EFFECT OF WORKING CONDITIONS ON OCCUPATIONAL GOOD HEALTH AND WELL-BEING IN CONSTRUCTION INDUSTRY IN KLANG VALLEY, MALAYSIA

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Effect of Working Conditions on Occupational Good Health and Well-being in Construction Industry in Klang Valley, Malaysia

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DECLARATION

I hereby declare that:

(1) This Research Project is the end result of my own work and that due acknowledgement has been given in the references to all sources of information be they printed, electronic, or personal.

(2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

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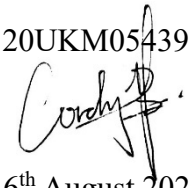
Signature: 

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LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
B	Regression coefficient
CIDB	Construction Industry Development Board
CH	Change
CO	Control
COVID-19	Coronavirus disease
D	Demand
df	Degree of freedom
DOSH	Department of Occupational Safety and Health
DV	Dependent variable
EWB	Employee Well-Being
F	F-value (ratio of two mean square values)
HIV	Human Immunodeficiency Virus
HSE	Health and Safety Executive
IV	Independent variable
JD-R	Job Demand and Resource
O	Occupational Good Health and Well-being
OSH	Occupational Safety and Health
OSHA	Occupational Safety and Health Act
PhD	Doctor of Philosophy
POS	Perceived organizational support
PTSD	Post-traumatic stress disorder
R-squared	Coefficient of determination
R-value	Thermal resistance
S	Support
SCT	Social Cognitive Theory
SDG	Sustainable Development Goals

Sig.	Significance value/p-value
SPM	Sijil Pelajaran Malaysia
t	T-test
WCI	Workmen's Compensation Insurance
WHO	World Health Organization
UHC	Universal health coverage
UN. ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UN Women	United Nations Entity for Gender Equality and the Empowerment of Women
UNESCO	United Nations Education, Scientific and Cultural Organization
UNV	United Nations Volunteers
UTAR	Universiti Tunku Abdul Rahman
VIF	Variance Inflation Factor

ABSTRACT

The construction industry is characterized by demanding and challenging working conditions that can have significant implications for the well-being of its employees. This research study sought to explore the intricate relationship between working conditions and occupational good health and well-being within the context of the construction industry. Utilizing a survey questionnaire, data were gathered from employees, with a specific focus on the independent variables of demand, control, change, and support, and their potential impact on occupational good health and well-being. The findings of the study unveiled compelling insights into the associations between specific working conditions and occupational well-being. Notably, higher levels of demand and support demonstrated positive correlations with improved well-being, indicating the importance of adequately managing job demands and fostering a supportive work environment for employees. Conversely, the results indicated a negative correlation between change and well-being, emphasizing the significance of effective change management strategies in mitigating potential adverse effects on employee well-being. However, the study did not identify a significant correlation with control, suggesting a need for further exploration into its role in the context of occupational well-being in the construction industry. These results have important implications for practitioners and policymakers in the construction industry. Recommendations include prioritizing job demands and work-life balance, fostering a supportive work environment, implementing effective change management practices, conducting longitudinal studies, and promoting collaboration and knowledge sharing within the industry. By adopting these suggestions, practitioners and policymakers can work towards creating healthier work environments and promoting the well-being of employees in the construction industry.

Keywords: Construction Industry, Working Conditions, Occupational Well-being, Job Demands, Supportive Work Environment

CHAPTER 1

INTRODUCTION

1.1 Background of Study

The construction industry in Malaysia has made great strides in recent years and the increase in its activities has affected the safety and health of the public. As international emergencies such as global warming and the Coronavirus disease (COVID-19) pandemic reshape the way industries operate, construction sites pose risks to construction workers and the public who are situated or live near the construction site. Therefore, it is important to strengthen and enhance organizational resilience and support employees' health, safety, and well-being because deficiencies in taking preventive measures against occupational health and security incidents can have significant consequences for companies in the construction industry.

Some common hazards in Malaysia's construction industry include falls from heights, electrical hazards, machinery accidents, exposure to hazardous materials, and heat stress. These hazards can cause a range of health problems, including injuries, illnesses, and even fatalities.

To address these issues, the government has introduced various regulations and guidelines aimed at promoting occupational health and safety in the construction industry. For example, the Department of Occupational Safety and Health (DOSH)

under the Ministry of Human Resources is responsible for enforcing the Occupational Safety and Health Act (OSHA) 1994 and other relevant regulations. The government has also introduced several initiatives to promote occupational health and safety in the construction industry. For example, the Construction Industry Development Board (CIDB) has developed the Malaysian Construction Industry Occupational Safety and Health (OSH) Blueprint, which outlines a comprehensive strategy for improving OSH in the industry. The OSH Blueprint includes several key initiatives, such as the establishment of a Construction Industry OSH Council to coordinate OSH efforts, the development of OSH training programs for workers and supervisors, and the implementation of a safety performance rating system for contractors.

Additionally, many construction companies have also implemented their own health and safety policies to ensure the well-being of their employees. These policies may include providing appropriate personal protective equipment, conducting regular safety training and briefings, and carrying out regular inspections and audits to identify and address potential hazards. Despite these efforts, however, there are still many challenges to improving the working conditions related to occupational health and well-being in the construction industry such as limited resources and funding, a lack of awareness and education on occupational health and safety, and a shortage of skilled workers.

OSH are important policies and practices not only to enhance security and ensure safety performance for the employees who are involved in different construction activities and duties but also to avoid safety and health hazards of construction-related works in an organization. Although organizations should guarantee that individuals working outside the home are free from risks to health and safety, occupational health hazards often happened due to mechanical or electrical mischance. It also involves structures that cannot withstand harsh weather conditions, movement, unprotected machine parts, or hardware failure. In Malaysia, the workforce in the construction industry is dominated by highly self-employed, seasonal, and mobile employees from foreign countries, while many of them are unfamiliar with construction processes, legal safety practices, and health standards. In addition, these employees are exposed to uneven or

harsh environments such as working at heights, exposure to electricity, and construction machinery resulting in various health and safety hazards.

Therefore, tying the organization to its employees' physical and psychological health is one of the key aspects to achieving organizational goals effectively and efficiently because it links employees' working efforts with the organization's mission and objectives. Although employee performance is a key aspect that constitutes a valuable workforce, if the mental and physical health of employees is not being concerned by the organization, employees may experience health problems such as stress, exhaustion, and anxiety due to overloaded work which causes work stress and affects job performance negatively. When employees encounter work stress, their self-esteem and work enthusiasm will decrease. Therefore, the less effort they put into work, the lower their performance will be, leading to low business efficiency and a high turnover rate.

Based on the article by Sarı (2009), 3 main threats endanger employees' health and safety, such as occupational accidents, occupational illnesses, and job stress. Occupational accidents include common personal injuries, diseases, or death caused by chemical, physical, or biological exposure. Occupational illnesses are the physical and mental deficiencies that an employee suffers from working overtime in terms of work quality and execution of work while working under the commands of the employer and taking his/her instructions. While job stress mainly comes from the job of employees and the organization including the working atmosphere, expectations, leadership styles of employers or supervisors, and the relationship between colleagues.

Scientific evidence shows that certain working conditions are stressful for most people and negatively affect employee performance. According to Prasad, Vaidya, and Kumar (2015), stress caused by various stressors has a negative impact of medium intensity on performance. The employees at the institute are particularly concerned about job security, and all variables fall within the range of medium stress levels. Job security, workload, time pressures, and physiological factors, such as chronic back pain and panic reactions to stress, are the main causes of medium stress levels. The researchers also found that women are more likely to experience stress due to the conflict of juggling work and family responsibilities in this study. They concluded that stress is a

modern-day problem and a common hazard in the workplace that requires immediate attention.

1.2 Research Problem

Working conditions can significantly impact the occupational good health and well-being of workers in the construction industry. There are some effects of working conditions on the health and well-being of construction workers.

Poor working conditions can have a significant impact on the physical health of workers. Exposure to hazardous chemicals, inadequate ventilation, noise pollution, and extreme temperatures are some of the factors that can cause respiratory illnesses, hearing loss, and heat stroke. Musculoskeletal disorders are a common health issue for construction workers due to the physical demands of their work. Poor ergonomics, repetitive motions, and heavy lifting can lead to chronic pain and injuries.

Mental health is another aspect that can be negatively impacted by poor working conditions. Long working hours, job insecurity, lack of control, and exposure to traumatic events such as accidents can lead to mental health problems such as anxiety, depression, and post-traumatic stress disorder (PTSD). Working long hours and irregular shifts can lead to fatigue, which can significantly impact a worker's ability to concentrate, make decisions, and perform tasks safely.

The construction industry is one of the largest and most important sectors in Malaysia, contributing significantly to the country's economy. However, it is also known to be a high-risk occupational health and safety industry. According to the Department of Occupational Safety and Health (DOSH), 6719 reported accidents in the construction industry from January to November 2022 which includes 6306 non-permanent disability cases, 227 permanent disability cases, and 186 deaths (Department of Occupational Safety and Health, 2022).

There are some cases and accidents related to the construction industry in Malaysia. On 29th December 2018, DOSH has taken action against a construction company after a worker died in an accident at a shopping center construction site (Worker dies after falling three floors in forklift mishap in Johor, 2018). In this particular case, it appears that the worker was operating a forklift and fell three floors to his death. DOSH has issued a notice to the company for not ensuring workplace safety, which led to the accident. Forklift accidents are a common cause of workplace fatalities in the construction industry, and employers should ensure that workers are properly trained and equipped to operate machinery safely.

On 2nd January 2018, one foreign worker at a construction site in Seksyen 7 Shah Alam was killed, and three others were seriously injured, when a falling crane component struck them (Chin, 2018). The accident occurred at the i-City construction site and the cause of the collapse is still unclear. Crane collapses are a significant hazard in the construction industry and can result in serious injuries or fatalities. Employers have a responsibility to ensure that cranes are properly maintained, inspected, and operated by trained personnel. Regular inspections and adherence to safety guidelines are essential in preventing accidents such as this case.

On 27th September 2022, a worker was killed in a building site collapse. The incident occurred in Kuala Lumpur, Malaysia, and the victim was a Bangladeshi worker who was trapped under debris for several hours before being pronounced dead at the scene by medical personnel (Camoens, 2022). On 4th January 2023, Nepali worker was killed after falling from a height of 70 meters at a construction site (Babulal, 2023). The worker was on scaffolding at the time of the accident. It is not clear what caused the fall and the authorities are investigating the incident. Falls from height are one of the most common causes of workplace fatalities in the construction industry. It is important that employers implement effective safety measures to prevent falls and provide workers with appropriate training and equipment.

These cases demonstrate the ongoing challenges facing the construction industry in Malaysia in ensuring safe and healthy working conditions for workers. Despite various measures and regulations implemented to ensure occupational health and well-being in

the Malaysian construction industry, workers in this sector continue to experience significant health and safety issues, leading to high injury rates, absenteeism, and productivity loss.

On 1st March 2023, the Employment Hero survey revealed that 58% of 1000 employees in Malaysia experience burnout, and 51% of them have poor work-life balance (Zainal, 2023). Dr. Andrew Mohanraj, the President of the Malaysian Mental Health Association, highlighted the benefits of mental health days for both employees and employers. Taking time off for mental health can lead to increased productivity, prevent burnout, and reduce presenteeism, where employees are physically present but unable to focus on their work. Internal policies promoting non-discrimination based on mental health conditions and mainstreaming conversations about mental health in the workplace are important steps to create a supportive environment. Dr. Raj Kumar Maharajah, President of the Medical Practitioners Coalition Association of Malaysia, stressed the importance of recognizing mental health as a valid reason for medical certificates and addressing stress and burnout in young workers. Chia Swee Yik, a legal practitioner, highlighted the need for amending the Occupational Safety and Health Act (OSHA) to encompass mental health and potentially treat mental conditions as a form of disability to ensure supportive environments.

While there have been efforts to improve the working conditions related to occupational health and well-being in the construction industry in Malaysia, there is still a need for further action and collaboration between the government, industry stakeholders, and workers to ensure a safer and healthier workplace. Therefore, what are the key factors contributing to the poor health and well-being of construction workers in Malaysia, and how can these issues be addressed to improve the overall health and well-being of workers in the industry?

1.3 Research Objectives

To ensure the occupational good health and well-being of employees are being concerned to increase awareness of construction site safety measures, the organization needs to understand the current health status of employees and have a functional human resource management system that focuses on the wellness of employees and predicts the risks that may arise due to poor health of employees. Therefore, the purpose of this study is to determine the current working conditions of employees, enabling us to understand current occupational good health and well-being among employees and monitor future improvements in the construction industry in Malaysia. The objectives of this study are:

- To determine the relationship between demand and occupational good health and well-being in the construction industry.
- To identify the relationship between control and occupational good health and well-being in the construction industry.
- To investigate the relationship between change and occupational good health and well-being in the construction industry.
- To examine the relationship between support and occupational good health and well-being in the construction industry.

1.4 Research Questions

- How does the demand affect the occupational good health and well-being of employees in the construction industry?
- How does the control affect the occupational good health and well-being of employees in the construction industry?
- How does the change affect the occupational good health and well-being of employees in the construction industry?
- How does the support affect the occupational good health and well-being of employees in the construction industry?

1.5 Significant of Study

The study on the effect of working conditions on occupational good health and well-being in the construction industry is significant in both theoretical and practical ways. From a theoretical perspective, the study can provide a better understanding of the complex interplay between various factors that contribute to worker health and well-being, such as the physical environment, work organization, and psychosocial factors. This understanding can lead to the development of new theories and frameworks that better capture the complexity of the relationship between working conditions and worker health and well-being. It can also advance research methodology by introducing new tools and techniques for measuring and analyzing the impact of working conditions on worker health and well-being. The study can also provide insights into the broader social and economic factors that impact worker health and well-being in the construction industry. For example, the study can examine the role of government policies and regulations, industry practices, and labor market factors in shaping working conditions and worker health outcomes.

Practically, the study can have significant implications for the construction industry. One of the most important practical implications is that the study can inform interventions aimed at improving working conditions in the industry. Such interventions could include changes to work processes, the use of new technologies and equipment, and training programs for workers. Improved working conditions can lead to better safety outcomes, including reduced incidence of work-related injuries and illnesses, and can result in a reduction of healthcare costs associated with treating work-related injuries and illnesses. Additionally, better working conditions can lead to improved worker productivity, reduced absenteeism, and better retention rates, ultimately saving employers significant costs associated with recruiting and training new workers.

