accidents (e.g. fire, explosion) because of the access and distance from land.	**32.2**	24.5	27.3	8.4	7.7
G2	I lack confidence in offshore medical facilities.	22.4	29.4	**32.9**	8.4	7.0
G3	I always have the fear of travelling by helicopter and boats/vessels to/from work.	26.6	**31.5**	22.4	7.7	11.9
G4	I feel that my own and others' safety are at risk if I make a mistake.	**47.6**	7.0	16.1	27.3	2.1
G5	I am worried about accidents that may happen caused by my decision at work.	**46.9**	12.6	20.3	18.9	1.4
G6	I am worried that I may have health issues due to long exposures to offshore environment.	**37.8**	28.7	15.4	14.0	4.2
G7	The overall safety of the worksite and platform is exceptional and I am very comfortable working without any concern	1.4	9.8	**32.2**	14.7	42.0

**Note: 1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree*

Table 4.6 Itemized Questions for safety and health hazards (G) in row Percentage

Table 4.6 shows the respondent's result derived from the third independent value, physical environment at offshore platform questionnaire's statement. Based on statement one, 32.2% of the respondents strongly disagree that they are worried about inadequate emergency response to accidents (e.g. fire, explosion) because of the access and distance from land. Second statement indicates 32.9% of respondents are neutral that they lack confidence in offshore medical facilities. Statement three indicates 31.5% of respondents disagree that they always have the fear of travelling by helicopter and boats/vessels to/from work. Statement four, five and six have 47.6%, 46.9% and 37.8% respondents strongly disagree that they feel that their own and others' safety are at risk if they make a mistake, worried about accidents that may happen caused by their decision at work and worried that they may have health issues due to long exposures to offshore environment. Statement seven indicates 32.2% respondent are neutral on the overall safety of the worksite and platform that is exceptional and they are very comfortable working without any concern.

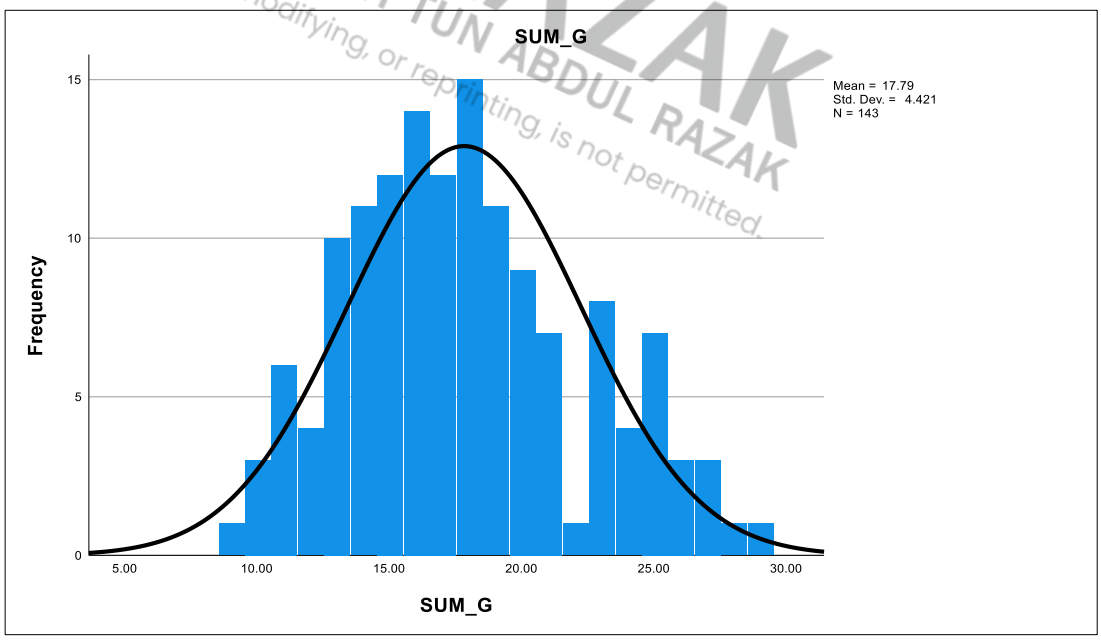

Figure 4.4 Distribution of Summation for safety and health hazards (G)

Figure 4.4 shows the result of the distribution of independent variable for safety and health hazards (G). The mean score of this independent variable is 17.79 with a standard deviation of 4.421. From Table 4.9, the median score is 17.0 whereas the graph's skewness is 0.398 and the graph's kurtosis is -0.438.

4.3.5 ORGANIZATIONAL STRUCTURE (H)

No	Statements	1	2	3	4	5
		Value in %				
H1	I often feel stressed because of the strict rules, guidelines and procedures that needs to be followed at all times which makes it difficult to work.	24.5	**32.2**	25.9	10.5	7.0
H2	14 day off/on rotation with alternating shift is making me stressed with insufficient sleep and rest and I often feel exhausted.	21.0	33.6	**36.4**	4.9	4.2
H3	The compensation and monetary reward does not tally with the work load I do.	**35.0**	15.4	18.9	30.1	0.7
H4	My immediate superior ask me for my opinion before making decisions affecting my work.	7.0	6.3	32.2	21.0	**33.6**

**Note: 1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree*

Table 4.7 Itemized Questions for Organizational structure (H) in Row Percentage

Table 4.7 shows the respondent's result derived from the fourth independent value, organizational structure questionnaire's statement. Based on statement one, 32.2% of the respondents disagree that they often feel stressed because of the strict rules, guidelines and procedures that needs to be followed at all times which makes it difficult to work. Second statement indicates 36.4% of respondents are neutral that 14 day off/on rotation with alternating shift is making them stressed with insufficient sleep and rest and they often feel exhausted. Statement three indicates 35.0% of respondents strongly disagree that the compensation and monetary reward does not tally with the work load they do. Statement five have 33.6% respondents strongly agree that their immediate superior asks them for their opinion before making decisions affecting their work.