The study can also contribute to the broader community by reducing the burden on healthcare systems and promoting economic development. By improving worker health and well-being, the construction industry can establish a reputation as a safe and healthy place to work, increasing interest in the industry as a career path. Additionally,

the study can promote sustainable practices and reduce waste and pollution in the construction industry, positively impacting the environment.

Furthermore, the study can help ensure compliance with regulations aimed at protecting worker safety and health, leading to better enforcement and compliance with safety and health standards. Overall, the study on the effect of working conditions on occupational good health and well-being in the construction industry has numerous theoretical and practical implications. It can contribute to the development of evidence-based policies and guidelines aimed at improving worker health and well-being, promoting compliance with safety and health standards, and ultimately leading to a safer and healthier workplace for construction workers.

1.6 Definition of Terms

Demand is defined as the amount and degree of work expected from employees and any additional physical or emotional requirements placed on them. The demand focuses on the workload, work pace, work patterns, and emotional demands of work. High levels of demand can increase the risk of work-related stress and negatively impact employee well-being leading to longer working hours, which can increase fatigue and stress levels among workers, ultimately leading to a decline in their health and well-being such as pressure to complete projects quickly, which can result in workers taking shortcuts or ignoring safety procedures to meet deadlines. Therefore, employers need to manage the demand placed on employees to ensure that it is reasonable and manageable.

While control is defined as the level of control or autonomy that the person has over their work processes and methods. Lacking control over work conditions or procedures, or being micromanaged, can increase the risk of work-related stress and negatively impact employee well-being. Therefore, it is essential for employers to provide employees with a reasonable level of control over their work and to involve them in decision-making processes that affect their work.

Change in an organization's context refers to how significant and minor changes are managed and communicated to employees. It encompasses how changes to an organization's structure, such as mergers or restructures, as well as changes to work processes, are communicated and implemented. When change is not well-managed, it can lead to work-related stress and have a negative impact on the well-being of employees such as confusion, stress, and anxiety. To prevent this, employers must involve employees in the change process, communicate changes clearly and effectively, and provide support to employees during times of change. By doing so, organizations can help minimize the negative effects of change and promote a more positive work environment for employees.

Support refers to the level of resources and assistance provided by an organization, supervisors, and colleagues to help individuals perform their work effectively. When

employees lack sufficient support, inadequate training, lack resources, or toxic work culture, they may experience work-related stress and other negative impacts on their well-being such as lead to stress, burnout, and other negative health outcomes among employees. To prevent this, employers must offer employees ample support, resources, and training that enable them to perform their duties with confidence and feel valued and supported in their roles.

These 4 factors related to occupational health and well-being in the construction industry are interrelated and can impact each other. For instance, increased demand can impact the level of control and support provided to workers, while inadequate support can hinder their ability to adapt to changes in their work environment.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The construction industry is notorious for its harsh working conditions, including long working hours, physically demanding work, exposure to hazardous substances, and a high-risk working environment. As a result, construction workers are often at greater risk of work-related injuries, illnesses, and fatalities compared to workers in other sectors. These risks not only affect the physical health of workers but can also lead to mental health issues such as stress, anxiety, and depression. Given the significant impact of working conditions on the occupational health and well-being of construction workers, there has been increasing interest in this area of research. A considerable body of literature has emerged, exploring the different factors that contribute to occupational good health and well-being in the construction industry. These studies have examined a range of factors, including organizational factors such as management practices and safety policies, individual factors such as job control and social support, and external factors such as government regulations and policies.

By conducting a literature review on this topic, we can comprehensively understand the existing research and identify gaps in our knowledge. This review aims to synthesize the literature on the effect of working conditions on occupational good

health and well-being in the construction industry and highlight the key factors that contribute to good occupational health and well-being. In doing so, this review will provide insights into effective strategies for promoting occupational health and well-being among construction workers and identify areas where further research is needed to address the gaps in our understanding.

2.2 Underpinning Theory

Social Cognitive Theory (SCT) provides three ways in which individuals can take action: direct personal agency which involves taking action oneself to achieve desired outcomes; proxy agency which involves relying on others to act on one's behalf to achieve desired outcomes; and collective agency which involves taking action through group effort to achieve desired outcomes (Bandura, 2002).

Personal agency refers to an individual's ability to take control of their own life and exert their influence directly on themselves and their surroundings in order to manage their life. In situations where individuals do not have direct control over the social conditions and institutional practices that affect their daily lives, they rely on proxy agency to seek their well-being and achieve desired outcomes. Proxy agency involves requesting the assistance of individuals or groups who have access to resources, expertise, or hold power and influence to act on their behalf. Individuals recognize that they cannot achieve everything on their own and must work together with others to achieve certain goals, pooling their knowledge, skills, and resources, providing mutual support, forming alliances, and collaborating to secure outcomes that are not achievable individually. This interdependent effort is necessary to achieve certain goals that cannot be accomplished independently (Bandura, 2002).

To function successfully, individuals must utilize a combination of these different modes of agency. The contribution of individual, proxy, and collective agency to this combination may vary across cultures. However, regardless of the cultural context, all three modes of agency are necessary for individuals to navigate their daily lives. It is

important to recognize that human agency cannot be reduced to individual and collective forms, as this overlooks the complexity and interdependence of different agentic modes (Bandura, 2002). Rather than being culturally exclusive, differences in agentic patterning across cultures reflect differences in the relative emphasis placed on each mode of agency.

Applying SCT to the construction project context, it is possible to hypothesize that by understanding the internal dispositions of the project and the situational context in which it operates, it is possible to predict the behavior of project participants. This is because social cognitive theory posits that an individual's behavior is influenced by both their personal agency (individual dispositions) and their collective agency (situational context). By understanding how these factors interact and contribute to behavior, it becomes possible to predict how individuals within a construction project will behave. For example, by understanding the personal agency of individual participants (their motivation, goals, and self-efficacy) and the collective agency (project goals, organizational culture, and stakeholder influence), it is possible to predict how they will respond to different situations and what actions they will take within the project.

2.3 Occupational Accidents in Construction Industry

The construction industry in Malaysia is known to be one of the most hazardous industries in the country, with high rates of accidents and injuries. Poor working conditions, such as inadequate safety measures, lack of training, and exposure to hazardous substances, are among the factors contributing to these risks. Consequently, construction workers are experiencing several health issues such as skin inflammation, hearing impairment, and whole-body vibration, leading to numerous incidents and fatalities among construction workers and the public, making unsatisfactory Occupational Safety and Health (OSH) a significant concern. The construction industry has several prevalent hazards, such as falls from elevated areas, getting hit by falling

objects, being exposed to hazardous substances, inhaling dust, working in cramped spaces, and getting into vehicle accidents (MuhamMusarat, Alaloul, Irfan, Sreenivasan, & Rabbani, 2022). To address these problems, researchers worldwide have conducted studies to improve their understanding of construction workers' health issues.

The field of OSH is concerned with preventing occupational hazards associated with various work activities or jobs. Its primary objective is to promote and maintain the highest level of safety and health in the workplace, creating conditions that prevent work accidents and illnesses (Pamidimukkala & Kermanshachi, 2022). Preventing occupational accidents and occupational diseases is just one aspect of OSH. It also involves identifying the root causes of these hazards in the workplace and implementing appropriate control measures to prevent them. The construction industry is a high-risk field because of its labor-intensive processes, production procedures, and significant financial losses that can result from occupational accidents caused by risks and hazards (Halim, Jaafar, Anuar, Kamaruddin, & Jamir, 2020). Although accidents can happen unexpectedly, the employer must take necessary measures to reduce the probability of mishaps and uphold a secure working environment. According to a survey on research priorities in occupational health and safety in Malaysia conducted by Saifullah and Ismail in 2012, the construction industry was identified as the one of primary economic prospects that should be given top priority (Saifullah & Ismail, 2012). As stated in the introduction of this study, DOSH conducted a study on fatal accidents and found that the construction industry in Malaysia had the highest number of fatalities during the study period (DOSH, 2021). This indicates that the construction sector is critically in need of effective OSH management to reduce the significant number of fatalities occurring on construction sites.

The Construction Industry Development Board (CIDB) was established in 1995 to facilitate the growth and development of Malaysia's construction industry in a way that is in line with the nation's goals and objectives (Hussain & Hadi, 2019). CIDB mandates that all site personnel registered with them attend a one-day safety training session conducted by either CIDB staff or CDIB-accredited independent trainers. Once completed, attendees receive a green registration card whereby the holders receive

automatic coverage against industrial accidents via an insurance policy arranged by CIDB, while every worker and subcontractor who work on the construction site is also covered under the Workmen's Compensation Insurance (WCI) policy to ensure that they receive appropriate compensation in case of a workplace accident or injury (MuhamMusarat, Alaloul, Irfan, Sreenivasan, & Rabbani, 2022). As for Employment Injury Insurance Scheme, it covers work-related accidents, such as industrial accidents, occupational illnesses, and accidents during commuting. This scheme provides compensation for medical expenses, lost wages, and rehabilitation costs for affected employees. The Invalidity Pension Scheme covers disability or death resulting from any cause unrelated to work (MuhamMusarat, Alaloul, Irfan, Sreenivasan, & Rabbani, 2022).

Ensuring safety is crucial to completing projects within the set budget since work disruptions can be costly for companies, as well as the cost of hiring replacements when an injured employee cannot perform their duties. In addition, employee compensation claims and lawsuits can increase a company's insurance expenses. Therefore, it is imperative to prioritize safety and health protocols at construction sites to protect the public, minimize work-related accidents, and reduce the time and financial losses incurred in the aftermath of an accident (Muñoz-La Rivera, Mora-Serrano, & Oñate, 2021).

2.4 Occupational Illnesses in Construction Industry

Occupational illnesses refer to physical and mental health issues that arise as a result of working conditions and demands placed on employees by their employers, including working long hours, performing job tasks, and following the employer's instructions. The construction industry is recognized for its flexible working hours that oblige employees to work until late at night. Unfortunately, the unhealthy working conditions in the construction industry are frequently ignored, and there is a lack of research on the burden placed on workers. As a consequence, there is a lack of awareness among employees in the construction industry regarding their work environment.

The idea of work-life balance has gained significance in guaranteeing equilibrium and stability between employees' professional and personal lives (Abas, Saharan, Rahmat, Ghing, & Abas, 2021). The matter of work-life balance appears to be disregarded by companies, organizations, employers, and even employees due to job necessities and a focus on work priorities. Nowadays, this has become a significant problem as workers are willing to overlook poor work-life balance to pursue their dreams of owning assets such as properties, houses, and cars, while neglecting their overall well-being and quality of life (Harris, 2014). The most reliable indicator of work-life conflicts among construction workers, especially those working on-site or in a project office, was found to be the prolonged and inflexible working hours (Lingard, Brown, Bradley, Bailey, & Townsend, 2007). The impact of an inadequate work-life balance on employees can be seen in their work performance, which is indirectly affected. As the workload gradually intensifies, employees eventually reach their mental limits which result in mentally exhausted and a decrease in productivity during working hours. This can result in decreased creativity and problem-solving abilities, even when it comes to small issues at work.

Fatigue refers to the physical or mental constraints that hinder a person's ability to perform a task. Physical fatigue can arise from arduous activities like carrying heavy objects, while mental fatigue can occur from prolonged use of computer screens, for instance (Valitherm, 2022). The physically demanding nature of construction work, coupled with harsh environmental conditions, can contribute to fatigue in workers. This

fatigue can lead to reduced performance, affecting judgment, work quality, productivity, and increasing the risk of accidents (Abdelhamid & Everett, 2002). In extremely hot or cold environmental temperatures, physical fatigue and impaired mental capacity can increase accidents risks (Rowlinson, YunyanJia, Li, & ChuanjingJu, 2014). Physical fatigue is caused by physically demanding activities and refers to a decrease in an individual's capacity to perform such work. Mental fatigue is a state of psychobiological exhaustion resulting from extended periods of challenging cognitive activity. It is characterized by subjective feelings of tiredness and a lack of energy (Boksen & Tops, 2008). Meanwhile, mental fatigue can impair physical performance (Marcora, Staiano, & Manning, 2009). Interestingly, light physical exertion can improve mental performance, while heavy physical exertion can decrease it (Davey, 1973), which indicates a complicated relationship between physical and mental fatigue.

The absence of reliable real-time monitoring methods for fatigue makes it challenging to measure the direct effects of fatigue on construction safety. Consequently, research on fatigue and its impact on occupational safety remains limited (Hallowell, 2010). Nonetheless, fatigue is considered one of the factors that can adversely affect workers' safety and performance.

2.5 Job Stress in Construction Industry

Employees working in the construction industry experience various factors that cause stress while performing their job, leading to negative effects on their mental well-being. This, in turn, affects the success of both the individual and the organization they work for (Rouhanizadeh & Kermanshachi, 2021). According to research, job stress is identified as a significant risk to the growth and sustainability of the construction industry (Ibem, Anosike, Azuh, & T.O., 2011). The demanding nature of executing a construction project, which involves multiple complex tasks, adhering to tight time and budget constraints, ensuring high-quality standards, and incorporating safety and environmental considerations, creates a significant stress on all parties involved in the construction process, including construction personnel (Enshassi, El-Rayyes, & Alkilani, 2015).

When job stress persists over an extended period, it can result in job burnout, leading to accidents that have adverse effects on the organization, such as increased project costs and lost workdays (Poon, Rowlinson, Koh, & Deng, 2013). Ibem et al. (2011) also found that design errors and changes resulting in variations in the scope of work were identified as significant sources of stress among construction workers. Fragmentation of work structure was also identified as a stressor. Poon et al. (2013) stated that construction personnel often experience stress due to their direct involvement in construction operations and their responsibility for any mistakes or errors that may occur. According to Enshassi et al. (2015), workers who have minimal input in decision-making and problem-solving processes may experience stress due to their perception of low job control. Additionally, poor relationships between workers at different organizational levels and senior management were found to be the primary cause of stress and burnout, ultimately having negative effects on the health of construction personnel.