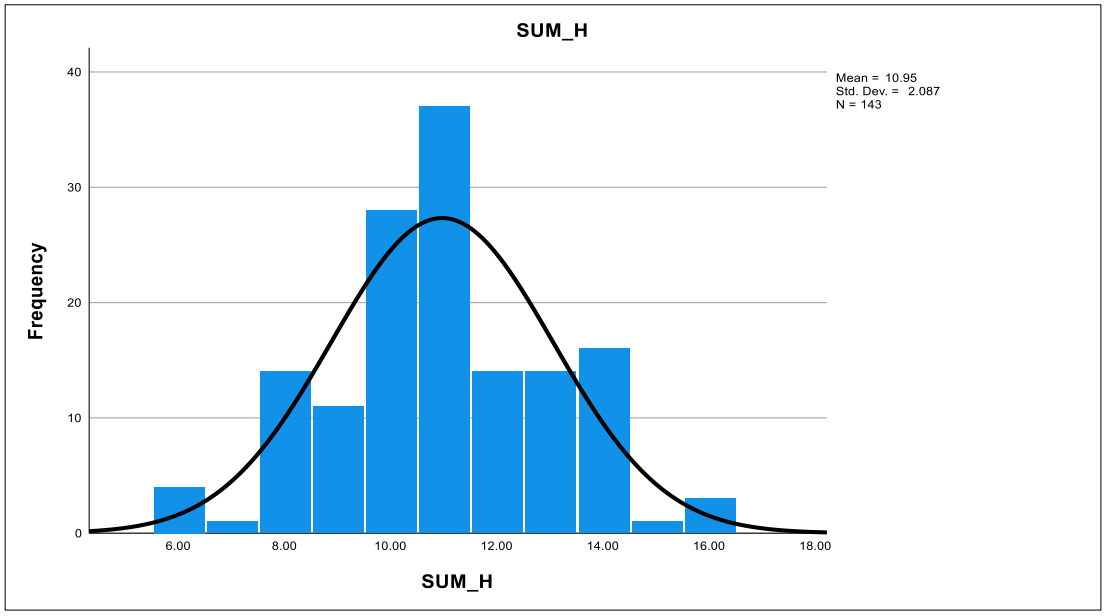

Figure 4.5 Distribution of Summation for organization structure (H)

Figure 4.5 shows the result of the distribution of independent variable for organization structure (H). The mean score of this independent variable is 10.95 with a standard deviation of 2.087. From Table 4.9, the median score is 11.0 whereas the graph's skewness is 0.023 and the graph's kurtosis is -0.063

4.3.6 COVID-19 IMPACT ON WORK ROTATION SCHEDULE (J)

No	Statements	1	2	3	4	5
		Value in %				
J1	The recent quarantine requirement pre/post work had brought distress and burden to me	**37.1**	7.7	16.1	**37.8**	1.4
J2	Due to the effects of C-19 pandemic and for business continuity, the organization had to take several drastic measure	25.9	6.3	21.0	**32.9**	14.0
J3	The compensation/reimbursement was just and fair for the changes in schedule/rotations that happened recently due to COVID-19	21.0	7.0	23.8	**24.5**	23.8
J4	Working during the COVID-19 pandemic/endemic had been generally stressful compared to before	0.0	34.3	8.4	9.1	**48.3**

**Note: 1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree*

Table 4.8 Itemized Questions for COVID-19 Impact on work rotation schedule (J) in Row Percentage

Table 4.8 shows the respondent's result derived from the fifth and final independent value, COVID-19 impact on work rotation schedule questionnaire's statement. Based on statement one, 37.8% of the respondents agree that the recent quarantine requirement pre/post work had brought distress and burden to them, however 37.1% strongly disagree to the statement. Second statement indicates 32.9% of respondents agree that due to the effects of C-19 pandemic and for business continuity, the organization had to take several drastic measure. Statement three indicates 24.5% of respondents agree that the compensation/reimbursement was just and fair for the changes in schedule/rotations that happened recently due to COVID-19. Statement four have 48.3% respondents strongly agree that working during the COVID-19 pandemic/endemic had been generally stressful compared to before.

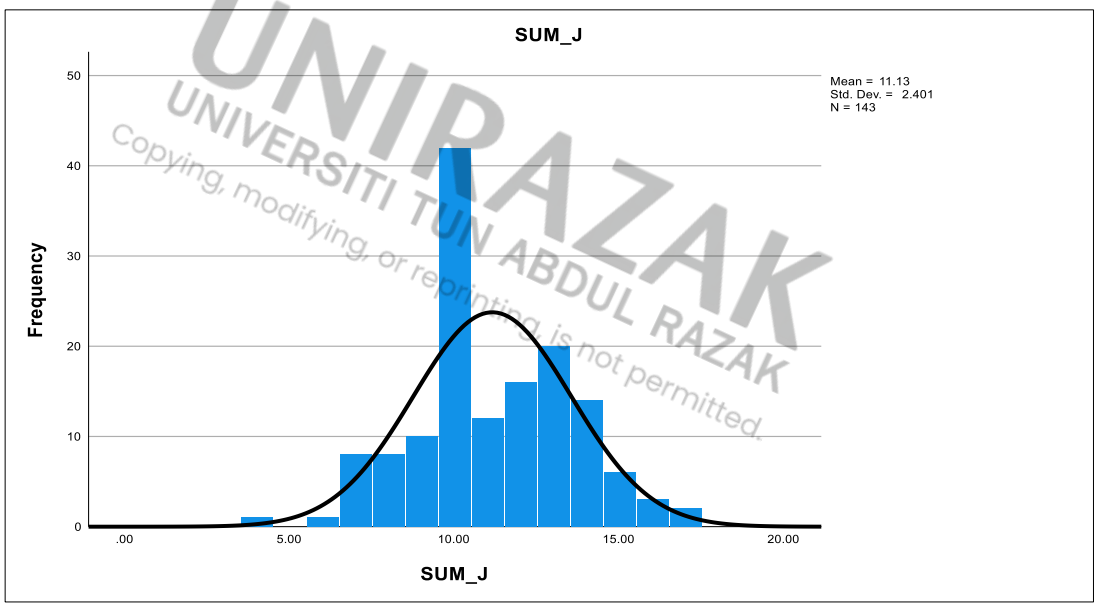

Figure 4.6 Distribution of Summation for COVID-19 Impact on work rotation schedule (J)

Figure 4.5 shows the result of the distribution of independent variable for COVID-19 Impact on work rotation schedule (J). The mean score of this independent variable is 11.13 with a standard deviation of 2.401. From Table 4.9, the median score is 11.0 whereas the graph's skewness is 0.052 and the graph's kurtosis is -0.133.

The table in the next page, Table 4.9 is the summation of all variables with the mean and median values as well as the skewness and kurtosis value for each graph/histogram for each variables to define the bell curve position.