As for the working environment, Ibem et al. (2011) discovered that extreme temperatures experienced by workers during work hours can be a source of stress in the work environment, whereas factors such as poor site conditions, high noise levels, and inadequate lighting did not significantly stress top management personnel who

primarily work in their offices. Stress can also trigger physiological responses in the human body, including an elevated heart rate, heightened blood pressure, and perspiration (Nixon, Mazzola, Bauer, Krueger, & Spector, 2011). These physiological responses may become chronic, and the physical symptoms of stress may manifest in the form of headaches, back pain, and a decreased appetite (Mellner, Krantz, & Lundberg, 2005). Construction workers heavily rely on their physical abilities to carry out various construction tasks, and thus experiencing physical symptoms of stress can undoubtedly have a detrimental effect on their productivity (Darr & Johns, 2008). Research has also shown that physical stress can have a negative impact on workers' safety performance (Leung, Chan, & Yu, 2012).

In conclusion, the research has indicated that achieving workplace well-being is challenging for construction workers. As a result, organizations must identify strategies to promote well-being to ensure the welfare of these workers and avoid negative outcomes, such as reduced productivity and project failure.

2.6 The 17 Goals of Sustainable Development

The 17 Goals of Sustainable Development were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity. The goals are designed to be integrated and indivisible, and to balance the economic, social, and environmental dimensions of sustainable development.

Table 1: Definitions of the 17 Goals of Sustainable Development

No Poverty	This goal aims to eliminate poverty in all its forms and dimensions. This pertains to focusing on the individuals or groups who are at the highest risk, improving fundamental necessities and amenities, and providing assistance to populations impacted by both violence and natural calamities caused by climate change (Goal 1: No Poverty, n.d.).
Zero Hunger	This goal aims to end hunger, improve nutrition, and promote sustainable agriculture. This encompasses advancing the development of agriculture that can be sustained over time, aiding farmers with small-scale operations, and providing them with equal opportunities to access land, technology, and markets. It also necessitates international collaboration to ensure that investments in infrastructure and technology are made to enhance agricultural productivity (Goal 2: Zero Hunger, n.d.).
Good Health and Well-being	This goal aims to ensure universal access to health care and promote well-being for all. It considers the expanding disparities in both economic and social aspects, the speedy growth of urban areas, risks to the

	environment and climate, the ongoing challenges of Human Immunodeficiency Virus (HIV) and other contagious diseases, and emerging issues such as non-communicable diseases (Goal 3: Good Health and Well-being, n.d.).
Quality Education	This goal aims to provide inclusive and equitable education for all. This objective seeks to guarantee that every boy and girl can finish their primary and secondary education without incurring any cost by the year 2030. It also strives to grant equal opportunities for access to reasonably priced vocational education, eliminate gender and wealth gaps, and accomplish widespread entry to excellent higher education (Goal 4: Quality Education, n.d.).
Gender Equality	This goal aims to achieve gender equality and empower all women and girls. The aim is to provide women with the same rights to land and property, reproductive and sexual health services, and access to technology and the Internet. While there are more women in public office today than ever before, promoting more female leaders can contribute to advancing gender equality further (Goal 5: Gender Equality, n.d.).
Clean Water and Sanitation	This goal aims to ensure access to clean water and sanitation for all. To achieve the goal of providing safe and reasonably-priced drinking water to everyone by 2030, it is necessary to invest in sufficient infrastructure, furnish sanitation facilities, and promote good hygiene practices (Goal 6: Clean Water and Sanitation, n.d.).
Affordable and Clean Energy	This goal aims to promote access to affordable and clean energy. The aim is to ensure access to affordable, reliable, sustainable, and modern energy for all,

	investing in solar, wind, and thermal power, enhancing energy efficiency, and guaranteeing universal access to energy is indispensable (Goal 7: Affortable and Clean Energy, n.d.).
Decent Work and Economic Growth	This goal aims to foster persistent economic growth, elevated levels of productivity, and technological advancement. Encouraging entrepreneurship and creating jobs play a critical role in achieving these objectives, as well as implementing effective measures to eliminate forced labour, slavery, and human trafficking (Goal 8: Decent Work and Economic Growth, n.d.).
Industry, Innovation, and Infrastructure	This goal aims to promote inclusive and sustainable industrialization and innovation. Given that more than half of the world's population now resides in urban areas, the development of mass transportation and renewable energy has become increasingly significant. Alongside these, the emergence of new industries and information and communication technologies also plays a vital role in achieving sustainable development (Goal 9: Industry, Innovation and Infrastructure, n.d.).
Reduced Inequalities	This goal aims This encompasses enhancing the regulation and surveillance of financial markets and institutions, promoting foreign direct investment and development assistance in areas where the demand is most pressing. To reduce income inequality within and among countries (Goal 10: Reduced Inequalities, n.d.).
Sustainable Cities and Communities	This goal aims to make cities and human settlements inclusive, safe, resilient, and sustainable. Establishing sustainable cities involves generating employment and business prospects, providing secure and reasonably-

	priced housing, and building robust societies and economies. This necessitates investing in public transportation, designing eco-friendly public areas, and enhancing urban planning and management through participatory and inclusive methods (Goal 11: Sustainable Cities and Communities, n.d.).
Responsible Consumption and Production	This goal aims to promote sustainable consumption and production patterns. Efficient management of collective natural resources, as well as proper disposal of toxic waste and pollutants, are crucial objectives in attaining sustainable development. Encouraging industries, businesses, and consumers to recycle and minimize waste is of equal importance, along with supporting developing countries in transitioning to more sustainable consumption patterns (Goal 12: Responsible Consumption and Production, n.d.).
Climate Action	This goal aims to take urgent action to combat climate change and its impacts. Incorporating disaster risk measures, sustainable natural resource management, and human security into national development strategies is equally essential and must be pursued in tandem (Goal 13: Climate Action, n.d.)
Life Below Water	This goal aims to conserve and sustainably use the oceans, seas, and marine resources. The aim is to manage and safeguard marine and coastal ecosystems sustainably from pollution while tackling the consequences of ocean acidification (Goal 14: Life Below Water, n.d.).
Life On Land	This goal aims to protect, restore, and promote sustainable use of terrestrial ecosystems. Immediate action is imperative to decrease the loss of natural

	habitats and biodiversity, which form an integral part of our shared heritage and contribute to global food and water security, climate change mitigation and adaptation, as well as peace and security (Goal 15: Life on Land, n.d.).
Peace, Justice and Strong Institutions	This goal aims to promote peaceful and inclusive societies, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels. Emphasizing the rule of law and human rights is crucial to this process, as is limiting the flow of illegal weapons and reinforcing the involvement of developing countries in global governance institutions (Goal 16: Peace, Justice and Strong Institutions, n.d.).
Partnerships for the Goals	This goal recognizes that sustainable development requires collaboration among governments, the private sector, civil society, and international organizations. Fostering international trade and supporting developing countries in boosting their exports are integral to attaining a universal, equitable, and rules-based trading system that is transparent and impartial and serves the interests of all (Goal 17: Partnerships for the Goals, n.d.).

2.7 Good Health and Well-being

"Good health and well-being" is one of the Sustainable Development Goals (SDGs) set by the United Nations to be achieved by 2030. This goal aims to ensure healthy lives and promote well-being for all at all ages, and encompasses a wide range of issues, including physical and mental health, access to healthcare, and the prevention and treatment of diseases.

There is a strong interdependence between health, well-being, and sustainable development, where health is seen as both an indicator and a consequence of successful sustainable development (Nunes, Lee, & O'Riordan, 2016). This third SDG of ensuring good health and well-being has become particularly significant due to the global health crises caused by severe pandemics, including the recent Coronavirus disease (COVID-19) outbreak. The pandemic has hindered progress towards achieving the 2030 goals at both national and international levels (Filho, Brandli, Salvia, Rayman-Bacchus, & Platje, 2020). Global warming is endangering millions of people worldwide by accelerating the spread of certain infectious diseases, particularly those transmitted by mosquitoes (Sweileh, 2020). The burden of disease on the most vulnerable groups, particularly women, children, and the elderly, has been exacerbated by poverty, poor sanitation, and limited access to essential medicines and healthcare services (Benatar, 2016). Emerging pandemics, conflicts, climate change, and poor economic growth pose global health challenges that hinder progress toward achieving the 17 Sustainable Development Goals (SDGs), particularly the third goal which focuses on ensuring good health and well-being.

According to SDG 3 Review Paper by the regional offices for Asia and the Pacific of UNICEF, WHO, UNFPA, UN Women, UNESCO, and UNV, all countries in the Asia and Pacific region have improved access to essential health services since 2010; however, the COVID-19 pandemic has disrupted many of these services, such as antenatal care, childbirth delivery care, postnatal care, vaccinations, TB, malaria, and HIV treatments, overwhelming the health system and impeding progress towards universal health coverage (UHC) (UN.ESCAP ; UNICEF ; UN Women ; UNESCO ; WHO ; UNV ; UNFPA, 2021). Therefore, it is crucial to increase public funding for

health through strategic and targeted investments to sustain the gains made toward achieving sustainable development goals (SDGs) and address unmet needs. Even in the context of the pandemic, the provision of high-quality health care and essential services cannot be compromised if we are to meet today's health needs safely.

Workplace well-being covers all aspects of working life, including the quality and safety of the physical environment, job satisfaction, the working environment, workplace culture, and work organization (Workplace Well-being, 2022). Construction companies need to monitor not only the safety performance of their workers but also their psychological well-being. Employers are responsible for supporting their employees and providing an environment that fosters positive health and well-being, promoting a healthy workplace and workplace well-being (Rani, Radzi, Alias, Almutairi, & Rahman, 2022). By effectively managing health risks, companies can encourage positive health practices that benefit both employees and the workplace while also addressing and mitigating health risks (Kumar & Preetha, 2012).

2.8 Working Conditions – Demand

As mentioned in Chapter 1, employers have a responsibility to manage the demand placed on employees to ensure that it is reasonable and manageable. This involves various measures such as workload management, setting realistic deadlines, providing adequate resources and support, promoting work-life balance, and addressing any emotional demands of work.

Job demand refers to the physical, psychological, social, or organizational aspects of work that necessitate consistent physical and/or psychological effort or skills, and result in energy depletion which causes fatigue and strain (Broeck, et al., 2017). Job resources are the physical, psychological, social, or organizational aspects of a job that serve three primary functions. First, they are functional in achieving work goals. Second, they reduce job demand and associated physiological and psychological costs. Finally, they stimulate personal growth, learning, and development. Examples of job resources

include social support and autonomy. These resources can be intrinsically and/or extrinsically motivating and are considered the primary drivers of work engagement, although they may also offset burnout (Broeck, et al., 2017).

The relationship between job demand and job resources was determined by Brauchli et al. (2013) whereby the study found that changes in job demands, such as work interruptions, time pressure, uncertainty, and overload, and changes in work resources, such as social support, job control, task significance, and interpersonal justice, were related to changes in burnout and work engagement over time. This finding provides support for the notion that these relationships are causal in nature (Brauchli, Schaufeli, Jenny, Fullemann, & Bauer, 2013).

The term "workload" refers to the quantity of work that a person is given. It is common for employees to receive an excessive amount of work with challenging deadlines, which is known as a high workload. High workload is associated with negative consequences for employees such as exhaustion and frequent absences from work (Woerkom, Bakker, & Nishii, 2016). Studies have shown that high workload can significantly increase people's stress levels and lead to burnout, which in turn can have a negative impact on their level of work engagement. Llorens, Schaufeli, Bakker, and Salanova (2007) conducted a study in which they discovered that workload negatively affected people's physiological connection to their work, leading to a decrease in work engagement. Taipale et al. (2011) found that high workloads caused employees to experience stress, resulting in a lack of mental energy and connection to their work, ultimately leading to decreased work engagement.

Emotional demands refer to situations that elicit strong emotional reactions from individuals. These demands can have a negative impact on employees, causing them to feel negatively about their work, and can also harm their self-esteem and motivation (Totterdell & Holman, 2003). A study also demonstrated a significant negative effect of emotional demands on employees' work engagement whereby it indicates that emotional situations and setbacks at work, whether they originated from the organization or customers, were not well-received by employees, which in turn caused them to feel disengaged at work (Schaufeli & Bakker, 2004).

2.9 Working Conditions – Control

The level of control or autonomy that an individual has over their work processes and methods is referred to as "control". Work autonomy refers to the level of freedom an individual has in performing work activities and making decisions related to those activities. When employees are given the ability to make decisions about their tasks and performance strategies, this can have a direct impact on their creativity and the quality of their work outcomes. When employees lack control over their work conditions or procedures, or when they are micromanaged, they may be at higher risk of experiencing work-related stress, which can have negative effects on their well-being. Breaugh (1985) defined work autonomy as the extent to which an individual is granted discretion and independence in completing a task. Providing employees with freedom in their work not only improves their creative performance but also allows them to manage their work activities at their own pace.

According to Sia and Appu (2015), although the workplace comprises various tasks that differ depending on the product or service offered, common tasks are normally planning, production, communication, and customer relations management. Nowadays, organizations prioritize product quality and performance which requires employees' creativity for achieving organizational success and growth. Therefore, creating a conducive work environment is necessary to foster and implement workplace creativity, and this entails providing essential infrastructure, support, and coordination from supervisors and other authorities, as well as having a good organizational design and structure (Sia & Appu, 2015).

Giving employees sufficient freedom in their tasks has a positive impact on their performance and promotes a relaxed mindset that can foster new and innovative ideas. This can be beneficial for the organization as it encourages employees to think outside the box and approach tasks from different perspectives (Sia & Appu, 2015). In addition to improving employees' creative performance, work-related freedom can also assist in managing their work-related activities effectively. Providing employees with the freedom to structure their work and manage their time can help them prioritize their tasks and work efficiently.

2.10 Working Conditions – Change

The term “change” in the context of an organization refers to the management and communication of both major and minor alterations to the organization. This includes changes to the structure, such as mergers or restructurings, and changes to work processes. Proper management and communication of changes are critical to ensure that employees do not experience work-related stress or negative impacts on their well-being. Poorly managed changes can cause confusion, stress, and anxiety among employees. According to Ven and Poole (1995), there are four fundamental theories that can serve as foundational concepts for explaining how change occurs within organizations. These theories include life cycle, teleology, dialectics, and evolution. Each of these theories represents a unique sequence of events that drive change and operate at different levels within the organization. They are also powered by distinct conceptual motors, or underlying forces, that contribute to their specific processes of change. By understanding these theories, one can gain insights into how organizational change occurs and the different factors that may impact it (Ven & Poole, 1995).