Statistics for Variables Summation							
		SUM_DV	SUM_E	SUM_F	SUM_G	SUM_H	SUM_J
N	Valid	143	143	143	143	143	143
	Missing	0	0	0	0	0	0
Mean		20.2168	11.7832	11.8042	17.7902	10.951	11.1329
Median		20	11	11	17	11	11
Skewness		0.131	0.917	0.56	0.398	0.023	0.052
Std. Error of Skewness		0.203	0.203	0.203	0.203	0.203	0.203
Kurtosis		0.425	0.67	-0.21	-0.438	-0.063	-0.133
Std. Error of Kurtosis		0.403	0.403	0.403	0.403	0.403	0.403

Table 4.9: Statistics for Variables Summation

4.4 RELIABILITY ANALYSIS USING CRONBACH ALPHA

Cronbach's Alpha (α)	Internal Consistency
Less than 0.6 (< 0.6)	Poor
0.6 to Less than 0.7 (0.6 - < 0.7)	Moderate
0.7 to Less than 0.8 (0.7 - < 0.8)	Good
0.8 to Less than 0.9 (0.8 - < 0.9)	Very Good
More or equals to 0.9 (≥ 0.9)	Excellent

Table 4.10: Interpretation of Cronbach's Alpha

According to Hair Jr., Black, Babin, & Anderson (2014), the range of Cronbach's alpha should be in between 0 to 1 with minimum acceptable limit of 0.7. The value below 0.6 is considered poor internal consistency. Reliability is a measurement that is established in testing both the consistency and stability. Cronbach's Alpha is "a reliability coefficient that indicates how well the items in a set are positively correlated to one another." (Sekaran and Bougie, 2013).

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.7565	0.7621	6.000

Table 4.11: Cronbach's Alpha for overall Occupational Stress Scale

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
SUM_E	64.8322	197.986	0.564	0.426	0.702
SUM_F	64.8112	211.746	0.546	0.348	0.710
SUM_G	60.5455	172.461	0.683	0.471	0.662
SUM_H	67.0210	224.133	0.575	0.347	0.713
SUM_J	66.0000	242.817	0.204	0.168	0.793
SUM_DV	59.8671	199.736	0.486	0.308	0.726

Table 4.12: Cronbach's Alpha for all 5 Independent Variables towards Occupational Stress

The overall Cronbach Alpha for Occupational Stress as per Table 4.11 obtained was 0.7565 which is considered as a good internal consistency. An interesting observation on the questionnaire scale is if Independent Variable of COVID-19 impact on work rotation (J) is deleted from the questionnaire, the reliability of the questionnaire will have a higher value of Cronbach Alpha at 0.793, as shown in Table 4.12.

4.5 PEARSON CORRELATION ANALYSIS

The Pearson correlation measures the strength of the linear relationship between two variables. It has a value between -1 to 1, with a value of -1 meaning a total negative linear correlation, 0 being no correlation, and + 1 meaning a total positive correlation. The strength of the relationship is defined as per the table above from Pearson Correlation strength of relationship that explains how dependable the independent variables are with the dependent variable.

R	Strength of Relationship
<0.20	Almost negligible
0.20 – 0.39	Low correlations, definite but small relationship
0.40 – 0.69	Moderate correlation with substantial relationship
0.70 – 0.89	High correlation; marked relationship
>0.90	Very high correlation; very dependable relationship

Table 4.13: Correlation Table

Table 4.13 shows the relationship coefficient between independent variables with independent variables itself, including interface between job and social life, physical environment at offshore platform, safety and health hazard, organizational structure and COVID-19 impact on work rotation, and also these independent variables with dependent variable of occupational stress. The tested variables all show a positive relationship except independent variable (J), Covid-19 impact on work rotation schedule.

Correlations						
	SUM_E	SUM_F	SUM_G	SUM_H	SUM_J	SUM_DV
SUM_E	1					
SUM_F	.530**	1				
SUM_G	.525**	.483**	1			
SUM_H	.384**	.352**	.500**	1		
SUM_J	0.027	0.154	.259**	.335**	1	
SUM_DV	.439**	.331**	.487**	.375**	0.039	1

**. Correlation is significant at the 0.01 level (2-tailed).

Note: *** = p < 0.001, ** = p < 0.01, * = p < 0.05

Table 4.14: Pearson Correlation Table

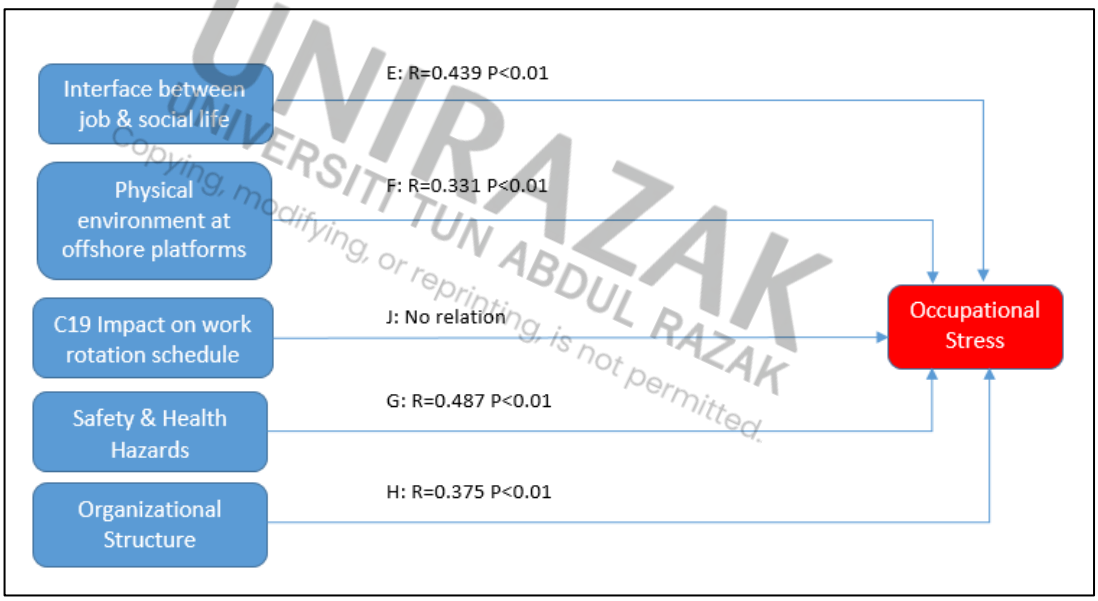

Figure 4.7: Pearson Correlation for selected independent variable with Occupational Stress

The strongest relationship of independent variable with dependent variable is between safety and health hazard (G) at 0.487 and interface between job and social life (E) at 0.439 with occupational stress (DV). All though it shows the strongest relationship of all the other variables, their correlation is in a moderate level with substantial relationship. The relationship of independent variables physical environment at offshore platform (F) and organizational structure (H) only have values of 0.331 and 0.375 respectively, with low correlations and definite but small relationship.

This indicates that the participants are mostly concern on safety and health hazards as well as interface between job and social life that affects their occupational stress at offshore. The physical environment at offshore platform and organizational structure do have some impact on occupational stress but not as much as predicted. COVID-19 impact on work rotation does not have impact on occupational stress offshore at all.

4.6 MULTIPLE REGRESSION ANALYSIS

Table 4.15 shows the multiple regression analysis model summary for occupational stress in offshore and the adjusted R square value is 0.283. Based on Table 4.16, the ANOVA analysis shows the significant value is <0.001 which is <0.05, hence this model is acceptable. Table 4.17 analyzed the coefficients and out of five independent variables, only two variables significantly contribute towards the dependent variable (occupational stress) namely interface between job and social life (E) and safety and health hazards (G) with values of significance <0.05. Hence independent variables physical environment at offshore platform (F), organizational structure (H) and COVID-19 impact on work rotation schedule (J) are not predictors.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.555[a]	0.308	0.283	3.95940

Table 4.15: Regression Analysis Model Summary

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	955.210	5	191.042	12.186	<.001[b]
	Residual	2147.727	137	15.677		
	Total	3102.937	142			

Table 4.16: ANOVA Table

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.876	1.467		5.370	0.000
	SUM_E	0.211	0.099	0.196	2.125	0.035
	SUM_F	0.042	0.109	0.034	0.388	0.698
	SUM_G	0.293	0.089	0.311	3.308	0.001
	SUM_H	0.259	0.133	0.168	1.942	0.054
	SUM_J	-0.124	0.088	-0.109	-1.404	0.163

Table 4.17: Regression Analysis Coefficients

The F statistic for the overall goodness of fit of model is 12.186, which is significant at $P<0.01$. After excluding the non-significant variable, the final regression model produced by enter method for occupational stress is:

Occupational Stress = 7.876 + 0.211 (interface between job and social life) + 0.293 (safety and health hazards)

This model explains 30.8% of the variance in occupational stress offshore. This indicates that 30.8% of the dependent variable (occupational stress) was explained by the linear combination of the two predictor variables. Of the two-predictor variables, safety and health hazards was found to contribute more significantly towards the occupational stress offshore. This explains that the more the safety and health hazards offshore, the higher the occupational stress is felt by the offshore workers (respondents).

4.7 HYPOTHESIS TESTING

NO	Hypothesis Statement	Results	Hypothesis State
H1	There is a significant relationship between interface between job and social life with occupational stress.	r=0.439 ; P<0.01	Hypothesis Accepted
H2	There is a significant relationship between physical environment at offshore platforms with occupational stress.	r=0.331 ; P<0.01	Hypothesis Accepted
H3	There is a significant relationship between COVID-19 impact on work rotation schedule with occupational stress.	r=0.039 ; P>0.01	Hypothesis Rejected
H4	There is a significant relationship between safety and health hazards with occupational stress.	r=0.487 ; P<0.01	Hypothesis Accepted
H5	There is a significant relationship between organizational structure with occupational stress.	r=0.375 ; P<0.01	Hypothesis Accepted

Table 4.18: Hypothesis Testing

Table 4.18 shows the summary result of the hypothesis testing for this study on occupational stress offshore Malaysia. In the hypothesis testing, the p value of the hypothesis is significant, where p value < 0.01. For all the above stated hypothesis, H3 was rejected while H1, H2, H4 and H5 were accepted. This indicates that the interface between job and social life, physical environment at offshore platforms, safety and health hazards as well as organizational stress are significant to a certain extend towards occupational stress.

4.8 SUMMARY OF CHAPTER 4

This chapter analyzes the field survey data from questionnaires and encapsulates the findings for the study. This chapter extensively discusses the Reliability Analysis, Descriptive Analysis, Frequency Distribution Analysis, Correlation Analysis and Multiple Regression Analysis used to analyze the data. It also explains the validity of data as well as acceptance or rejections of the hypotheses.

CHAPTER 5: DISCUSSION & CONCLUSION

5.1 CONCLUSION

Working in the oil and gas industry is a stressful job since workers are exposed to various chemical hazards, hazardous work materials/substances, gases, vapors, fumes, and aerosols, fire, explosives, electricity, falls, working in unfavorable microclimates that is affected by atmospheric influences throughout the year, by major physical strain, and high noise levels. It involves a high risk of accidents (cord breaking, explosion) that may lead to wrecking of platforms. Workers on oil fields are frequently exposed to stressful conditions or to permanent psychic tension. Long-term stay in an isolated area also contributes to the work stress as they are often separated from family, social life and basically spending half their lives in the middle of the sea or remote areas. Workers with occupational stress can be led into unusual and dysfunctional behavior at work which subsequently contributes to poor physical and mental health. This results in employee performance drop at work, absenteeism and creating error prone situations that is costly to the oil and gas organization.

This research study was aimed to understand the stressors affecting the occupational stress in the oil and gas industry in Malaysia. Of several factors that was done in other researches, only five independent variables were selected namely interface between job and social life, physical environment at offshore platforms, COVID-19 impact on work rotation schedule, safety and health hazards and organizational structure.

An extensive study had been conducted during literature review to understand the significance of the stressors to the occupational stress and based on the study, the five independent variables had been selected by the researcher that will suit the context for Malaysian oil and gas industry.

This research study also investigated how these contributed towards the occupational stress. In addition, despite of looking into the determinants of the variable, demographic was also part of the research contents. Due to the sampling methodology used, specific demographic profile such as age, gender, highest education level, employment status and working experience was included as part of the research design.

Of the five selected independent variables in this research that relates to occupational stress in oil and gas industry in Malaysia, results show that only four variables have a positive relationship with the dependent variable based on numerous tests conducted. Based on the Hypothesis testing that was done, interface between job and social life, physical environment at offshore platforms, safety and health hazards as well as organizational structure have relationship with occupational stress and these hypothesis are accepted. One of the factor, COVID-19 impact on work rotation schedule do not have a relationship with occupational stress and the hypothesis is rejected. Among the accepted factors, safety and health hazards has the greatest impact (r=0.487) followed by interface between job and social life (r=0.439), both with moderate correlation with substantial relationship. The next factors in line that has low correlations and definite but small relationship with occupational stress are organizational structure (r=0.375) followed by physical environment at offshore platform (r=0.331). COVID-19 impact on work rotation schedule do not have a relationship with the dependent variable (r=0.039) with P>0.01. However, based on multiple regression analysis, out of five independent variables, only two variables significantly contribute towards the dependent variable (occupational stress) namely interface between job and social life (β=0.196) and safety and health hazards (β=0.311) with values of significance <0.05.