Life-cycle theory proposes that change is an inherent aspect of an organization’s development. It suggests that there is an underlying form, logic, program, or code that regulates the process of change and moves the organization from one point to another, following a predetermined path (Ven & Poole, 1995). This means that the organization’s current state prefigures its subsequent end, and the latent or premature form that exists in its early stages gradually becomes more mature and differentiated over time. In essence, life-cycle theory asserts that change is inevitable and follows a predetermined path based on the organization’s underlying form and logic.

Teleology suggests that the development of an organization is oriented towards a specific goal or end state. It assumes that the organization is purposeful and adaptive, and actively works towards constructing a vision of its desired end state. In order to reach this goal, the organization takes action and monitors its progress, making adjustments as necessary. According to teleology, development is a cyclical process of setting goals, implementing them, evaluating progress, and modifying goals based on what has been learned (Ven & Poole, 1995). This theory can be applied to individuals,

groups of individuals, or organizations that are sufficiently like-minded to act as a collective entity. Teleology inherently encourages creativity, as the entity has the freedom to enact whatever goals it chooses in pursuit of its desired end state.

Dialectical process theory explains stability and change in organizations as a result of the balance of power between opposing entities. This theory suggests that stability is maintained through struggles and accommodations between opposing forces, which work to preserve the status quo (Ven & Poole, 1995). Change occurs when opposing values, forces, or events gain enough power to challenge and engage the existing status quo. When an antithesis gains enough power, it can mobilize an organizational entity to a sufficient degree to challenge the current thesis or state of affairs, creating the opportunity for producing a synthesis. In essence, dialectical process theory views change as the result of a struggle between opposing forces, with stability maintained through a balance of power between them (Ven & Poole, 1995).

Evolutionary theory explains the change in organizations as a recurrent, cumulative, and probabilistic process that involves variation, selection, and retention of organizational entities (Ven & Poole, 1995). This theory views change as a natural and predictable result of demographic characteristics of the population of entities in a given niche, with actuarial probabilities for survival and failure. While it is impossible to predict which individual entity will survive or fail, the overall population persists and evolves over time according to the specified population dynamics. In essence, evolutionary theory suggests that change is a natural and predictable outcome of the dynamic interplay between the characteristics of the organizational entities in a given environment (Ven & Poole, 1995).

2.11 Working Conditions – Support

Support in the workplace refers to the level of resources and assistance provided by an organization, supervisors, and colleagues to help individuals perform their work effectively. Adequate support can include access to training, necessary resources, and a positive work culture that encourages collaboration and open communication. Insufficient support, on the other hand, can lead to work-related stress, burnout, and other negative health outcomes among employees. This may include situations where employees lack the necessary resources or training to perform their work effectively, or where there is a toxic work culture that does not support employee well-being.

Social exchange theory views employment as a trade of effort and loyalty for tangible benefits and social rewards. This theory suggests that when one person treats another well, the reciprocity norm obliges the return of favorable treatment. When both the employee and employer apply the reciprocity norm to their relationship, favorable treatment received by either party is reciprocated, leading to beneficial outcomes for both (Rhoades & Eisenberger, 2002). In this way, employees may feel motivated to work hard and be loyal to their employer in exchange for rewards such as pay, incentives, benefits, and job security. Employers, in turn, may provide a positive work environment, opportunities for advancement, and recognition to employees who perform well. This positive exchange between employer and employee can foster a mutually beneficial relationship and contribute to overall organizational success.

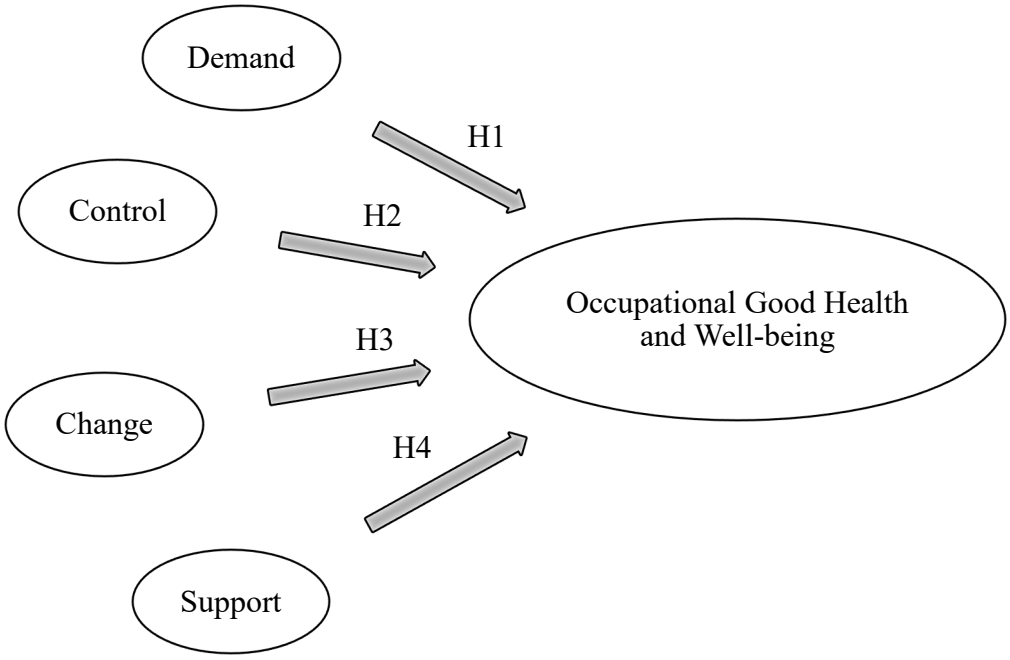
Social exchange theorists suggest that resources received from others are highly valued when they are given based on the discretion of the donor rather than circumstances beyond their control (Rhoades & Eisenberger, 2002). This voluntary aid is seen as an indication that the donor truly values and respects the recipient. Therefore, organizational rewards and favorable job conditions like pay, promotions, job enrichment, and influence over organizational policies contribute more to the perceived organizational support (POS) when employees believe that they result from the organization's voluntary actions rather than external constraints such as union negotiations or government regulations. As supervisors act as agents of the organization,

the receipt of favorable treatment from a supervisor should also contribute to the employee's POS (Rhoades & Eisenberger, 2002).

2.12 Proposed Framework

The occupational good health and well-being of employees are crucial for the success of any organizations in construction industry. The framework below provides a comprehensive perspective on the factors that contribute to occupational good health and well-being of employees, and organizations can use it to develop interventions and policies that promote a healthy and supportive work environment in construction industry.

Figure 1: Proposed Conceptual Framework for the Study



2.13 Hypothesis Development

According to Deng, Huang, Cheung, and Zhu (2021), their study examined the relationship between Job Demand and Resources (JD-R) and Employee Well-Being (EWB) among employees working in non-profit organizations in China. This study highlights the importance of reducing emotional workload and increasing job resources for non-profit employees in China to enhance their well-being and prevent burnout and turnover. Therefore, the hypothesis for the study is developed as follows:

H1: There is a significant relationship between demand and occupational good health and well-being in the construction industry.

Based on the study by Clausen et al. (2022), there is a positive relationship between job autonomy/control and psychological well-being. These findings are significant for organizations as they highlight the importance of redesigning jobs to increase levels of autonomy/control, particularly for employees with low levels of autonomy/control, in order to improve their psychological well-being. Therefore, the hypothesis for the study is developed as follows:

H2: There is a significant relationship between control and occupational good health and well-being in the construction industry.

In the study conducted by Denton, Zeytinoglu, and Davies (2003), the result of study indicates that the restructuring and organizational changes in home care agencies have had a detrimental effect, with a significant increase in work-related stress, burnout, and musculoskeletal disorders. Therefore, the hypothesis for the study is developed as follows:

H3: There is a significant relationship between change and occupational good health and well-being in the construction industry.

According to Taris and Schreurs (2009), they emphasized the importance of balancing job demands, control, and support to achieve optimal employee well-being. Their finding also implies that organizations that prioritize providing emotional and informational support to their employees do not necessarily perform poorly in terms of efficiency, productivity, and personnel costs. Therefore, the hypothesis for the study is developed as follows:

H4: There is a significant relationship between support and occupational good health and well-being in the construction industry.

By testing these hypotheses through empirical research, we can gain a better understanding of how organizations can support the good health and well-being of their employees and create healthier work environments.

CHAPTER 3

RESEARCH METHOD

3.1 Introduction

The construction industry plays a crucial role in building the infrastructure that shapes our cities and societies. However, it is also known for its demanding and challenging working conditions, which can significantly impact the occupational health and well-being of its workers. Despite the recognition of the construction industry's working conditions, there is a paucity of comprehensive studies exploring the direct relationship between these working conditions and the occupational health and well-being of construction workers. This study aims to fill this gap by examining the effect of working conditions on occupational good health and well-being in the construction industry.

This study aims to investigate the impact of various working conditions, such as physical demands, working hours, organizational changes, and support from colleagues and supervisors, on the occupational health and well-being of workers in the construction industry. Specific goals include assessing the prevalence of health problems, exploring factors that contribute to them, and identifying potential interventions to improve occupational well-being.

3.2 Research Design

This study will use a cross-sectional study where the data will be collected within the study population at one point in time. In the study titled "Effect of Working Conditions on Occupational Good Health and Well-being in Construction Industry in Klang Valley, Malaysia", the research design involves the use of a questionnaire as a research instrument. The questionnaire will be administered to respondents in the construction industry to gather data related to their working conditions, occupational health, and well-being. The study aims to investigate the relationship between working conditions and the overall health and well-being of employees in the construction industry. By administering a survey questionnaire, the researcher can efficiently gather a large amount of data from a diverse range of construction industry workers, enabling us to examine multiple factors simultaneously.

By participating in the study, respondents may also gain increased awareness and knowledge about the relationship between working conditions and occupational health and well-being outcomes. They will have the opportunity to reflect on their working conditions, occupational risks, and potential impacts on their health and well-being. This increased awareness can help respondents make informed decisions regarding their work environment and potentially take steps to mitigate risks or improve their overall occupational health.

The findings of this study can help identify specific factors that are associated with negative health outcomes, allowing for targeted interventions and policies to be developed and implemented. When working conditions are optimized to promote good health and well-being, it can have a positive impact on workforce productivity. By identifying the factors that influence occupational health outcomes, the study can help inform strategies to create healthier work environments that support employee satisfaction, engagement, and performance.

3.3 Population

Primary resources such as distributing questionnaires to employees working in the construction industry are targeted as respondents for this study to have a better understanding of current working conditions. The minimum target number of respondents is 200 respondents while the maximum number is 500 respondents. The age limit for this study is from 18 years old to 60 years old. The study will have increased statistical power to detect meaningful effects and relationships between working conditions and occupational good health and well-being outcomes. A larger sample size enhances the study's ability to detect smaller but potentially important associations, thereby increasing the robustness and reliability of the findings.

3.4 Sampling Design

In this study, convenience sampling, a non-probability sampling design, was utilized to select respondents from multiple construction sites located within the targeted geographical area, which is Klang Valley, Malaysia in this particular study. This method will be chosen to obtain respondents as a sample population that is readily available and convenient when distributing the questionnaire. This method is often cost-effective compared to other sampling designs, as it requires fewer resources and logistics. Therefore, using this method, respondents can be selected within the location before the required sample size is reached, which is also advantageous as the questionnaires can be administered and acquired at a large scale within the time frame.

3.5 Instrument Measurement

The research instrument that will be used is a questionnaire (refer to Appendix A) that likely include items about various aspects of working conditions such as physical exertion, exposure to hazards, work schedules, job demands, and social support. This instrument allows for a standardized and structured approach, ensuring consistency in data collection across respondents. By analyzing the responses obtained from the questionnaire, researchers will be able to assess the effect of working conditions on the occupational health and well-being of individuals in the construction industry in Klang Valley, Malaysia.

The demographic information collected from respondents in this study includes various factors to gain a comprehensive understanding of the sample characteristics. Respondents are asked to provide their age in years, indicating the specific range that represents their current age. Additionally, respondents are asked to indicate their gender, choosing from options such as male, female, or other. Marital status is assessed to gather information on respondents' relationship status, including options such as single, married, widowed, or divorced. Educational level is measured by asking respondents to indicate their highest level of education completed, ranging from secondary school (SPM) to doctoral degree (PhD), or none of them between the range. Respondents are also asked to provide their current position level within the construction industry, such as fresh/entry level, non-executive, junior executive, senior executive, manager, and senior manager. To capture the respondents' level of experience, the survey includes a question about their total years of working experience in the construction industry. Income level is assessed by respondents choosing the income range that best represents their earnings. Lastly, respondents indicate the average number of working hours they spend per week in their construction industry job with options of less than 48 hours, 48 hours, and more than 48 hours. Collecting this demographic information enables a comprehensive characterization of the sample and allows for the exploration of potential relationships between demographic factors and the variables of interest in the study.

Some statements of the questionnaire are constructed by referring to Health and Safety Executive (HSE) Management Standards Indicator Tool for Work-Related Stress (refer to Appendix B) which consists of 35 statements related to 7 aspects: demands, control, managers' support, peer support, relationships, role, and change to determine the levels of work stress with 5-point Likert scale (HSE Management Standards Indicator Tool, n.d.). It is a good research reference as it measures employees' perceptions of their working conditions against management standards set by HSE, a national independent investigator for work-related health, safety, and illness in the United Kingdom.

The survey questionnaire utilized in this study aims to measure the independent variables (IV) such as demand, control, change, and support, as well as the dependent variable (DV) which is occupational good health and well-being among construction industry workers.