From the study, it is prudent to prove that the most significant factor that contributes to the occupational stress based on this research is the safety and health hazards that is related to

their work. The constant worries of inadequate emergency response to accidents (e.g. fire, explosion) because of the access and distance from land, fear of travelling by helicopter and boats/vessels to/from work and the conscience of feeling that their own and others' safety are at risk if they make a mistake as well as worrying about accidents that may happen caused by their decision at work are the detailed in depth influences to the safety and health hazards in general.

The second most significant factor is the interface between job and social life that strongly relates to the occupational stress especially in the area where workers are worried their marriage/love relationship will breakdown due to the nature of work offshore and leaving behind their wife/partner to cope with situations at home while they are at work offshore often makes them worried and unable to focus 100% at work. Workers offshore are also often worried about poor relationship with their children since they are always away from them due to their offshore rotation. Feeling of their social life is always disrupted add to the wound as well apart from having limited privacy and limited opportunities for leisure activities while they are offshore.

The factor COVID-19 impact on work rotation schedule was proven to be irrelevant and do not have a valid relationship to occupational stress to offshore employees. Since the researcher was one of the offshore employee who had a strong feeling that this factor may be a great impact and would have had a strong relationship to occupational stress, it was proven otherwise. During the COVID-19 and post pandemic duration, work rotation was changed from two weeks to four to five weeks work. Off days was limited and no proper compensation was given. However, the fact that the COVID-19 impact on work rotation schedule did not have a binding effect to occupational stress is perhaps, the participants had fear of revealing

the truth that may affect their job security, thinking that the survey done anonymously could somehow be exposed to management.

These findings from this research suggest that the management of the offshore organizations should pay more attention regarding individual and management factors that contribute to the occupational stress within the industry. They should plan an efficient and effective stress management program based on the suggested factors. If the offshore employees are persistently exposed to the stress, it could stimulate many other associated problems including physical and mental health that could lead to disrupted work focus, lack of motivation, decrease in job performance and possible fatal safety incidents that could cost a disaster for the organization and the industry.

It is believed that by providing a conducive and save working environment, good interpersonal relationship, sufficient time away from work for offshore employees and prudent management style may initiate minimal occupational stress and lead to increase their work performance.

5.2 COMPARISON WITH PREVIOUS STUDIES

Cooper and Sutherland (1987) and Sutherland and Cooper (1996) reported two studies on occupational stress in the offshore oil industry using a similar questionnaire in the UK, which identified seven and eight factors respectively. Using the OSS developed from their questionnaires, the researcher identified five factors (source of stress). Comparing the results obtained in this research with theirs, it is found that there were four factors that were common in all three studies. Another comparison of the research with Determinants of perceived occupational stress among Chinese offshore oil workers by Wei-Qing Chen, Tze-Wai Wong et all (2003) using the similar questionnaire showed two factors that were common in both the

studies. The factors included in this study had clear and precise implication to Occupational stress among offshore Oil & Gas employees in Malaysia. A total of 30.8% of total variance could be explained by the factors identified in this study which is slightly lesser than 45.1% and 49.4% reported in Cooper's first and second study. However, the variance difference compared to the study by Wei-Qing Chen, Tze-Wai Wong and all showed 62.3% of total variance among Chinese offshore oil workers which is more than half of what is obtained in this study.

Similar Factors	Occupational Stress In The Offshore Oil Industry in UK by Cooper and Sutherland (1987,1996)	Occupational stress among offshore Oil & Gas employees in Malaysia by Ravindra Vengadesan (2022)
1	Safety	Safety and health hazards
2	Interface between job and family	Interface between job and social life
3	Living in environment	Physical environment at offshore platforms
	Physical Conditions	
4	Organizational Structure and climates	Organizational Structure

Table 5.1: Comparison with Occupational Stress Study in UK

Similar Factors	Determinants of perceived occupational stress among Chinese offshore oil workers by Wei-Qing Chen, Tze-Wai Wong et all (2003)	Occupational stress among offshore Oil & Gas employees in Malaysia by Ravindra Vengadesan (2022)
1	Safety	Safety and health hazards
2	Interface between job and social life	Interface between job and social life
	Family life	

Table 5.2: Comparison with Occupational Stress Study in China

5.3 STRENGTH OF THE STUDY

This is the first comprehensive study on occupational stress in oil and gas industry in Malaysia that covers both the East and West coast including COVID-19 impact. The questionnaire that was adapted from previous research on offshore oil workers at the North Sea oil field in the UK (Cooper & Sutherland, 1987; Sutherland & Cooper, 1996) was highly specific for this occupational group. There was no systematic difference between the sample of workers resting on land and those who were working offshore. The response rate was high at 71.5% hence selection bias was minimal. The sample size of 143 was more than sufficient for this statistical method, according to the criterion suggested by Taro Yamane [56]. This is also the first study that was done using the adopted questionnaire in bilingual (English and Malay language) format to accommodate the majority of Malaysian oil and gas employees and contractors who do not have English as their first language in the identified organization. The questionnaire was translated from English to Malay and the translation draft was verified by a local linguistic expert who is fluent in both the language.

5.4 LIMITATIONS OF THE STUDY

There are several limitation in this research. The population of oil and gas industry in Malaysia is about 3000 employees and number of service contractors. The sample population obtained was only 143. Although it is valid based on Taro Yamane's theory, the feedback may have different implications from various employees throughout Malaysian oil and gas industry covering both East and West Malaysia.

In the questionnaire design, there were only five factors for perceived occupational stressors that the participants were tested for and the researcher did not sought for suggestions for any

additional occupational stressors that may have been a bigger factor in the oil and gas industry in Malaysia that may be affecting the occupational stress. As with all cross-sectional studies, the stability of the questionnaire could not be assessed as well and no pilot testing was done to include or exclude the factors that may have altered the Cronbach Alpha to improve the reliability of the study.

The use of a self-administered questionnaire might have led to information bias such as exaggeration of occupational stress and the respondents may have used the opportunity to prompt the management to improve their working conditions or their compensation for the bad working conditions. AT the same time, in a reverse manner, there may have been bias for the respondents to omit certain truth in answering the questionnaire in fear that management may take actions against them if the survey results were against the interest of management, although it has been clearly stated that all questionnaires are anonymous and the sole purpose is for research objective only.

5.2 FUTURE RESEARCH STUDIES

Future research should plan for a better strategy to eliminate ot at least minimize the information bias and conduct the research to a broader sample population in order to validate the findings more precisely. A pilot questionnaire should be included prior to the research with more factors that can be found from previous studies in order to broaden the horizon of the study scope. Mediator and moderator variables should be tested in order to study the deviation of data based on age group, employment period, education level and job position to understand the effects of such variables towards occupational stress.

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APPENDICES

APPENDIX A: QUESTIONNAIRE IN ENGLISH LANGUAGE

Occupational stress among offshore Oil & Gas employees in Malaysia

Dear Participants,

I am currently conducting a research in Occupational Stress (OS) among offshore oil & gas employees in Malaysia. The purpose of this research is purely academic and focus will only be driven towards the outcome of the results. The data analysis will be conducted in an ethical manner considering the interest of all parties involved. All data collected will be anonymous and will not be disclosed or sold to any third party for commercial purposes. Your privacy would be retained and will not be traceable to any individual respondent and would be kept strictly confidential. You will be asked questions regarding the occupational stress factors at your workplace and specific instructions will be given at each section. The entire survey will take less than 5 minutes. Kindly complete the questionnaire by answering all questions in each section. I would like to thank you in advance for taking part in this survey and sparing your time to answer the questionnaire. Your participation in this survey is critical to the success of this study.

Yours sincerely,

Ravindra Vengadesan

I have read and understood the information provided to me here and I voluntarily agree to participate in this research.

- o Yes

PART A: PARTICIPANT'S PROFILE

Instruction: Please tick the box corresponding to the category that most closely represents yourself.

Gender

- o Male
- o Female

Age Group

- o Less than 21 Years old
- o 21 – 30 Years old
- o 31 – 40 Years old
- o 41 – 50 Years old
- o 51 – 60 Years old
- o More than 61 Years old

Highest Education Level

- o PhD / DBA
- o Masters Degree
- o Bachelor's Degree
- o Diploma
- o Secondary School

Years of Service

- 5 Years and below
- 6 – 15 Years
- 16 – 25 Years
- More than 25 Years

Position

- Managerial
- First Line Supervisor
- Engineer
- Technician
- Roustabout/Helper/Crew/Others

PART B: OCCUPATIONAL STRESS AT WORK

Instruction: Please tick the box corresponding to the category that most closely represents yourself.

1. I have clear planned goals and objectives for my job.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

2. I can count on my colleagues to listen to me when I need to talk about problems at work.

- Strongly Disagree
- Disagree
- Neutral

- Agree
- Strongly Agree

3. I have developed serious physical illness such as back pain, muscle aches, high blood pressure and migraine because of my work nature offshore.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

4. I have started smoking or intend to smoke more at work to relieve my perceived tension and stress.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

5. I have developed sleeping problems due to my work nature at offshore.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

6. I have become very aggressive and quick to anger, changing my personality from a calm and patience person after I have started working offshore.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

7. I am usually under a lot of pressure when I am at work.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

PART C: INTERFACE BETWEEN JOB AND SOCIAL LIFE

Instruction: Please tick the box corresponding to the category that most closely represents yourself.

8. I am worried my marriage/love relationship will breakdown due to my nature of work offshore

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

9. Leaving my wife/partner to cope with situations at home while I am at work offshore often makes me worried and unable to focus 100% at work.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

10. I am often worried about poor relationship with my children since I am always away from them due to my offshore rotation.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

11. My social life is always disrupted since I am away offshore and I often feel unhappy about this situation.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

12. I have limited privacy and limited opportunities for leisure activities while I am offshore.

- Strongly Disagree
- Disagree

- Neutral
- Agree
- Strongly Agree

PART D: PHYSICAL ENVIRONMENT AT OFFSHORE PLATFORMS

Instruction: Please tick the box corresponding to the category that most closely represents yourself.

13. There is an unpleasant working conditions due to noise, heat and vibration

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

14. There is poor air circulation in the living accommodation.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

15. My rest is often disturbed because of sharing of living accommodation with others and/or noise from other sources and/or sharing room with opposite shift colleagues.

- Strongly Disagree
- Disagree
- Neutral
- Agree

- Strongly Agree

16. I often feel disturbed by living with other colleagues having different lifestyle and behaviors.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

17. It is difficult to maintain a good hygiene at living and work areas.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

PART E: SAFETY AND HEALTH HAZARDS

Instruction: Please tick the box corresponding to the category that most closely represents yourself.

18. I am worried about inadequate emergency response to accidents (e.g. fire, explosion) because of the access and distance from land.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

19. I lack confidence in offshore medical facilities.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

20. I always have the fear of travelling by helicopter and boats/vessels to/from work.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

21. I feel that my own and others' safety are at risk if I make a mistake.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

22. I am worried about accidents that may happen caused by my decision at work.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

23. I am worried that I may have health issues due to long exposures to offshore environment.

- o Strongly Disagree
- o Disagree
- o Neutral
- o Agree
- o Strongly Agree

24. The overall safety of the worksite and platform is exceptional and I am very comfortable working without any concern.

- o Strongly Disagree
- o Disagree
- o Neutral
- o Agree
- o Strongly Agree

PART F: ORGANIZATIONAL STRUCTURE

Instruction: Please tick the box corresponding to the category that most closely represents yourself.

25. I often feel stressed because of the strict rules, guidelines and procedures that needs to be followed at all times which makes it difficult to work.

- o Strongly Disagree
- o Disagree
- o Neutral

- Agree
- Strongly Agree

26. 14 day off/on rotation with alternating shift is making me stressed with insufficient sleep and rest and I often feel exhausted.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

27. The compensation and monetary reward does not tally with the work load I do.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

28. My immediate superior ask me for my opinion before making decisions affecting my work.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

PART G: COVID-19 IMPACT ON WORK ROTATION SCHEDULE

Instruction: Please tick the box corresponding to the category that most closely represents yourself.

NOTE: Please answer the questions below based on the situations during COVID-19 pandemic

29. The recent quarantine requirement pre/post work had brought distress and burden to me

- o Strongly Disagree
- o Disagree
- o Neutral
- o Agree
- o Strongly Agree

30. Due to the effects of C-19 pandemic and for business continuity, the organization had to take several drastic measures. I am happy with the changes in my schedule (eg; inconsistent schedule, longer rotations, irregular crew change days, etc.)

- o Strongly Disagree
- o Disagree
- o Neutral
- o Agree
- o Strongly Agree

31. The compensation/reimbursement was just and fair for the changes in schedule/rotations that happened recently due to the C-19 pandemic and I am pleased to continue to work without any mental stress.