Table 2: 4 Variables and Focusing Area of Each Variable

Variables	Focusing Area
Demand	• Workload: Respondents rate the level of workload they experience in their job, considering factors such as the amount and complexity of tasks. • Time Pressure: This item measures respondents' perception of time pressure and deadlines within their work environment.
Control	• Decision-Making Authority: Respondents indicate the level of decision-making authority they have in their job, assessing the extent to which they can make choices and have control over their work. • Skill Utilization: This item assesses respondents' ability to use their skills and expertise in their job tasks.
Change	• Organizational Change: Respondents rate their experience with organizational changes, such as restructuring or changes in management, and how these changes have affected their work. • Job Insecurity: This item measures respondents' perceived job insecurity and uncertainty about their employment status about organizational changes.
Support	• Supervisor Support: Respondents rate the level of support they receive from their immediate supervisor, considering factors such as guidance, feedback, and assistance.

	• Colleague Support: This item assesses respondents' perception of support from their colleagues or coworkers in the workplace.
Occupational Good Health and Well-being	• Physical Health: Respondents rate their overall physical health using a scale, considering factors such as energy levels, physical discomfort, and the presence of any chronic conditions. • Mental Health: This item assesses respondents' mental well-being, including aspects such as stress levels, emotional well-being, and symptoms of depression or anxiety. • Work-Life Balance: This item measures respondents' perceived balance between work and personal life, evaluating their ability to manage responsibilities outside of work.

The questionnaire was reviewed by UTAR Scientific and Ethical Review Committee for clarity, validity, and reliability through a pilot study to ensure accurate measurement of the variables in the construction industry context before the questionnaire was distributed to the public.

3.5.1 Origin Construct

The source of constructing statements for each variable used in this study were taken from previous academic journals and modified, as indicated in the table below:

Table 3: Origin of Constructing Statements for Each Variable

Variables	Statements	Citation
Demand	• I have unachievable deadlines. • I have to work very intensively.	(HSE Management

	• I have to neglect some job tasks because I have too much to do. • I am unable to take sufficient breaks. • I am pressured to work long hours. • I have to work at a fast pace to keep up with demands. • I have unrealistic time pressures. • I find it difficult to meet the demands of different groups at work. • I am expected to be available outside of regular work hours. • I am frequently asked to work on tasks that are not part of my job description. • I am required to stay up-to-date with new technologies or skills.	Standards Indicator Tool, n.d.) (Llorens, Schaufeli, Bakker, & Salanova, 2007) (Brauchli, Schaufeli, Jenny, Fullemann, & Bauer, 2013)
Control	• I do not have the authority to make decisions and have control over how I complete my work tasks. • I am not able to set my own work schedule. • I am not given the freedom to choose which tasks I work on. • I am not encouraged to be creative and innovative in my work. • I am constantly micromanaged or supervised. • I have no input into the goals and objectives of my work. • I am not allowed to take breaks or time off as needed.	(HSE Management Standards Indicator Tool, n.d.) (Sia & Appu, 2015) (Breaugh, 1985)

	• I am not given the ability to adjust my workload to fit my personal needs.	
Change	• I am not given clear information about why organizational changes are necessary. • I am not provided with adequate training to adapt to organizational changes. • My workload is not managed effectively during periods of organizational change. • Communication channels are not open and transparent during periods of organizational change. • I am not involved in decision-making processes related to organizational change. • The impact of organizational changes on my job responsibilities is not clearly communicated to me. • I am not provided with the resources I need to adapt to organizational change. • I am not supported by management during periods of organizational change. • The process of organizational change is poorly managed and inefficient.	(HSE Management Standards Indicator Tool, n.d.) (Ven & Poole, 1995).
Support	• I do not feel that I receive enough support from my colleagues. • My supervisor does not provide me with enough guidance or feedback. • I do not receive enough recognition or praise for my work.	(HSE Management Standards Indicator Tool, n.d.)

	• I do not feel that I can rely on my colleagues to help me when I need it. • My employer does not provide enough resources to support me in my job. • I do not feel that my concerns are taken seriously by management. • I do not receive enough training or development opportunities. • My employer does not provide enough flexibility to accommodate my personal needs. • I do not feel that my contributions are valued by my employer. • I do not have access to adequate health and wellness programs or benefits.	(Rhoades & Eisenberger, 2002)
Occupational Good Health and Well-being	• I frequently experience physical discomfort or pain due to my job. • My job requires me to work long hours or irregular schedules, which negatively affects my health and well-being. • I am exposed to hazardous or stressful working conditions. • My employer does not provide adequate healthcare or health insurance benefits. • My employer does not provide adequate support for mental health issues at work. • I experience a high level of stress or burnout due to my job. • I do not receive enough breaks or time off to rest and recharge.	(Boksen & Tops, 2008) (Lingard, Brown, Bradley, Bailey, & Townsend, 2007) (Abdelhamid & Everett, 2002) (Ibem, Anosike, Azuh, & T.O., 2011)

	• I do not have access to clean water, sanitation, or hygiene facilities at work. • I do not feel that my employer values my health and well-being as a priority.	(Workplace Well-being, 2022).

3.5.2 Correlations Analysis

Pearson correlation coefficient is used in this research to analyze the relationship between the variables. The coefficient (r) obtained from the analysis indicates both the direction and strength of the linear relationship between the variables. A coefficient value of 1.0 suggests a perfect positive relationship, while -1.0 indicates a perfect negative relationship. On the other hand, a correlation coefficient of 0 indicates no linear relationship between the variables.

In linear regression analysis, the Pearson correlation coefficient is used to determine how well the independent variable(s) predict the dependent variable. If the correlation coefficient (r) is positive, it indicates a positive linear relationship, meaning that as the values of the independent variable(s) increase, the values of the dependent variable tend to increase as well. Conversely, a negative correlation coefficient implies a negative linear relationship, where an increase in the independent variable(s) corresponds to a decrease in the dependent variable.

3.5.3 Multiple Regression Analysis

In linear regression analysis, the goal is to model the relationship between a dependent variable (DV) and one or more independent variables (IV) using a linear equation. The multiple regression equation for the dependent and independent variables are formulated as follows:

$$\hat{Y} = \alpha 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 + e$$

$\hat{Y}$= Dependent Variable

α = Y intercept

β = Regression coefficient

e – error (Residuals)

3.6 Data Collection

After the questionnaire is approved by the UTAR Scientific and Ethical Review Committee, it will be distributed online via Whatsapp and Facebook groups, while printed questionnaire will be distributed physically at construction companies and construction sites within Klang Valley to recruit respondents from the construction industry who will voluntarily participate in the study. Respondents will be provided with detailed information about the study objectives, and informed consent will be obtained from each participant to ensure their voluntary participation and understanding of the research before start to answer the questionnaire.

Some respondents may experience emotional distress or discomfort when responding to questions related to their occupational good health and well-being. The questionnaire may touch upon sensitive topics such as work-related stress, injuries, or mental health concerns. To minimize potential distress, respondents will be provided with clear instructions, informed about the voluntary nature of their participation, and offered support resources if needed. Respondents will be assured that their responses will not impact their employment status or personal circumstances.

Once the respondents complete the questionnaire, data will be collected, stored securely to maintain confidentiality, and further analyzed by the researcher with the use of SPSS software. The result from the analyzed data will be interpreted and evaluated to determine the effect of working conditions on occupational good health and well-being. In this study, no specific experimental interventions or procedures are exclusively performed for research purposes. The research design primarily relies on the administration of a questionnaire to gather information about respondents' experiences and perceptions related to their working conditions, health, and well-being.

In this study, the minimum target number of respondents is 200 people to detect meaningful effects related to the working conditions and occupational good health and well-being outcomes in the construction industry. As for statistical methods used to analyze the data, descriptive statistics such as mean, mode, and median will be used to summarize the characteristics of the sample, IV, and dependent variables DV. Then,

inferential statistics such as t-statistic and analysis of variance (ANOVA) will be used to draw conclusions and make inferences about the population based on the collected sample data. After that, correlation analysis and regression analysis will be conducted to examine the strength and direction of associations between IVs and DV, and investigate the predictive relationship between IVs and DV while controlling for potential confounding variables.

3.7 Descriptive Statistics

Descriptive statistics is important to organize, summarize and communicate data in a meaningful way, and facilitate data exploration and initial insights before applying more advanced statistical analysis or modeling techniques. The demographic data has been measured as below:

Table 4: Age Group of Participants

Age	Frequency	Percent (%)
18-24	28	13.8
25-34	67	33.0
35-44	43	21.2
45-54	45	22.2
55 and above	20	9.9
Total	203	100.0

In the table above, the largest age group is the 25-34 category, with 67 individuals, comprising 33.0% of the total population. The 55 and above age group has the smallest frequency, with 20 individuals, representing 9.9% of the population.

Table 5: Gender of Participants

Gender	Frequency	Percent (%)
Male	122	60.1
Female	81	39.9
Total	203	100.0

The majority of the population or sample is male, with a frequency of 122 individuals, representing 60.1% of the total population. The female population has a lower frequency, with 81 individuals, accounting for 39.9% of the total population.

Table 6: Marital Status of Participants

Marital status	Frequency	Percent (%)
Single	64	31.5
Married	122	60.1
Widowed	14	6.9
Divorced	3	1.5
Total	203	100.0

The majority of the population or sample is married, with a frequency of 122 individuals, representing 60.1% of the total population, which indicates that married individuals form the largest group within the population. The divorced category has the smallest frequency, with only 3 individuals, representing 1.5% of the population, which suggests that divorce is relatively less common in this particular population.

Table 7: Highest Educational Level of Participants

Highest educational level	Frequency	Percent (%)
SPM	27	13.3
Diploma / Certificate / Vocational	69	34.0
Degree	60	29.6
Master	42	20.7
PhD	5	2.5
Total	203	100.0

The most common highest educational level among the population is the Diploma/Certificate/Vocational category, with a frequency of 69 individuals, representing 34.0% of the total population. The PhD category has the smallest frequency, with only 5 individuals, accounting for 2.5% of the population. This indicates a relatively lower proportion of individuals who have pursued and obtained a doctoral degree.

Table 8: Position Level of Participants

Position level	Frequency	Percent (%)
Fresh / Entry level	27	13.3
Non-executive	8	3.9
Executive	36	17.7
Senior Executive Junior	70	34.5
Manager	31	15.3
Senior Manager	31	15.3
Total	203	100.0

The most common position level among the population is “Senior Executive Junior” with a frequency of 70 individuals, representing 34.5% of the total population. This

suggests that a significant proportion of the population holds a mid-level or intermediate position. The "Non-executive" category has the lowest frequency, with only 8 individuals, accounting for 3.9% of the population. This indicates a smaller proportion of individuals in non-executive roles.

Table 9: Working Experience of Participants in Current Position

Working experience in current position	Frequency	Percent (%)
Less than 12 months	38	18.7
1 – 5 years	94	46.3
6 – 10 years	14	6.9
11 – 15 years	15	7.4
16 – 20 years	7	3.4
21 years and above	35	17.2
Total	203	100.0

The most common category of working experience in the current position is "1 – 5 years," with a frequency of 94 individuals, representing 46.3% of the total population. The category of "16 – 20 years" has the lowest frequency, with only 7 individuals, accounting for 3.4% of the population.

Table 10: Income Level of Participants in Current Position

Income level	Frequency	Percent (%)
RM2001 – RM4000	88	43.3
RM4001 – RM6000	53	26.1
RM6001 – RM8000	9	4.4
More than RM8000	53	26.1
Total	203	100.0

The majority of individuals fall within the RM2001-RM4000 income range, followed by a significant proportion of individuals with higher incomes above RM8000 or within the RM4001-RM6000 range. There is a smaller proportion of individuals with incomes in the RM6001-RM8000 range.

Table 11: Participants' Working Hours Per Week

Working hours per week	Frequency	Percent (%)
Less than 48 hours	11	5.4
48 hours	64	31.5
More than 48 hours	128	63.1
Total	203	100.0

The majority of individuals work more than 48 hours per week, while a significant proportion has standard working hours of 48 hours per week. There is a smaller proportion of individuals who work less than 48 hours per week, indicating part-time or reduced-hour arrangements.

As for the Likert scale data, the central tendency is measured by mean (average), median (middle value), and mode (most common value) as table below:

Table 12: Mean, Median, and Mode of Each Statement

Statements	Mean	Median	Mode
D1	3.6	4	4
D2	4.1	4	4
D3	3.7	4	4
D4	3.0	3	3
D5	3.8	4	4
D6	4.4	5	5
D7	3.6	4	4
D8	2.9	3	4
D9	3.3	3	3
D10	3.1	3	2
D11	4.3	5	5
CO1	2.9	3	4
CO2	3.0	3	2
CO3	3.0	3	3
CO4	2.3	2	2
CO5	2.9	3	2
CO6	2.4	2	2
CO7	2.3	2	2
CO8	2.9	3	2
CH1	3.0	3	2
CH2	2.6	2	2
CH3	3.3	3	4
CH4	3.0	3	2
CH5	3.0	4	4
CH6	2.9	3	3
CH7	2.9	3	4
CH8	2.6	3	3
CH9	3.4	3	3

S1	2.7	3	3
S2	2.5	2	2
S3	2.9	3	3
S4	3.3	3	4
S5	2.9	3	3
S6	3.6	4	4
S7	3.2	4	4
S8	3.2	3	3
S9	3.4	3	4
S10	2.7	3	4
O1	3.2	3	4
O2	3.7	4	4
O3	2.9	3	3
O4	2.0	2	2
O5	4.1	4	5
O6	3.7	4	4
O7	2.9	3	3
O8	1.7	2	2
O9	3.1	3	3

As mentioned in the previous chapter, the Likert scale, with a specific range of 1 to 5, was used for all statements of Demand (D), Control (CO), Change (CH), Support (S), and Occupational Good Health and Well-being (O) in the distributed questionnaire. The findings from the distributed questionnaire reveal respondents' perceptions regarding different aspects of their work environment.

In the Demand section, respondents expressed a higher level of agreement with the statement "I have to work at a fast pace to keep up with demands" (D6), suggesting a need to work quickly. However, they disagreed more with the statement "I find it difficult to meet the demands of different groups at work" (D8), indicating less difficulty in meeting the demands of diverse groups. Regarding Control, respondents

agreed more with statements such as “I am not able to set my own work schedule” (CO2) and “I am not given the freedom to choose which tasks I work on” (CO3), indicating a lack of control in these areas. Conversely, respondents showed lower agreement with statements like “I am not encouraged to be creative and innovative in my work” (CO4) and “I am not allowed to take breaks or time off as needed” (CO7), suggesting a perceived level of encouragement for creativity and the freedom to take breaks or time off.

In terms of Change, respondents expressed higher agreement with the statement “The process of organizational change is poorly managed and inefficient” (CH9), indicating dissatisfaction with how organizational changes are handled. However, they disagreed more with the statements “I am not provided with adequate training to adapt to organizational changes” (CH2) and “I am not supported by management during periods of organizational change” (CH8), suggesting the perceived provision of adequate training and support from management. When it comes to Support, respondents agreed more with the statement “I do not feel that my concerns are taken seriously by management” (S6), indicating a lack of seriousness from management in addressing their concerns. On the other hand, they disagreed more with the statement “My supervisor does not provide me with enough guidance or feedback” (S2), suggesting a perception of receiving sufficient guidance or feedback from supervisors.

Lastly, in the Occupational Good Health and Well-being section, respondents expressed higher agreement with the statement “My employer does not provide adequate support for mental health issues at work” (O5), indicating a perceived lack of support for mental health. Conversely, they disagreed more with the statement “I do not have access to clean water, sanitation, or hygiene facilities at work” (O8), suggesting access to such facilities.

CHAPTER 4

RESEARCH RESULT

4.1 Correlation Between IV and DVs

The data from 203 responses collected through a distributed questionnaire were processed and analyzed using tests such as correlation and regression tests.

Table 13: Correlation Between Average of Each Independent Variable and Dependent Variable

	Occupational Good Health and Well-being Average
Demand Average	0.640****
Control Average	0.321***
Change Average	0.431***
Support Average	0.767****

**negative strong correlation (-1.0 to -0.5)*

***negative mild correlation (-0.5 to 0.0)*

****positive mild correlation (0.0 to 0.5)*

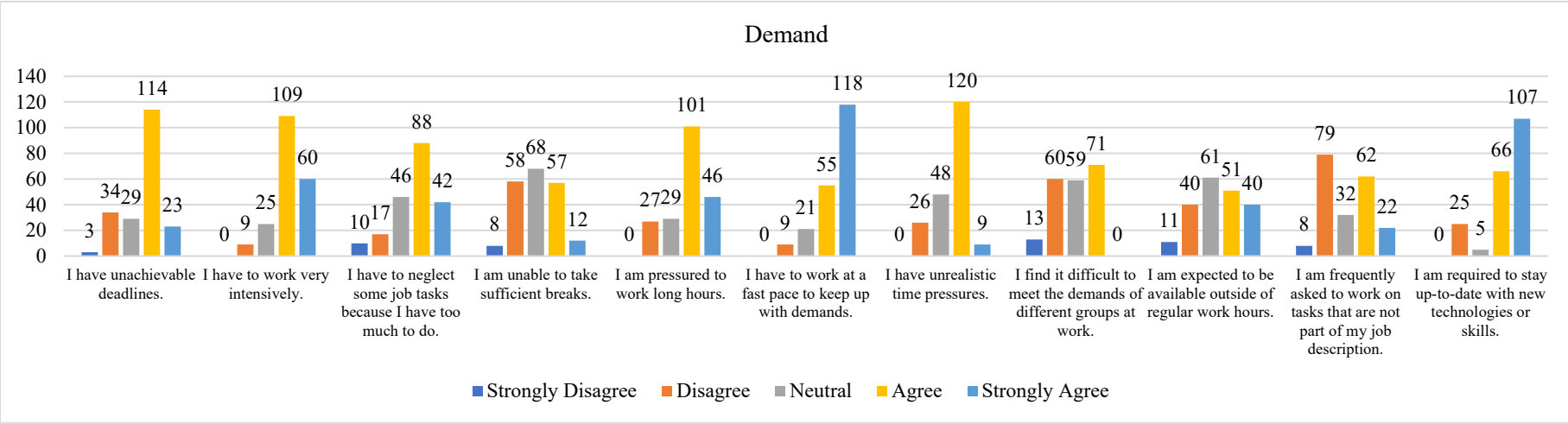
*****positive strong correlation (0.5 to 1.0)*

The correlation coefficient of 0.640 indicates a strong positive relationship between the level of Demand and Occupational Good Health and Well-being. This indicates that as work demands increase, there is a tendency for Occupational Good Health and Well-being to improve to some extent. The correlation coefficient of 0.321 indicates a moderate positive relationship between the level of Control and Occupational Good Health and Well-being. This suggests that higher levels of Control are associated with better Occupational Good Health and Well-being on average, but the relationship is not as strong as with Demand. The correlation coefficient of 0.431 indicates a moderate positive relationship between the level of Change and Occupational Good Health and Well-being. The correlation coefficient of 0.767 indicates a strong positive relationship between the level of Support and Occupational Good Health and Well-being. This suggests that higher levels of Support are strongly associated with better Occupational Good Health and Well-being on average.

In summary, based on the correlation coefficients, Demand, Control, Change, and Support all show positive relationships with Occupational Good Health and Well-being. Among these factors, Support has the strongest correlation, indicating its significant influence on Occupational Good Health and Well-being. Demand and Change also have meaningful correlations, while the correlation with Control is comparatively weaker.

4.1.1 Demand

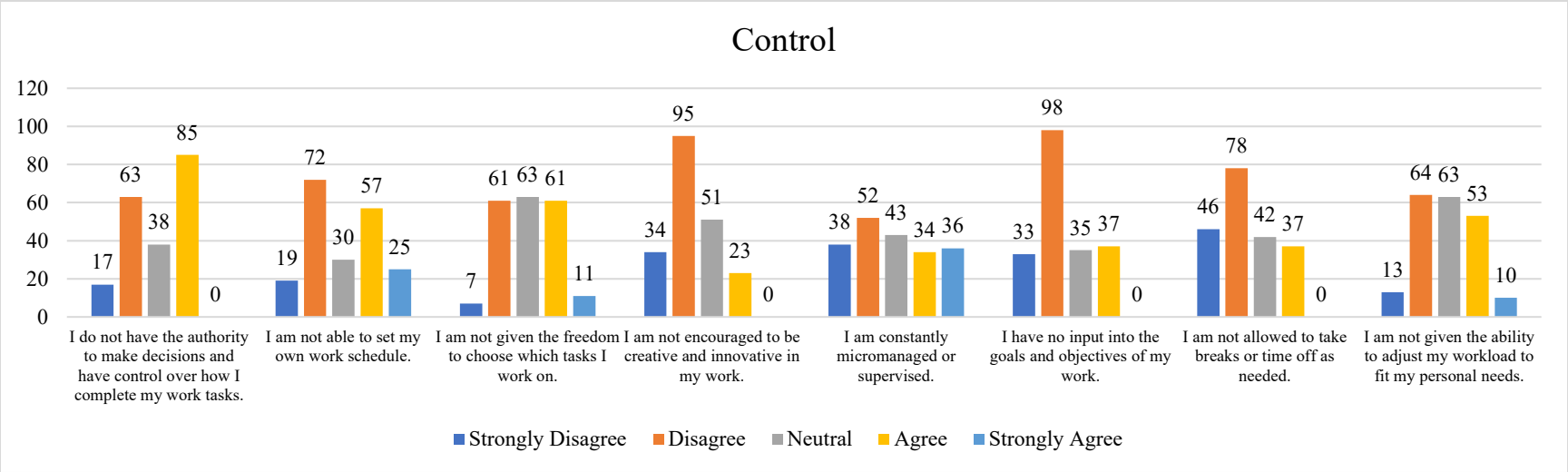
Figure 2: 5-Point Likert Scale Result of 11 Statements of Demand



The correlation coefficient of 0.640 indicates a strong positive relationship between the level of Demand and Occupational Good Health and Well-being. The results from 203 respondents are indicating that they feel the pressure of time constraints and struggle to meet the expectations set by their deadlines, and they perceive their work to be demanding and requiring high levels of effort and concentration. However, they may feel overwhelmed and unable to fully prioritize and complete all their responsibilities, which causes the feeling of restriction in their ability to rest and rejuvenate during work as they perceive external or internal expectations to work beyond regular hours, potentially leading to work-life imbalance. The statement with the highest number of respondents who strongly agreed is “I have to work at a fast pace to keep up with demands.” Which implies that they feel the need to maintain a rapid work pace to meet the requirements of their job. These factors can lead to role ambiguity, physical and mental exhaustion, increased workload, and potential stress, affecting employees’ well-being.

4.1.2 Control

Figure 3: 5-Point Likert Scale Result of 8 Statements of Control

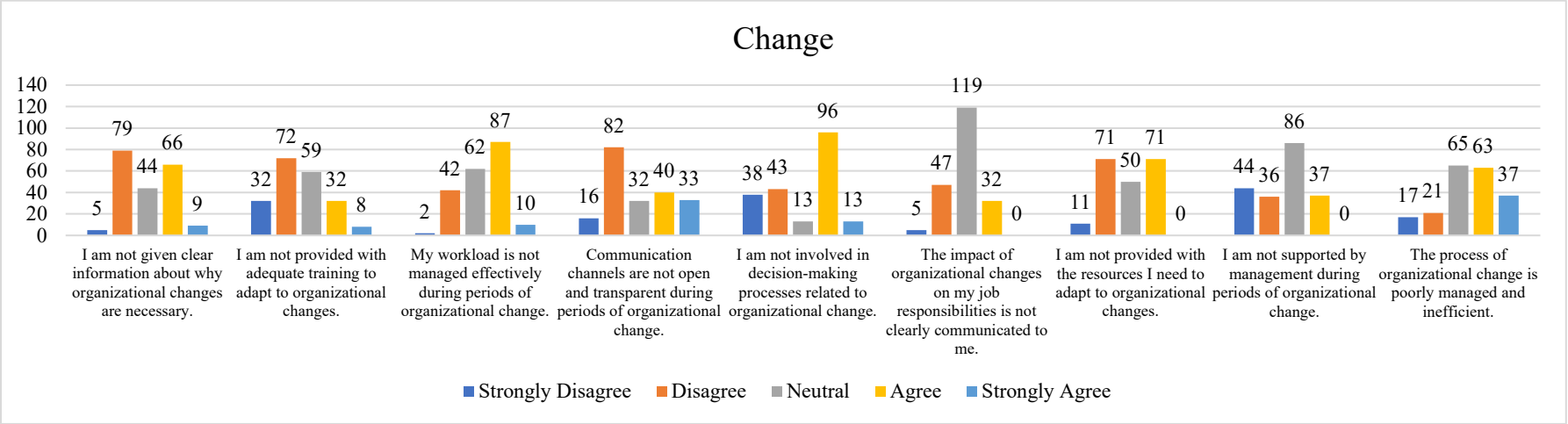


The correlation coefficient of 0.321 indicates a moderate positive relationship between the level of Control and Occupational Good Health and Well-being. The statement with the highest number of respondents who agreed is "I do not have the authority to make decisions and have control over how I complete my work tasks." Which indicates a perceived lack of empowerment in decision-making processes and potential limitations in their ability to work autonomously. Fewer respondents strongly agreed with these Control statements, suggesting that there might still be some room for flexibility or varying degrees of dissatisfaction among respondents. While the highest number of respondents who strongly disagree is "I am not allowed to take breaks or time off as needed.", indicating a strong perception that they have the freedom and flexibility to manage their breaks and time off according to their needs. The highest number of respondents who disagree is "I have no input into the

goals and objectives of my work.", indicating a perception that they do have some level of input, suggesting a higher level of involvement in defining and shaping their work objectives.

4.1.3 Change

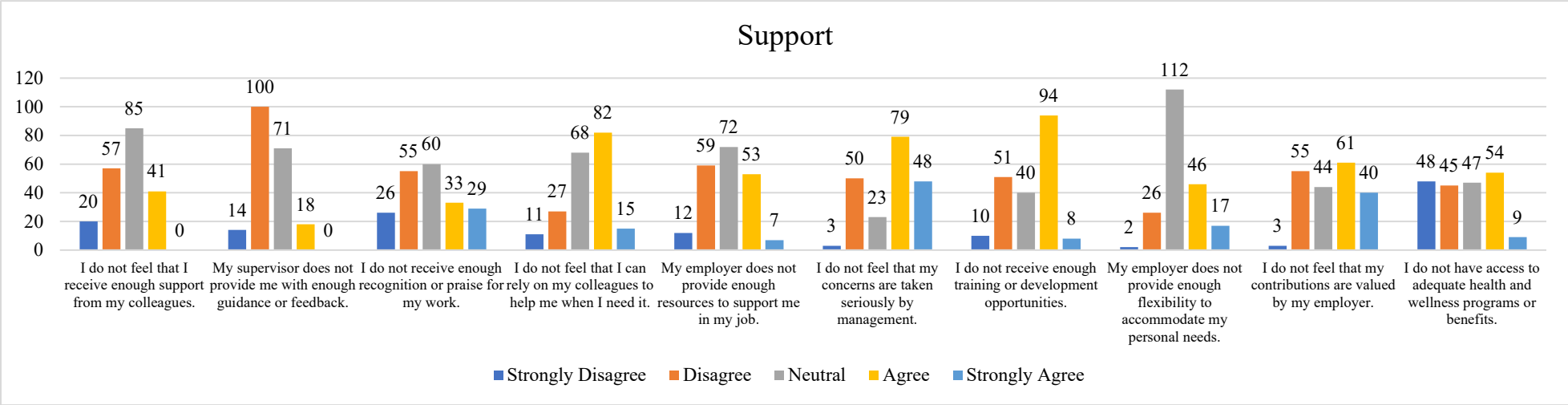
Figure 4: 5-Point Likert Scale Result of 9 Statements of Change



The correlation coefficient of 0.431 indicates a moderate positive relationship between the level of Change and Occupational Good Health and Well-being. A total of 119 respondents chose the "Neutral" option for the statement "The impact of organizational changes on my job responsibilities is not clearly communicated to me.", indicating that they neither agreed nor disagreed with the statement and suggests that a significant portion of the respondents neither perceived a lack of clear communication nor felt that the impact of organizational changes on their job responsibilities was adequately communicated. The statement that was agreed by the highest number of respondents is "I am not involved in decision-making processes related to organizational change.", indicating a perceived level of involvement and participation in decision-making, which can positively impact employee engagement and buy-in during periods of change. The highest number of respondents who disagree is "I am not given clear information about why organizational changes are necessary" which means most respondents felt that they were provided with clear information about why organizational changes are necessary.

4.1.4 Support

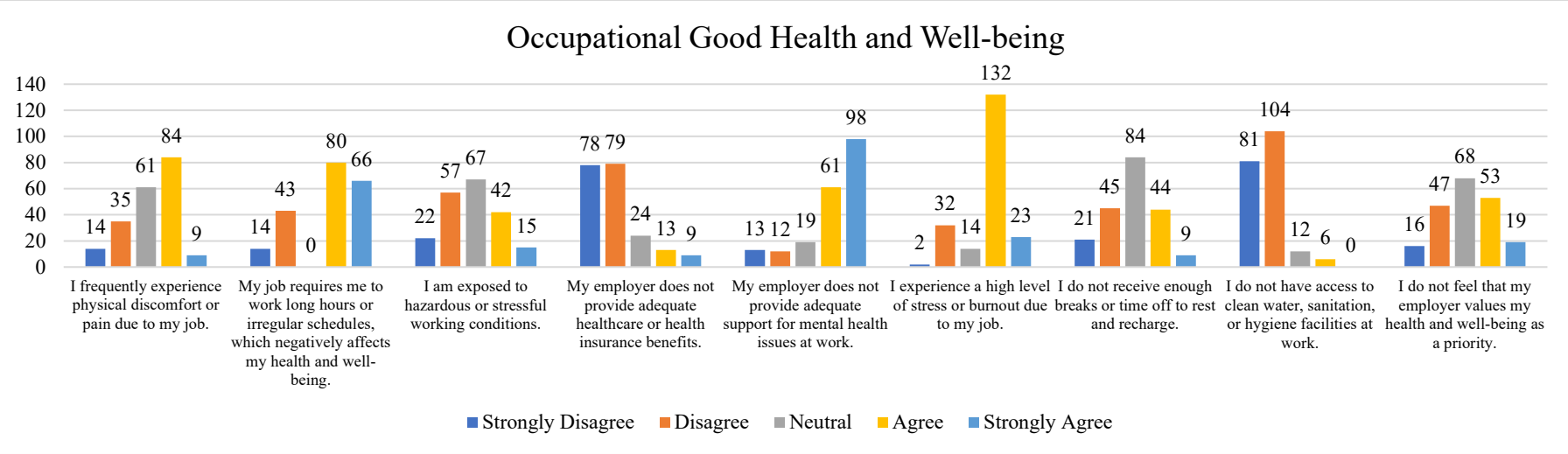
Figure 5: 5-Point Likert Scale Result of 10 Statements of Support



The correlation coefficient of 0.767 indicates a strongest positive relationship between the level of Support and Occupational Good Health and Well-being. The highest number of respondents (112) selected the "Neutral" option for the statement "My employer does not provide enough flexibility to accommodate my personal needs", indicating a lack of strong agreement or disagreement regarding the flexibility provided by their employer to accommodate their personal needs, while the highest number of respondents (100) selected the "Disagree" option for the statement "My employer does not provide enough flexibility to accommodate my personal needs", indicating that they feel their supervisor provides them with enough guidance or feedback. A total of 94 respondents chose the "Agree" option for the statement "I do not receive enough training or development opportunities." This indicates a lack of investment in their professional growth and development by their employer.

4.1.5 Occupational Good Health and Well-being

Figure 6: 5-Point Likert Scale Result of 9 Statements of Occupational Good Health and Well-being



Based on the table above, the highest number of respondents (98) strongly agreed that their employer does not provide adequate support for mental health issues at work, which highlights a widespread perception of inadequate support for mental health in the workplace, indicating a need for more comprehensive mental health resources and support. The highest number of respondents (132) agreed that they experience a high level of stress or burnout due to their job, indicating that a significant number of individuals are experiencing significant stress or burnout, which can have adverse effects on their well-being and performance. The highest number of respondents (84) selected the "Neutral" option for the statement "I do not receive enough breaks or time off to rest and recharge.", indicating a lack of strong agreement or disagreement regarding not receiving enough breaks or time off to rest and recharge. The highest number of respondents (104) disagreed that they do not have access to clean water, sanitation, or hygiene facilities at work which indicates that a majority of individuals have access to

these essential facilities, promoting a healthier and safer work environment. The majority of respondents selected either “Strongly Disagree” (78) or “Disagree” (79) for the statement “My employer does not provide adequate healthcare or health insurance benefits.”, this indicates they do not agree with the assertion that their employer does not provide adequate healthcare or health insurance benefits.

4.2 Regression

Table 14: Pearson Correlation Coefficient of Linear Regression Analysis

R	R Square	Adjusted R Square	Standard Error of the Estimate	Durbin-Watson
.813	.661	.654	.44639	2.354

The R-value of 0.813 shows that there is a strong and positive correlation among the variables. The coefficient of determination (R-squared) is 0.661, which indicates that approximately 66.1% of the variance in the dependent variable can be explained by the independent variable(s) included in the model. Additionally, the Durbin-Watson statistic of 2.354 indicates no significant autocorrelation in the residuals as a value between 1.5 and 2.5 is generally considered acceptable.

Table 15: ANOVA Analysis

	Sum of Squares	df	Mean Square	F	Sig.
Regression	76.977	4	19.244	96.576	.000
Residual	39.455	198	.199		
Total	116.432	202			

Based on the ANOVA Analysis table above, the significance value, often denoted as the p-value, indicates the probability of obtaining the observed F-value by chance alone. In this case, the significance value is .000, which is less than the conventional threshold of 0.05 (5%). This suggests that the regression model as a whole is statistically significant with a confidence level of 95% error.

Table 16: Multiple Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Collinearity Statistics	
	B	Standard Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	-.610	.213		-2.865	.005	-1.031	-.190		
Demand Average	.467	.073	.351	6.415	.000	.323	.610	.571	1.750
Control Average	.034	.059	.028	.575	.566	-.082	.150	.698	1.433
Change Average	-.165	.063	-.153	-2.611	.010	-.290	-.040	.499	2.006
Support Average	.769	.064	.643	11.944	.000	.642	.897	.590	1.694

The regression coefficient (B) for the Demand Average is 0.467, which means on average, for a one-unit increase in the Demand Average, the dependent variable is expected to increase by 0.467 units, assuming all other variables are held constant. The regression coefficient for the Control Average is 0.034, but since the coefficient is small and the t-value is close to zero, the relationship may not be statistically significant. The regression coefficient for the Change Average is -0.165 which indicates an inverse relationship between these variables. The regression coefficient for the Support Average is 0.769 which indicates a positive relationship between these variables.

For Demand Average, the t-statistic (t) is 6.415 which indicates that the coefficient for the Demand Average is 6.415 times larger than its standard error, meaning that the more significant the relationship between the predictor and the dependent variable, Occupational Good Health and Well-being. The t-statistic for Control Average is 0.575, indicating that the coefficient for the Control Average is relatively small compared to its standard error, and since the t-statistic is close to zero, the relationship between this predictor and the dependent variable is not statistically significant at the conventional 0.05 significance level. As for Change Average, the t-statistic is -2.611 which indicates that there is an inverse relationship between the Change Average and the dependent variable. Finally, the t-statistic of the Support Average is 11.944, indicating a strong

and statistically significant relationship between the Support Average and the dependent variable.

As for significance values (p-values), the p-value of 0.000 suggests that the correlation between Occupational Good Health and Well-being and Demand Average is statistically significant. In other words, the strong positive relationship observed between these variables is unlikely to have occurred by chance alone. The p-value of 0.566 indicates that the correlation between Occupational Good Health and Well-being and Control Average is not statistically significant. This means that the observed relationship may be due to random chance, and there is insufficient evidence to conclude a significant association between these variables. The p-value of 0.010 suggests that the correlation between Occupational Good Health and Well-being and Change Average is statistically significant. While the p-value of 0.000 indicates that the correlation between Occupational Good Health and Well-being and Support Average is statistically significant.

In conclusion, the Demand Average, Change Average, and Support Average are all statistically significant predictors of the dependent variable. However, the Control Average does not appear to have a statistically significant impact on the dependent variable.

Multiple regression equation for the dependent and independent variables are formulated as follows:

$$\hat{Y} = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e$$

Occupational Good Health and Well-being = (-0.610) + 0.467 (Demand) + 0.034(Control) - 0.165 (Change) + 0.769 (Support)

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1 Introduction

The construction industry is known for its demanding and challenging working conditions, which can significantly impact the occupational health and well-being of its employees. Upon conducting the analysis, the study delved into a rigorous examination of the data collected from employees in the construction industry to explore the relationship between different working conditions and their occupational good health and well-being. This involved employing appropriate statistical methods and techniques to thoroughly analyze the data and draw meaningful conclusions.

5.2 Summary of Statistics

The primary focus of this study was to investigate the impact of different working conditions on the occupational good health and well-being of employees in the construction industry. The first research question is “How does the demand affect the occupational good health and well-being of employees in the construction industry?”. The hypothesis posited that there is a significant relationship between demand and

occupational good health and well-being in the construction industry. The analysis revealed a positive and statistically significant association, with a coefficient (B) of 0.467. The t-statistic was 6.415, and the p-value was 0.000, providing strong evidence to support the hypothesis.

Moving on to the second research question, “How does the control affect the occupational good health and well-being of employees in the construction industry?”. The hypothesis suggested that there is an insignificant relationship between control and occupational good health and well-being in the construction industry. The analysis, indeed, indicated a weak and statistically insignificant relationship, with a coefficient (B) of 0.034. The t-statistic was 0.575, and the p-value was 0.566, implying that control had no significant impact on the employees’ occupational good health and well-being.

The third research question is “How does the change affect the occupational good health and well-being of employees in the construction industry?”. The hypothesis proposed an inverse relationship between change and occupational good health and well-being in the construction industry. The results supported the hypothesis, revealing a negative and statistically significant relationship, with a coefficient (B) of -0.165. The t-statistic was -2.611, and the p-value was 0.010, indicating that higher levels of change were associated with reduced occupational good health and well-being among employees.

Finally, the last research question is “How does the support affect the occupational good health and well-being of employees in the construction industry?”. The hypothesis suggested a significant relationship between support and occupational good health and well-being in the construction industry. The analysis corroborated this hypothesis, showing a strong and statistically significant relationship, with a coefficient (B) of 0.769. The t-statistic was 11.944, and the p-value was 0.000, providing robust evidence that greater support was associated with improved occupational good health and well-being among employees.

5.3 Implications and Recommendations

The results of the study have several implications for the occupational good health and well-being of employees in the construction industry in Klang Valley, Malaysia. The higher levels of demand can have a positive impact on employees' well-being in this industry, therefore organizations should ensure that job demands are reasonable and manageable for employees. Implementing workload management strategies, providing adequate resources and support, and promoting a healthy work-life balance can contribute to maintaining employee well-being and fostering a supportive culture that values personal well-being.

On the other hand, the level of control employees has over their work may not strongly influence their well-being in the construction industry, but it is still recommended for organizations to provide employees with a certain level of autonomy and decision-making authority. Empowering employees to have some control over their work, such as involving employees in decision-making processes, soliciting their input, and providing opportunities for skill development and growth, can enhance job satisfaction and engagement, even if the direct impact on well-being may be less pronounced.

Additionally, the increased levels of change in the work environment may negatively impact employees' well-being in the construction industry. Organizations should, therefore, focus on managing and communicating organizational changes effectively by providing clear explanations, involving employees in the change process, and offering support and training. By ensuring a smooth transition and minimizing uncertainty and disruptions, organizations can help alleviate stress and mitigate the potential negative impact on employees' well-being. Evaluating the existing organizational structure and ensuring it promotes clear communication channels, effective decision-making processes, and appropriate levels of authority and responsibility are recommended to enhance employee engagement, minimize conflicts, and improve overall operational efficiency.

Moreover, providing support to employees is important in the construction industry, so organizations should prioritize creating a supportive work environment that fosters

social support mechanisms. Such as mentorship programs, employee assistance programs, and open communication channels for employees to seek guidance and support. Managers and supervisors should also be trained to provide emotional support and guidance to employees, recognizing the significant impact it can have on their well-being. Strengthening Human Resource practices by implementing policies and procedures that can prioritize employee well-being such as including flexible work arrangements, regular performance evaluations, career development opportunities, and employee recognition programs. Organizations can invest more in training and development programs that enhance the skills and capabilities of employees across all levels, from professional staff to on-site workers. This can include technical skills training, safety training, and promoting a learning culture within the organization.

5.4 Limitations of Research Study

One potential limitation of the research study is the use of convenience sampling, where participants are selected based on their availability and proximity. This introduces sample bias since the sample may not accurately represent the entire population of the construction industry. For example, the study may overrepresent certain types of workers or exclude individuals who are less accessible, leading to a sample that may not be fully representative, and the generalizability of the findings to a broader context or the entire construction industry may be limited.

Another limitation is the cross-sectional design of the study, where data is collected at a single point in time. While cross-sectional studies can provide valuable insights, they cannot establish causality or determine the direction of relationships between variables. For example, the study may find a correlation between working conditions and occupational good health and well-being, but it cannot determine if working conditions cause changes in well-being or if well-being influences perceptions of working conditions. To establish causality, longitudinal studies that track participants over time or experimental designs that manipulate variables are needed to track changes and

observe the relationships between variables over time, providing a more robust basis for establishing causality.

The study focuses on a specific set of independent variables, such as demand, control, change, and support, and their relationship with occupational good health and well-being. While these variables are important, they may not capture the full range of factors that can influence well-being in the construction industry. For instance, individual characteristics, such as personality traits or coping mechanisms, and organizational factors, such as leadership styles or team dynamics, are not fully considered. A more comprehensive examination of these factors would provide a more nuanced understanding of their influence on occupational well-being.

Lastly, the study may not account for all potential confounding factors that could influence the relationship between working conditions and occupational good health and well-being. Factors such as personal life circumstances, external stressors, or individual coping mechanisms may impact well-being but may not be fully controlled or measured in the study. These unaccounted factors may introduce additional variability in the findings and limit the ability to draw definitive conclusions.

5.5 Conclusion

The research study titled “Effect of Working Conditions on Occupational Good Health and Well-being in the Construction Industry in Klang Valley, Malaysia” examined the relationship between working conditions and occupational well-being and the findings revealed significant correlations between certain working conditions and occupational well-being in Klang Valley, Malaysia. Specifically, higher levels of Demand and Support were associated with better well-being, while Change showed a negative correlation. However, no significant correlation was found with Control. These results have important implications for practitioners and policymakers to focus more on managing job demands and ensuring they are reasonable and manageable for employees while providing a supportive work environment and effective occupational change management in the construction industry.

While the study has its limitations such as reliance on convenience sampling and cross-sectional design, it contributes to our understanding of the topic. Future research should address these limitations and employ longitudinal studies to establish causality. By implementing the recommendations from this study, organizations can create a work environment that promotes occupational well-being and ultimately leads to improved job satisfaction and productivity in the construction industry.

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APPENDICES

APPENDIX A

QUESTIONNAIRE

The link for the online questionnaire using Microsoft Forms is https://forms.office.com/r/BKxx574UeR

Effect of Working Conditions on Occupational Good Health and Well-being in Construction Industry

Dear Respondent,

Hello! I am a postgraduate student of Master of Business Administration from the Faculty of Accountancy and Management (FAM) of Universiti Tunku Abdul Rahman (UTAR).

My research is "Effect of Working Conditions on Occupational Good Health and Well-being in the Construction Industry". This study aims to determine the variables that may affect occupational good health and well-being in the construction industry. I would like to seek your assistance to participate in the survey by completing this questionnaire. Your participation in this study is clearly significant to the research. You are reminded that your participation in this survey is voluntary. Please be informed that the details provided for this survey is strictly confidential and only grouped data will be presented. Your voluntary participation and valuable input in the research survey are highly appreciated.

If you have any inquiries, please do not hesitate to reach me at : cordelia0615@1utar.my

Thank you.

Your sincerely,
Wong Wei Thong (2005439)

* Required

1. Age *

- ◯ 18-24
- ◯ 25-34
- ◯ 35-44
- ◯ 45-54
- ◯ 55 and above

2. Gender *

- ◯ Male
- ◯ Female

3. Marital Status *

- ◯ Single
- ◯ Married
- ◯ Widowed
- ◯ Divorced

4. Highest educational level *

- ◯ SPM
- ◯ STPM / A-Level / O-Level / Foundation
- ◯ Diploma / Certificate / Volcational
- ◯ Degree
- ◯ Master
- ◯ PhD
- ◯ None of above

5. What is your position level? *

- ◯ Fresh / Entry level
- ◯ Non-executive
- ◯ Junior Executive
- ◯ Senior Executive
- ◯ Manager
- ◯ Senior Manager

6. Working experience in current position *

- ◯ Less than 12 months
- ◯ 1 - 5 years
- ◯ 6 - 10 years
- ◯ 11 - 15 years
- ◯ 16 - 20 years
- ◯ 21 years and above

7. Income Level *

- ◯ Less than RM2000
- ◯ RM2001 - RM4000
- ◯ RM4001 - RM6000
- ◯ RM6001 - RM8000
- ◯ More than RM8000

8. How many hours do you work per week? *

- ◯ Less than 48 hours
- ◯ 48 hours
- ◯ More than 48 hours

9. **Demand** *

Please indicate how strongly you agree or disagree with the statements below by choosing from 1 to 5 which represents:
1 – Strongly Disagree
2 – Disagree
3 – Neutral
4 – Agree
5 – Strongly Agree

	(1) Strongly Disagree	(2) Disagree	(3) Neutral	(4) Agree	(5) Strongly Agree
I have unachievable deadlines.	○	○	○	○	○
I have to work very intensively.	○	○	○	○	○
I have to neglect some job tasks because I have too much to do.	○	○	○	○	○
I am unable to take sufficient breaks.	○	○	○	○	○
I am pressured to work long hours.	○	○	○	○	○
I have to work at a fast pace to keep up with demands.	○	○	○	○	○
I have unrealistic time pressures.	○	○	○	○	○
I find it difficult to meet the demands of different groups at work.	○	○	○	○	○

I am expected to be available outside of regular work hours.	○	○	○	○	○
I am frequently asked to work on tasks that are not part of my job description.	○	○	○	○	○
I am required to stay up-to-date with new technologies or skills.	○	○	○	○	○

10. **Control** *

Please indicate how strongly you agree or disagree with the statements below by choosing from 1 to 5 which represents:
1 – Strongly Disagree
2 – Disagree
3 – Neutral
4 – Agree
5 – Strongly Agree

	(1) Strongly Disagree	(2) Disagree	(3) Neutral	(4) Agree	(5) Strongly Agree
I do not have the authority to make decisions and have control over how I complete my work tasks.	○	○	○	○	○
I am not able to set my own work schedule.	○	○	○	○	○
I am not given the freedom to choose which tasks I work on.	○	○	○	○	○
I am not encouraged to be creative and innovative in my work.	○	○	○	○	○
I am constantly micromanaged or supervised.	○	○	○	○	○
I have no input into the goals and objectives of my work.	○	○	○	○	○
I am not allowed to take breaks or time off as needed.	○	○	○	○	○

I am not given the ability to adjust my workload to fit my personal needs.	○	○	○	○	○

11. **Change** *

Please indicate how strongly you agree or disagree with the statements below by choosing from 1 to 5 which represents:
1 – Strongly Disagree
2 – Disagree
3 – Neutral
4 – Agree
5 – Strongly Agree

	(1) Strongly Disagree	(2) Disagree	(3) Neutral	(4) Agree	(5) Strongly Agree
I am not given clear information about why organizational changes are necessary.	○	○	○	○	○
I am not provided with adequate training to adapt to organizational changes.	○	○	○	○	○
My workload is not managed effectively during periods of organizational change.	○	○	○	○	○
Communication channels are not open and transparent during periods of organizational change.	○	○	○	○	○
I am not involved in decision-making processes related to organizational change.	○	○	○	○	○

The impact of organizational changes on my job responsibilities is not clearly communicated to me.	○	○	○	○	○
I am not provided with the resources I need to adapt to organizational changes.	○	○	○	○	○
I am not supported by management during periods of organizational change.	○	○	○	○	○
The process of organizational change is poorly managed and inefficient.	○	○	○	○	○

12. **Support** *

Please indicate how strongly you agree or disagree with the statements below by choosing from 1 to 5 which represents:
1 – Strongly Disagree
2 – Disagree
3 – Neutral
4 – Agree
5 – Strongly Agree

	(1) Strongly Disagree	(2) Disagree	(3) Neutral	(4) Agree	(5) Strongly Agree
I do not feel that I receive enough support from my colleagues.	○	○	○	○	○
My supervisor does not provide me with enough guidance or feedback.	○	○	○	○	○
I do not receive enough recognition or praise for my work.	○	○	○	○	○
I do not feel that I can rely on my colleagues to help me when I need it.	○	○	○	○	○
My employer does not provide enough resources to support me in my job.	○	○	○	○	○
I do not feel that my concerns are taken seriously by management.	○	○	○	○	○

I do not receive enough training or development opportunities.	○	○	○	○	○
My employer does not provide enough flexibility to accommodate my personal needs.	○	○	○	○	○
I do not feel that my contributions are valued by my employer.	○	○	○	○	○
I do not have access to adequate health and wellness programs or benefits.	○	○	○	○	○

13. **Occupational Good Health and Well-being** *

Please indicate how strongly you agree or disagree with the statements below by choosing from 1 to 5 which represents:
1 – Strongly Disagree
2 – Disagree
3 – Neutral
4 – Agree
5 – Strongly Agree

	(1) Strongly Disagree	(2) Disagree	(3) Neutral	(4) Agree	(5) Strongly Agree
I frequently experience physical discomfort or pain due to my job.	○	○	○	○	○
My job requires me to work long hours or irregular schedules, which negatively affects my health and well-being.	○	○	○	○	○
I am exposed to hazardous or stressful working conditions.	○	○	○	○	○
My employer does not provide adequate healthcare or health insurance benefits.	○	○	○	○	○
My employer does not provide adequate support for mental health issues at work.	○	○	○	○	○

I experience a high level of stress or burnout due to my job.	○	○	○	○	○
I do not receive enough breaks or time off to rest and recharge.	○	○	○	○	○
I do not have access to clean water, sanitation, or hygiene facilities at work.	○	○	○	○	○
I do not feel that my employer values my health and well-being as a priority.	○	○	○	○	○

END OF QUESTIONNAIRE

Thank you for taking the time to complete this survey.

APPENDIX B

HSE MANAGEMENT STANDARDS INDICATOR TOOL

Instructions: It is recognised that working conditions affect worker well-being. Your responses to the questions below will help us determine our working conditions now, and enable us to monitor future improvements. In order for us to compare the current situation with past or future situations, it is important that your responses reflect your work in the last six months.

		Never	Seldom	Sometimes	Often	Always
1	I am clear what is expected of me at work	☐1	☐2	☐3	☐4	☐5
2	I can decide when to take a break	☐1	☐2	☐3	☐4	☐5
3	Different groups at work demand things from me that are hard to combine	☐5	☐4	☐3	☐2	☐1
4	I know how to go about getting my job done	☐1	☐2	☐3	☐4	☐5
5	I am subject to personal harassment in the form of unkind words or behaviour	☐5	☐4	☐3	☐2	☐1
6	I have unachievable deadlines	☐5	☐4	☐3	☐2	☐1
7	If work gets difficult, my colleagues will help me	☐1	☐2	☐3	☐4	☐5
8	I am given supportive feedback on the work I do	☐1	☐2	☐3	☐4	☐5
9	I have to work very intensively	☐5	☐4	☐3	☐2	☐1
10	I have a say in my own work speed	☐1	☐2	☐3	☐4	☐5
11	I am clear what my duties and responsibilities are	☐1	☐2	☐3	☐4	☐5
12	I have to neglect some tasks because I have too much to do	☐5	☐4	☐3	☐2	☐1
13	I am clear about the goals and objectives for my department	☐1	☐2	☐3	☐4	☐5
14	There is friction or anger between colleagues	☐5	☐4	☐3	☐2	☐1
15	I have a choice in deciding how I do my work	☐1	☐2	☐3	☐4	☐5
16	I am unable to take sufficient breaks	☐5	☐4	☐3	☐2	☐1
17	I understand how my work fits into the overall aim of the organisation	☐1	☐2	☐3	☐4	☐5
18	I am pressured to work long hours	☐5	☐4	☐3	☐2	☐1
19	I have a choice in deciding what I do at work	☐1	☐2	☐3	☐4	☐5

20	I have to work very fast	Never ☐5	Seldom ☐4	Sometimes ☐3	Often ☐2	Always ☐1
21	I am subject to bullying at work	Never ☐5	Seldom ☐4	Sometimes ☐3	Often ☐2	Always ☐1
22	I have unrealistic time pressures	Never ☐5	Seldom ☐4	Sometimes ☐3	Often ☐2	Always ☐1
23	I can rely on my line manager to help me out with a work problem	Never ☐1	Seldom ☐2	Sometimes ☐3	Often ☐4	Always ☐5
24	I get help and support I need from colleagues	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
25	I have some say over the way I work	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
26	I have sufficient opportunities to question managers about change at work	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
27	I receive the respect at work I deserve from my colleagues	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
28	Staff are always consulted about change at work	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
29	I can talk to my line manager about something that has upset or annoyed me about work	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
30	My working time can be flexible	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
31	My colleagues are willing to listen to my work-related problems	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
32	When changes are made at work, I am clear how they will work out in practice	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
33	I am supported through emotionally demanding work	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5
34	Relationships at work are strained	Strongly disagree ☐5	Disagree ☐4	Neutral ☐3	Agree ☐2	Strongly agree ☐1
35	My line manager encourages me at work	Strongly disagree ☐1	Disagree ☐2	Neutral ☐3	Agree ☐4	Strongly agree ☐5

Thank you for completing the questionnaire.

APPENDIX C

ETHICAL CLEARANCE APPROVAL LETTER

UNIVERSITI TUNKU ABDUL RAHMAN DU012(A)
Wholly owned by UTAR Education Foundation Co. No. 578227-M

Re: U/SERC/145/2023

9 June 2023

Dr Omar Hamdan Mohammad Alkharabsheh
Department of International Business
Faculty of Accountancy and Management
Universiti Tunku Abdul Rahman
Jalan Sungai Long
Bandar Sungai Long
43000 Kajang, Selangor

Dear Dr Omar Hamdan,

Ethical Approval For Research Project/Protocol

We refer to your application for ethical approval for your research project (Master student's project) and are pleased to inform you that your application has been approved under Expedited Review.

The details of your research project are as follows:

Research Title	Effect of Working Conditions on Occupational Good Health and Well-being in Construction Industry
Investigator(s)	Dr Omar Hamdan Mohammad Alkharabsheh Wong Wei Thong (UTAR Postgraduate Student)
Research Area	Social Sciences
Research Location	Malaysia
No of Participants	500 participants (Age: 18 - 60)
Research Costs	Self-funded
Approval Validity	9 June 2023 - 8 June 2024

The conduct of this research is subject to the following:

(1) The participants' informed consent be obtained prior to the commencement of the research,

(2) Confidentiality of participants' personal data must be maintained,

(3) Compliance with procedures set out in related policies of UTAR such as the UTAR Research Ethics and Code of Conduct, Code of Practice for Research Involving Humans and other related policies/guidelines; and

(4) Written consent be obtained from the institution(s)/company(ies) in which the physical or/and online survey will be carried out, prior to the commencement of the research.

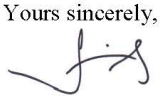
Kampar Campus : Jalan Universiti, Bandar Barat, 31900 Kampar, Perak Darul Ridzuan, Malaysia
Tel: (605) 468 8888 Fax: (605) 466 1313
Sungai Long Campus : Jalan Sungai Long, Bandar Sungai Long, Cheras, 43000 Kajang, Selangor Darul Ehsan, Malaysia
Tel: (603) 9086 0288 Fax: (603) 9019 8868
Website: www.utar.edu.my

Should you collect personal data of participants in your study, please have the participants sign the attached Personal Data Protection Statement for your records.

The University wishes you all the best in your research.

Thank you.

Yours sincerely,



Professor Ts Dr Faidz bin Abd Rahman
Chairman
UTAR Scientific and Ethical Review Committee

c.c Dean, Faculty of Accountancy and Management
Director, Institute of Postgraduate Studies and Research

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