- o Strongly Disagree
- o Disagree

- Neutral
- Agree
- Strongly Agree

32. Working during the COVID-19 pandemic/endemic had been generally stressful compared to before

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

THE END. THANKS FOR PARTICIPATING

APPENDIX B: QUESTIONNAIRE IN MALAY LANGUAGE

Occupational stress among offshore Oil & Gas employees in Malaysia

(Tekanan pekerjaan di kalangan pekerja Minyak & Gas luar pesisir di Malaysia)

Peserta yang dihormati,

Saya sedang menjalankan penyelidikan dalam "Tekanan Pekerjaan di kalangan pekerja minyak & gas luar pesisir di Malaysia" (Occupational stress among offshore Oil & Gas employees in Malaysia). Tujuan penyelidikan ini khusus untuk akademik sahaja dan tumpuan hanya akan didorong ke arah hasil keputusan. Analisis data akan dijalankan secara beretika dengan mengambil kira kepentingan semua pihak yang terlibat. Semua data yang dikumpul adalah tanpa nama dan tidak akan didedahkan atau dijual kepada mana-mana pihak ketiga untuk tujuan komersial. Privasi anda akan dikekalkan dan tidak akan dapat dikesan kepada mana-mana responden individu dan akan dirahsiakan sepenuhnya. Anda akan ditanya soalan mengenai faktor tekanan pekerjaan di tempat kerja anda dan arahan khusus akan diberikan pada setiap bahagian. Keseluruhan tinjauan akan mengambil masa kurang daripada 5 minit. Sila lengkapkan soal selidik dengan menjawab semua soalan dalam setiap bahagian. Saya ingin mengucapkan terima kasih terlebih dahulu kerana mengambil bahagian dalam tinjauan ini dan meluangkan masa anda untuk menjawab soal selidik. Penyertaan anda dalam tinjauan ini adalah penting untuk kejayaan kajian ini.

Yang ikhlas,

Ravindra Vengadesan

Saya telah membaca dan memahami maklumat yang diberikan kepada saya di sini dan saya secara sukarela bersetuju untuk mengambil bahagian dalam penyelidikan ini.

- o Ya

BAHAGIAN A: PROFIL PESERTA

Arahan: Sila tandakan kotak yang sepadan dengan kategori yang paling hampir mewakili diri anda.

Jantina

- o Lelaki
- o Perempuan

Kumpulan umur

- o Berumur kurang daripada 21 Tahun
- o 21 – 30 Tahun
- o 31 – 40 Tahun
- o 41 – 50 Tahun
- o 51 – 60 Tahun
- o Berumur lebih daripada 61 Tahun

Peringkat Pendidikan Tertinggi

- o PhD / DBA
- o Ijazah Sarjana (Masters)
- o Ijazah Sarjana Muda (Degree)
- o Diploma
- o Sekolah Menengah

Tahun Perkhidmatan

- o 5 Tahun dan ke bawah

- 6 – 15 Tahun
- 16 – 25 Tahun
- Lebih daripada 25 Tahun

Kedudukan

- Pengurusan
- Penyelia Barisan Pertama (FLS)
- Jurutera
- Juruteknik
- Roustabout/Helper/Crew/Lain-lain

BAHAGIAN B: TEKANAN PEKERJAAN DI KERJA

Arahan: Sila tandakan kotak yang sepadan dengan kategori yang paling hampir mewakili diri anda.

1. Saya mempunyai matlamat dan objektif yang dirancang dengan jelas untuk pekerjaan saya.
   - Sangat Tidak Setuju
   - Tidak setuju
   - Berkecuali
   - Setuju
   - Sangat Setuju

2. Saya boleh mengharapkan rakan sekerja saya untuk mendengar saya apabila saya perlu bercakap tentang masalah di tempat kerja.

- Sangat Tidak Setuju
- Tidak Setuju
- Berkecuali

- Setuju
- Sangat Setuju

3. Saya telah mengalami penyakit fizikal yang serius seperti sakit belakang, sakit otot, darah tinggi dan migrain kerana saya bekerja di luar pesisir.

- Sangat Tidak Setuju
- Tidak Setuju
- Berkecuali
- Setuju
- Sangat Setuju

4. Saya telah mula merokok atau berniat untuk merokok lebih banyak di tempat kerja untuk melegakan ketegangan dan tekanan yang saya rasa.

- Sangat Tidak Setuju
- Tidak Setuju
- Berkecuali
- Setuju
- Sangat Setuju

5. Saya mengalami masalah tidur kerana sifat kerja luar pesisir saya

- Sangat Tidak Setuju
- Tidak Setuju
- Berkecuali
- Setuju
- Sangat Setuju

6. Saya menjadi sangat agresif dan cepat marah, mengubah personaliti saya daripada seorang yang tenang dan sabar selepas saya mula bekerja di luar pesisir.

- Sangat Tidak Setuju
- Tidak Setuju
- Berkecuali
- Setuju
- Sangat Setuju

7. Saya biasanya berada di bawah banyak tekanan apabila saya bekerja.

- Sangat Tidak Setuju
- Tidak Setuju
- Berkecuali
- Setuju
- Sangat Setuju

BAHAGIAN C: PEKERJAAN DAN KEHIDUPAN SOSIAL

Arahan: Sila tandakan kotak yang sepadan dengan kategori yang paling hampir mewakili diri anda.

8. Saya bimbang hubungan perkahwinan/cinta saya akan mengalami kesulitan kerana sifat saya bekerja di luar pesisir

- Sangat Tidak Setuju
- Tidak Setuju
- Berkecuali
- Setuju
- Sangat Setuju

9. Meninggalkan isteri/pasangan untuk menghadapi situasi di rumah semasa saya bekerja di luar pesisir sering membuatkan saya bimbang dan tidak dapat memberi tumpuan 100% di tempat kerja.

o Sangat Tidak Setuju
o Tidak Setuju
o Berkecuali
o Setuju
o Sangat Setuju

10. Saya sering bimbang tentang hubungan yang tidak baik dengan anak-anak saya kerana saya sentiasa berjauhan dengan mereka kerana pusingan luar pesisir saya.

o Sangat Tidak Setuju
o Tidak Setuju
o Berkecuali
o Setuju
o Sangat Setuju

11. Kehidupan sosial saya sentiasa terganggu kerana saya berada di luar pesisir dan saya sering berasa tidak senang dengan keadaan ini.

o Sangat Tidak Setuju
o Tidak Setuju
o Berkecuali
o Setuju
o Sangat Setuju

12. Saya mempunyai privasi terhad dan peluang terhad untuk aktiviti masa lapang semasa saya berada di luar pesisir.

o Sangat Tidak Setuju

- Tidak Setuju
- Berkecuali
- Setuju
- Sangat Setuju

BAHAGIAN D: PERSEKITARAN FIZIKAL DI PLATFORM LUAR PESISIR

Arahan: Sila tandakan kotak yang sepadan dengan kategori yang paling hampir mewakili diri anda.

13. Keadaan kerja tidak menyenangkan kerana bunyi bising, haba dan getaran
- Sangat Tidak Setuju
- Tidak Setuju
- Berkecuali
- Setuju
- Sangat Setuju

14. Peredaran udara agak lemah di tempat tinggal (Kuarters)
- Sangat Tidak Setuju
- Tidak Setuju
- Berkecuali
- Setuju
- Sangat Setuju

15. Rehat saya sering terganggu kerana berkongsi tempat tinggal dengan orang lain dan/atau bunyi bising dari sumber lain dan/atau berkongsi bilik dengan rakan sekerja syif bertentangan.
- Sangat Tidak Setuju
- Tidak Setuju

- Berkecuali
- Setuju
- Sangat Setuju

16. Saya sering merasa terganggu semasa tinggal bersama/sebilik dengan rakan sekerja lain yang mempunyai gaya hidup dan tingkah laku yang berbeza.

- Sangat Tidak Setuju
- Tidak Setuju
- Berkecuali
- Setuju
- Sangat Setuju

17. Agar sukar untuk mengekalkan kebersihan yang baik di tempat tinggal dan tempat kerja di luar pesisir.

- Sangat Tidak Setuju
- Tidak Setuju
- Berkecuali
- Setuju
- Sangat Setuju

BAHAGIAN E: BAHAYA KESELAMATAN DAN KESIHATAN

Arahan: Sila tandakan kotak yang sepadan dengan kategori yang paling hampir mewakili diri anda.

18. Saya bimbang tentang tindak balas kecemasan yang tidak mencukupi untuk kemalangan (cth. kebakaran, letupan) kerana akses dan jarak dari darat ke pelantar.

- Sangat Tidak Setuju
- Tidak Setuju

- Berkecuali
- Setuju
- Sangat Setuju

19. Saya kurang yakin terhadap kemudahan perubatan luar pesisir.

- Sangat Tidak Setuju
- Tidak Setuju
- Berkecuali
- Setuju
- Sangat Setuju

20. Saya sentiasa bimbang atas perjalanan ke kerja atau dari kerja ke rumah dengan helikopter dan kapal/bot.

- Sangat Tidak Setuju
- Tidak Setuju
- Berkecuali
- Setuju
- Sangat Setuju

21. Saya rasa keselamatan saya dan orang lain akan terancam jika saya membuat kesilapan.

- Sangat Tidak Setuju
- Tidak Setuju
- Berkecuali
- Setuju
- Sangat Setuju

22. Saya bimbang tentang kemalangan yang mungkin berlaku disebabkan oleh keputusan saya di tempat kerja.

- o Sangat Tidak Setuju
- o Tidak Setuju
- o Berkecuali
- o Setuju
- o Sangat Setuju

23. Saya bimbang saya mungkin menghadapi masalah kesihatan kerana pendedahan yang lama kepada persekitaran luar pesisir.

- o Sangat Tidak Setuju
- o Tidak Setuju
- o Berkecuali
- o Setuju
- o Sangat Setuju

24. Keselamatan keseluruhan tapak kerja dan platform adalah sangat menyeluruh dan saya sangat selesa bekerja tanpa sebarang kebimbangan.

- o Sangat Tidak Setuju
- o Tidak Setuju
- o Berkecuali
- o Setuju
- o Sangat Setuju

BAHAGIAN F: STRUKTUR ORGANISASI

Arahan: Sila tandakan kotak yang sepadan dengan kategori yang paling hampir mewakili diri anda.

25. Saya sering berasa tertekan kerana peraturan, garis panduan dan prosedur yang ketat yang perlu dipatuhi pada setiap masa. Saya rasa ia amat menyukarkan kerja saya.

o Sangat Tidak Setuju
o Tidak Setuju
o Berkecuali
o Setuju
o Sangat Setuju

26. Cuti/bergilir 14 hari dengan syif bergantian membuatkan saya tertekan dengan tidur dan rehat yang tidak mencukupi dan saya sering berasa letih.

o Sangat Tidak Setuju
o Tidak Setuju
o Berkecuali
o Setuju
o Sangat Setuju

27. Pampasan, gaji dan ganjaran wang tidak sepadan dengan beban kerja yang saya lakukan.

o Sangat Tidak Setuju
o Tidak Setuju
o Berkecuali
o Setuju
o Sangat Setuju

28. Penyelia (Supervisor) saya meminta pendapat saya sebelum membuat keputusan yang menjejaskan kerja saya.

o Sangat Tidak Setuju
o Tidak Setuju

- o Berkecuali
- o Setuju
- o Sangat Setuju

BAHAGIAN G: IMPAK COVID-19 TERHADAP JADUAL GILIRAN KERJA

Arahan: Sila tandakan kotak yang sepadan dengan kategori yang paling hampir mewakili diri anda.

NOTA: Sila jawab soalan di bawah berdasarkan situasi semasa wabak COVID-19

29. Keperluan kuarantin baru-baru ini sebelum/selepas kerja telah membawa kesusahan dan beban kepada saya
- o Sangat Tidak Setuju
- o Tidak Setuju
- o Berkecuali
- o Setuju
- o Sangat Setuju

30. Disebabkan oleh kesan pandemik C-19 dan untuk kesinambungan perniagaan, organisasi terpaksa mengambil beberapa langkah drastik. Saya gembira dengan perubahan dalam jadual saya (cth; jadual yang tidak konsisten, giliran yang lebih lama, hari pertukaran kru yang tidak teratur, dsb.)
- o Sangat Tidak Setuju
- o Tidak Setuju
- o Berkecuali
- o Setuju
- o Sangat Setuju

31. Pampasan/pembayaran balik adalah adil dan saksama untuk perubahan jadual/giliran yang berlaku baru-baru ini disebabkan oleh pandemik C-19 dan saya berbesar hati untuk terus bekerja tanpa sebarang tekanan mental.

- o Sangat Tidak Setuju
- o Tidak Setuju
- o Berkecuali
- o Setuju
- o Sangat Setuju

32. Bekerja semasa pandemik/endemik COVID-19 secara amnya memberikan tekanan leih tinggi berbanding sebelum ini

- o Sangat Tidak Setuju
- o Tidak Setuju
- o Berkecuali
- o Setuju
- o Sangat Setuju

TAMAT. TERIMA KASIH UNTUK PENYERTAAN

APPENDIX C: APPROVAL

TITLE OF PROJECT PAPER : OCCUPATIONAL STRESS AMONG OFFSHORE OIL & GAS EMPLOYEES IN MALAYSIA

NAME OF AUTHOR : RAVINDRA VENGADESAN

The undersigned certify that the above candidate has fulfilled the condition of the project paper prepared in partial fulfillment for the degree of Master of Business Administration (Project Management).

APROVED BY:

……..
ASST PROF DR FARHANA NEWAZ
Supervisor
Date:

ENDORSED BY:

……..
PROF DR BENJAMIN CHAN YIN FAH
Dean
Graduate School of Business
Date: