

DEVELOPMENT OF CONCEPTUAL FRAMEWORK ON
THE OCCUPATIONAL STRESS FOR THE
CONSTRUCTION PROJECTS MANAGEMENT STAFF OF
CHINA CONTRACTORS

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**DEVELOPMENT OF CONCEPTUAL FRAMEWORK ON
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**RESEARCH PROJECT SUBMITTED IN FULFILMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
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**FACULTY OF BUILT ENVIRONMENT
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Field of Study: Construction Project Management

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ABSTRACT

Construction project management is one of the most stressful occupations. As China contractors thrived in Malaysia over a decade, their construction project management staff may suffer from occupational stress. This study aims to identify the types of stress, and the key causes of the occupational stress on construction projects management staff of China contractors through the questionnaire survey for 95 project management staffs. The research results show almost all staff suffered from occupational stress and half of them under considerable stress. The dominant types of occupational stress are feeling of tension and restlessness. Regarding the key causes of occupational stress, among 45 most popular key causes of occupational stress, the most significant key causes are project overload, lack of autonomy, poor communication, multitasking and lack of human. In the end of the research, some recommendations to release the occupational stress of the employees were raised.

Keywords: Project Management, Occupational Stress, China Contractors

ABSTRAK

Pengurusan projek pembinaan adalah salah satu pekerjaan yang paling tertekan. Memandangkan kontraktor dari China berkembang maju di Malaysia selama sedekad, kakitangan pengurusan projek pembinaan mereka mungkin mengalami tekanan pekerjaan. Kajian ini bertujuan untuk mengenal pasti jenis tekanan, dan punca utama tekanan pekerjaan terhadap kakitangan pengurusan projek pembinaan kontraktor dari China melalui tinjauan soal selidik untuk 95 kakitangan pengurusan projek. Hasil kajian menunjukkan hampir semua kakitangan mengalami tekanan pekerjaan dan separuh daripada mereka mengalami tekanan yang besar. Jenis tekanan pekerjaan yang dominan ialah perasaan tegang dan gelisah. Antara 45 punca utama tekanan pekerjaan yang paling popular ialah beban projek, kekurangan autonomi, komunikasi yang lemah, multitasking dan kekurangan manusia. Di akhir penyelidikan, beberapa cadangan untuk melepaskan tekanan pekerjaan pekerja telah dibangkitkan.

Kata kunci: Pengurusan Projek, Tekanan Pekerjaan, Kontraktor China

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LIST OF SYMBOLS AND ABBREVIATIONS

CPP	:	Construction Project Professional
AHP	:	Analytic Hierarchy Process
DCS	:	Demand Control Support
ERI	:	Effort Reward Imbalance

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CHAPTER 1: INTRODUCTION

1.1 Introduction

In the chapter, the research background and the existing problem will be stated to present the necessity and urgency to research the topic. Then, the aim and objective of this study will be shown with the recognition of current issues, the research methods, and the scope. Finally, it outlines the structure of this study by briefly explaining each chapter.

1.2 Research Background

Since the reform and opening-up in 1978, the construction industry of China has been the mainstay of the national economy (Han & Ofori, 2017). In terms of employment, the proportion of employment in China's construction industry in 2008 was 4.28%, lower than the lowest level of 6% in developed countries, indicating that China's construction industry itself has a large space for employment absorption. Although the position of construction industry was strengthened, but the proportion of labor compensation in each input decreased by more than 18% points during the ten years (Zhu, 2015). Therefore, for the construction enterprise in China, developing overseas business is an indispensable trend.

International projects and multi-country cooperation represent the comprehensive strength in an increasingly expanding global economy, which could be defined as transnational economic cooperation models with a series of materials, technology and service, which have become one of the most important aspects of international cooperation with the increasingly growth of global economic communication (X. Li, Fei, Rizzuto, & Yang, 2021). When it comes to the overseas contract value for Chinese construction enterprises, since the 1980s, China started to take the construction projects in foreign countries, the international competitiveness of contractors has been gradually enhanced, and both business scope and contract value have increased significantly. In the

2018 Engineering News-Record list of the world's largest 250 international contractors, China accounted for 69, an increase of 3 companies compared with the 2017 list, ranking first in all countries. The overseas turnover of China's 69 contractors was US \$98.93 billion, up 4.6% from 2017 and accounting for 21.1% of the total business of all 250 contractors (Engineering News-Record, 2017; Yang, 2019).

ASEAN countries, after years of development, have achieved rapid economic growth (Gani & Clemes, 2016). The rapidly growing income level has continuously improved the living standard of the people in the ASEAN region, while the demand for infrastructure and services has also increased dramatically. The lagging demand for large-scale infrastructure has also begun to increase substantially, the market space is huge (Bhattacharyay, 2019). In recent years, the turnover of Chinese contractors in ASEAN countries has gradually overtaken Africa and become the largest overseas market (Yang, 2019).

Occupational stress are conditions that jeopardize human emotions and behaviors, which has long been an academic concern. Although it's acknowledged by previous literature that construction industry is one of the stressful professions for being complicated and confrontational (Leung, Ng, Skitmore, & Cheung, 2016), few study looked into it until the first research that focus on the mental condition of construction projects professionals (CPPs) was published in 1989; it studied the construction site managers psychosocial problem in UK, a preliminary but pioneered employees mental research in construction industry.

1.3 Problem Statement

Since the 1980s, China started to take the construction projects in foreign countries, the international competitiveness of contractors has been gradually enhanced, and both business scope and contract value have increased significantly. The overseas turnover of

China's 69 contractors was US \$98.93 billion, up 4.6% from 2017 and accounting for 21.1% of the total business of all 250 contractors (Engineering News-Record, 2017; Yang, 2019).

As China contractors thrive in overseas markets, being away from homeland and working under tremendous pressure can also impose a risk of mental health problems for their staffs, who have been suffered from the potential occupational stress. Ling (2017) concluded that China contractor in Malaysia and Singapore generally had strong financial capacity and offered low bids through low profit margins, low labor cost and satisfactory quality. Especially Ling (2017) also concluded that the development of China contractors in Singapore and Malaysia has come at the expense of the health of their employees, especially the mental health.

Occupational stress could trigger occupational stress which jeopardize human emotions and behaviors, which has long been an academic concern. Although it's acknowledged by previous literature that construction industry is one of the stressful professions for being complicated and confrontational (Leung et al., 2016), few study investigated it until the first research that focus on the mental condition of construction project management staff was published in 1989; it studied the construction site managers psychosocial problem in UK, a preliminary but pioneered employees mental research in construction industry. Under such stress and anxiety will jeopardize construction project management staff mental health in some extent (Cox and Griffiths, 2015). On the other hand, the constant psychological pressure will also exert a negative effect on the construction project itself, especially on the safety and overall performance, further the project success (Goldenhar et al., 2018).

Though occupational stress has been a hot issue since last century, few studies focused on the overseas employees of contractors. This comes to the initiation of this study. By

questionnaire survey and literature reviews, this study will present the stressors that construction projects professionals of China contractors in Malaysia deal with. This research is wished to aid the development of construction industry in the future.

1.4 Research Questions

1. What is the most common stress that construction projects management staff of China contractors suffered from?
2. What background are employees more susceptible to occupational stress?
3. What key causes of occupational stress faced by the construction projects management staff of China contractors?

1.5 Research Aim and Objective

This study aims to develop a conceptual framework on the occupational stress for the construction projects management staff of China contractors, so as to provide references to the company management regarding the employee stress care.

The aim is supported by the following objectives:

1. To identify the types of occupational stress faced by the construction projects management staff of China contractors in Malaysia.
2. To identify the relationship between occupational stress and the demographic of the construction projects management staff of China contractors in Malaysia.
3. To investigate the key causes of occupational stress faced by the construction projects management staff of China contractors in Malaysia.

1.6 Research Methodology

The methodology of the study is quantitative; specifically, the research methodology consists of three stages. Firstly, literature review and document inspection; then

questionnaire investigation; finally, the data information analysis. Regarding the scope of the research, the duration of the study was lasted for six months from June to December of 2021. Regarding the location, because the ongoing construction projects of the China contractors are located almost all the main cities in west Malaysia, our location where the research were conducted including Kuala Lumpur, Penang, Melaka and Johor Bahru. The target population is all the management professional working in China contractors in Malaysia.

1.6.1 Identifying the Factors from Previous Literature

The study starts with the comprehensive literature review of construction industry in Malaysia, China contractors in Malaysia, the project management in Malaysia and occupational stress of contractor management staffs of China contractors in Malaysia, then previous results and conclusion will be critically integrated to be the basis of the objectives of the study.

The reason why the study started with literature review is that it has been approved reviewing the relevant knowledge and recent research subject is indispensable before the initial of research (Lee, Wu, & Tsai, 2009; Z. Li, Shen, & Xue, 2014). Furthermore, the first objective of the research is to identify the key occupational stressors of Contractor management staffs of China corporation in Malaysia. Although few studies targeting the China corporation overseas, the conclusion previous literature regarding the stressors Contractor management staffs could be referred (Tijani, Jin, et al., 2020). Then the conclusion will be compared with the result of questionnaire survey to verify with each other.

The research adopted the similar research method with (Tijani, Jin, et al., 2020), Scopus literature research engine will be applied to research the relevant studies. Although the content is limited, Scopus is acknowledged as one of the most authoritative

research review engines and the index utilized by Scopus is far more reliable and reproducible than Google Scholar and other tools (Jacsó, 2018). What's more, Scopus include a considerable number of studies in construction project management (Osei-Kyei & Chan, 2015).

In the first phase of the study, all the literature, from 1978 the publication year of the first relevant research to 2020, on stress identification and control related to construction industry professionals will be collected and a detailed Scopus search will be conducted. Nevertheless, other articles in book reviews, discussion, press, conference and seminars, were excluded owing to the minor significance they contributing to the body of knowledge, an in-depth understanding of the research trend and development in a particular area (Lee et al., 2019). In addition to reviewing the literature in construction sectors, the study will keep the track of Covid-19 effects, though the dominant published articles are medical care personnel relevant since the outbreaking of pandemic (Abdulghani et al, 2020; Wu, 2020).

1.6.2 Identifying the Factors from Questionnaire

A study will be carried out in one of the largest main contractors from China operating in Malaysia which claimed itself to be “strive to be the first” (Liu & Liu, 2020). The survey instrument is a series of questionnaires made of Google Form, which will distribute either personally or via instant messaging cellphone applications such as WhatsApp or WeChat to 300 respondents from Kuala Lumpur headquarters and eleven construction projects located in Klang Valley and other cities in Malaysia peninsula, since WeChat has been the most popular instant messaging APP among China citizens for over 20 years and so did WhatsApp in Malaysia (Wan et al., 2019; Karim & Bakar, 2021). The questionnaire containing all the rationalized key occupational stressors proposed by

previous literatures, and additional stressors perceived by the respondents are allowed to be added.

In the end, according to the previous studies and the proposed questionnaires, stressors will be categorized to five sections as followed. Organizational stressors, task stressors personal stressors, physical stressors and gender-related stressors.

Each of the section consists of several stressors such as project overload, long time working hours, language barriers, harassment etc., totally there are 45 proposed stressors in the study.

1.7 Research Design

The research design refers to the means and strategies applied to solve the problem, an arrangement of conditions or collection. Descriptive design was used in the research, the primary data would be collected by questionnaire survey method in quantitative research. The total number of the employees who work in China contractors in Malaysia are 960 in 2019 according to the information of the association (Wen & Zou, 2021; Morain et al., 2019). A random sample of 95 project management staffs of China contractors in target sample should be enough to ensure the confidence levels required. Accordingly, 95 questionnaires were sent to the different 20 companies.

The questionnaire consists of eleven questions. The first is the background of the respondents. The second part is about their mental health status and different types of occupational stress they suffered from. The third part is the identification of stress origin. The last part is to discuss the possible solutions to this occupational stress. Except for the background investigation, the other three parts correspond to the three research objectives one by one. Although the number of people can be accessed is not large, it can also cover different sections from age, education, income, position and so on. The researcher

contacted the respondents by email and asked them to participate in the research after explaining the nature and the scope of the study.

1.8 Scope of Research

The research propose is to investigation the occupational stress status of management staffs of China contractors in Malaysia, to be specific the severity, the type and the key causes of it; then figure out the possible solutions, finally to provide a reference how could the employer to prevent and relieve the staff occupational stress to create a healthy working environment and ensure projects success.

The duration of the study was lasted for six months from June to December of 2021. Because the ongoing construction projects of the China contractors are located almost all the main cities in west Malaysia, our location where the research were conducted including Kuala Lumpur, Penang, Melaka and Johor Bahru. The target population is all the management professional working in China contractors in Malaysia, according to the requirements of the China Embassy, all China enterprises in Malaysia are obliged to register with the Association of China Enterprises and accept the unified and coordinated management of the Association. In this study, we refer to the registration information of the Association and find that there are 20 China contractors registered in the Association, including Beijing Urban Construction Group (BUCG), China State Construction Engineering Corporation (CSCEC), China Construction Yangtze River (CCYR) etc. with a total of 960 registered employees in 2019 according to the information of the association.

the respondents shall include all the employees of China contractors in Malaysia. The research will be conducted by questionnaire survey in Malaysia the third quarter of year 2021. The primary data of this study is obtained by questionnaire survey, and the secondary data is obtained by literature review. The primary data would adopt mixed

survey method, both quantitative and qualitative survey. In the quantitative part, this study would adopt questionnaire survey. A total of 95 employees working in China contractor in Malaysia would be randomly sampled through Google Form.

1.9 Significance of Research

This research contributes to both knowledge areas of construction and psychology sector. Firstly, it will fill the research gap of construction project management. In the past, some research has figured out the origins of occupational stress of CPPs (Chan & Liang, 2018; Xiao et al., 2021), while few of them paid their attention to overseas employees who may suffer far more. In addition, in the post Covid-19 pandemic era, more factors led to the aggravation of the stress under the more complicated environment, which is worth to research (Elsalem et al., 2020). The study could provide a reference and benchmark for Chinese construction corporations with growing overseas projects to help their managerial to determine company regulations, such as annual leave period and flexible work schedules, to prevent occupational stress that could affect employee health and corporation productivity (Wu et al., 2021).

1.10 Organization of Chapter

This research consists of six chapters. In the chapter one, the status and existing problems of the research industry are summarized and analyzed, and the research aim and objectives are presented. This chapter briefly showed the research method and presented the outline of this research. In the chapter two, a comprehensive literature review was conducted to the Malaysia construction industry, China contractors in Malaysia and the employees' occupational stress of China contractors in Malaysia. In the chapter three, the research strategy and sampling design, including target population and sampling techniques are presented. And it shows the means to calculate the sample size. In the chapter four and chapter five, it shows how the data collected from questionnaires be

analyzed. And then undertakes a general discussion based on the collected data. In the chapter six, the conclusion and recommendations offer to the management of China contractors in Malaysia on the issue how to prevent and relieve the occupational stress of their employees.

1.11 Summary of Chapter

In the chapter 1, the research background of China contractors in Malaysia is briefly shown, the status and existing problems of the research industry are summarized and analyzed. This study aims to develop a conceptual framework on the occupational stress for the construction projects management staff of China contractors, so as to provide references to the company management regarding the employee stress care. To realize the research aim, the following objective are proposed. The first is to identify the types of occupational stress faced by the construction projects management staff of China contractors in Malaysia; the second is to identify the relationship between occupational stress and the demographic of the construction projects management staff of China contractors in Malaysia; the third is to investigate the key causes of occupational stress faced by the construction projects management staff of China contractors in Malaysia.

Descriptive design was used in the research, the primary data would be collected by questionnaire survey method in quantitative research. The research methodology is through the questionnaire survey for 95 project management staffs. The research will be conducted by questionnaire survey in Malaysia the third quarter of year 2021. The primary data of this study is obtained by questionnaire survey, and the secondary data is obtained by literature review. The primary data would adopt mixed survey method, both quantitative and qualitative survey. In the quantitative part, this study would adopt questionnaire survey. A total of 95 employees working in China contractor in Malaysia would be randomly sampled through Google Form.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

In the literature review, the study starts with the comprehensive review of the history of construction industry in Malaysia, including the role and important position of the construction industry in Malaysia national economy (Alaloul et al., 2021; Bamgbade, 2019). Since the national independence, Malaysian construction industry can be broadly divided into three main stages, 1965 to 1970, 1970 to 1990 and 1991 to the present (Omer & Adeleke, 2019). Especially when the Malaysian ideal of Vision 2020 was proposed by former Prime Minister of Malaysia, Dr. Tun Mahathir. Malaysia has been inspired to be a developing country to a developed and industrialized country in the last century, the famous landmark of Malaysia, Petronas Twin Tower and Menara TM were completed at that time by the time of Vision 2020 (Hamid et al., 2021; Memon et al., 2020).

Then the development of China contractors in foreign countries especially in Malaysia are reviewed. It has been years that China has become the second largest economy entity in the world following USA (Beeson, 2018). And the president of China proposed The Belt and Road Initiative (BRI) in 2013 (Hurley, 2019). The principle could be concluded as to construct a unified large market and make full use of modern international business. A large number of China contractor start to operate their business overseas (Zhang, 2021). For Malaysia Market, because of the actively open investment strategy of former Malaysian government, many project were commenced before 2018 like Forest City, ECRL and Bandar Malaysia (Liu & Lim, 2019). But the shift of federal government and the impact of Covid-19, these projects were encountered problems (Esa et al., 2020).

For occupational stress of contractor management staffs. The characteristics of construction projects like strict construction period, quality requirements etc., determine that Contractor management staffs are bound to sustain considerable stress even

depression (Pinto, Patanakul, & Pinto, 2016). considerable stressors could contribute mental problems of the construction professionals. Unpaid overtime has been rationalized as an employee's duty in China, and this kind of culture has been brought to Malaysia construction industry (Peng, 2020), which tremendously affected the China contractors in Malaysia. Pinto (2016) found that the unpaid overtime work even more common for these contractors in Singapore and Malaysia than in China.

2.2 Construction Industry in Malaysia

Construction is crucial to a country's economic development, especially in developing countries like Malaysia (Alaloul et al., 2021). Because in the development process of the construction industry, it provides the infrastructure needed for social and economic development and is also a major contributor to the country's gross economic growth (Bamgbade, 2019). In general, the most important factor affecting demand for construction is the general economy and expectations of how it will change (Ivanova et al., 2021). In a booming economy with a high and growing gross domestic product, which is expected to continue, the government will take steps to improve social services and the private sector will invest in real estate and other industrial buildings, creating opportunities for construction (Benachio, 2020). In a recession, the situation is reversed and demand for construction decreases. Malaysia is transiting from a developing country to a developed and industrialized country, and its construction industry need to respond to changes in demand for construction (Dehdasht et al., 2020; Siew, 2021).

The development of the Malaysian construction industry can be broadly divided into three main stages, 1965 to 1970, 1970 to 1990 and 1991 to the present (Omer & Adeleke, 2019).

In the first phase, from 1965 to 1970, after British independence, Malaysia's construction output grew by 4.1% a year. Construction output increased from RM801

million in 1965 to RM980 million in 1970 (Hussain & Hadi, 2019). Construction activity during the period was mainly due to an increase in economic development programs for agriculture, infrastructure, rural development and capital expenditure for urban and rural housing (Tobi et al., 2020). Although much of the construction work was funded by the government, private sector investment increased in the late 1960s (Dehdasht et al., 2020).

In the second phase, Malaysia's construction industry has grown rapidly during the half decade, with production growing from RM801 million in 1965 to RM7.58 billion in 2003 (Siew, 2021). The GDP grew from RM17.582 billion in 1965 to RM238.4 billion in 2003. This reflected the important role of the sector in providing infrastructure to meet development needs and facilitating investment in other sectors of the economy (Alaloul, 2021). In terms of proportion, Malaysia's construction output as a percentage of GDP fluctuates from year to year. From 1965 to 2003, it fluctuated between 3.2% and 5.4% of GDP (Dehdasht et al., 2020). Construction is an important part of Malaysia's economy. Although the sector accounts for less than 5 percent of gross domestic product, it is a powerful driver of growth because of its extensive links with the rest of the economy (Indrawan & Rahman, 2020).

In the third phase, the development after Malaysia's recovery from the Asian financial crisis, demand in the overall construction market expanded rapidly and continued into the 1990s. The peak annual growth rate of construction in 1990 was 19.5 percent, higher than that of developed countries such as the United States and Japan and other developing countries (Akter & Smith, 2021). As per capita GDP increased, construction grew at an average annual rate of 14% from 1990 to 1996. In 1991 Malaysia put forward its plan to become a developed country by 2020, which further promoted the development of the construction industry. Large infrastructure projects, apartments, schools, hospitals, commercial and industrial buildings have boomed during this period (Chin & Jomo,

2019). Expansion in tourism and manufacturing also boosted output in construction. Rapid industrialization programmes have accelerated the process of urbanization in Malaysia, further increasing the demand for housing and related infrastructure (Siew, 2021). In addition to this country, the rapid industrialization of other Southeast Asian countries and China has also created a demand for new energy facilities such as photovoltaic, hydrogen and other clean energy (Shimizu, 2021; Muqiao, 2019). The growth in construction activity in the 1990s was driven by large foreign investment inflows, high domestic savings and a strong upsurge in private investment supported by widespread privatization of construction projects (Zhang, 2021). After the financial crisis in Southeast Asia, Malaysia's economic growth slowed, which affected the growth of the construction industry. Growth in the construction sector fell from 14.2 percent in 1996 to 9.5 percent in 1997. Growth in construction fell to -24% in 1998 (Wang et al., 2021). Due to the government's economic recovery measures, government statistics show that construction grew by 20 percent to -4.4 percent by the end of 1999 (Taha et al., 2018). Construction growth was further supported by encouraging for private projects and increased government spending, particularly on infrastructure and housing projects. Growth in construction reached 2.3% in 2001 (Dehdasht et al., 2020). After the completion of several large projects in 2003, growth in the infrastructure sector slowed and market activity fell to a low level. Construction grew by 2.3% in 2002 and 1.9% in 2003. Malaysia's economy is expected to return to growth, albeit at a slower pace than during the amazing of the early 1990s (Siew, 2021).

2.3 China Contractors in Malaysia

It has been years that China has become the second largest economy entity in the world following USA (Beeson, 2018). Since China began to open up and reform its economy in 1978, GDP growth has averaged almost 10 percent a year, and more than 800 million people have been lifted out of poverty (Yang et al., 2019). There have also been

significant improvements in access to health, education, and other services over the same period. The construction industry is developing drastically under the environment that the society faced an extreme lack of infrastructure and real estate, however, after the rapid development near 30 years, the construction market has changed from an incremental market to an inventory market (Morrison, 2019). The employment issue is the top priority of every country (Autor & Salomons, 2018). If the unemployment rate is too high, it will cause severe social upheaval and other unstable factors. the proportion of employment in China's construction industry in 2008 was 4.28%, which is much less than the lowest level of 6% in developed countries than USA (Vale & Branco, 2019). It seems like China's construction industry itself has a large space for employment absorption, but if we investigate other statistic, such as the proportion of labor compensation, in each input decreased by more than 18% points during the ten years (Zhou, 2020). China's high growth based on resource-intensive manufacturing, exports, and low-paid labor has largely reached its limits and has led to economic, social, and environmental imbalances (Qi & Dong, 2018). Reducing these imbalances requires shifts in the structure of the economy from low-end manufacturing to higher-end manufacturing and services, and from investment to consumption (Jiang & Lebedintseva, 2021). For a rising country, the decline in domestic construction worries the government, that's one of the considerations, the president of China proposed The Belt and Road Initiative (BRI) in 2013 (Hurley, 2019). The principle could be concluded as to construct a unified large market and make full use of modern international business, through cultural exchange and integration, to enhance reciprocity and understanding of member nations, ending up in a pattern with investment inflows, talent reservation, and technology innovation (Cai, 2017).

The number and scale of overseas investments by China enterprises has developed significantly in recent years (Dang & Zhao, 2020). By 2020, China had become the world's third largest foreign investor and net capital exporter (Jijian, Yichan, & Xuhui,

2022). As for Malaysia's construction capital market, it has also undergone structural changes due to the intervention of emerging markets like China, which has become an important source of capital (Liu & Lim, 2019). In terms of regions, Chinese enterprises have made overseas investment in most countries, with the main investment objectives of seeking overseas markets, natural resources, strategic assets and science and technology (Alon et al., 2018). In terms of economic size, according to the statistics of The Ministry of Commerce of China, China's outbound investment in 2020 was about us \$200 billion. The data shows that there is still a big gap between China's outbound investment and that of the United States and Japan, but it also reveals the huge potential of future investment by Chinese enterprises (Jijian, Yichan, & Xuhui, 2022). From the perspective of investment subjects, private enterprises surpass state-owned large enterprises in the number of investment projects, which shows that the diversification process of overseas investments subjects of Chinese enterprises is further accelerated (Song, 2018).

The development of Chinese contractors abroad can be divided into three phases.

In the first phase, Chinese contractors started following the China government's foreign aid projects (Dreher et al., 2021). After the Bandung Asian-African Conference in 1955, With the development of foreign relations, China started some foreign aid projects (Fofana, 2020). In 1956, China began to provide aid projects to African countries and assisted the construction of a number of major infrastructure projects such as the Tazara Railway (Enuka, 2020). Since the implementation of reform and opening-up in 1978, China's economic cooperation with other developing countries has changed from simple aid projects to various forms of cooperation (Yu, et al., 2020). China has appropriately adjusted the scale, distribution, structure and scope of its foreign assistance in light of its national conditions and further strengthened its assistance to the least developed countries (Dreher et al., 2021). China has carried out BOT, PPP and other

forms of project cooperation with some recipient countries. Some completed foreign aid production projects have achieved more remarkable results than traditional technical cooperation in improving enterprise management and raising production level by adopting the above-mentioned cooperation mode (Zhao & Jing, 2019). After adjustment and consolidation, China's foreign aid projects have embarked on a development path more suited to China's national conditions and the actual needs of recipient countries (Isaksson & Kotsadam, 2020).

In the second phase, in the 1990s, China began to carry out a series of reforms on foreign aid in the process of accelerating the transformation from a planned economy to a socialist market economy, with the focus on promoting the diversification of sources and ways of aid funds (Dreher et al., 2021). Previously, the central government had funded aid projects in other countries, such as The Islamabad airport in Pakistan (Faiz et al., 2018). In 1993, for the first time, the China government used part of the interest-free loans repaid by developing countries to set up a fund for foreign aid joint ventures and cooperative projects. The fund is mainly used to support joint ventures between Chinese enterprises from recipient countries in the field of new projects (Alden & Jiang, 2019). At the same time, China has attached greater importance to supporting the capacity building of recipient countries and has continuously expanded the scale of technical training in foreign aid. Training of officials from recipient countries in China has gradually become an important part of human resources development cooperation in foreign aid (King, 2020). Through this stage of reform, the way of overseas operation of Chinese contractors has been further broadened and the effect is more remarkable.

The third stage is from 2004 to now (Dreher et al., 2021). On the basis of sustained and rapid economic growth and continuous enhancement of comprehensive national strength, Chinese contractors have begun to expand their business fields overseas, both

state-owned enterprises and private enterprises, in addition to relying on government-led foreign aid projects (Ling, 2017). Especially after the Belt and Road Initiative, they will follow the footsteps of international cooperation organizations to undertake projects together (Hurley, 2019). For example, the Forum on China-Africa Cooperation, the Shanghai Cooperation Organization, the China-Asean Summit, the China-Caribbean Economic and Trade Cooperation Forum, and the China-Pacific Island Countries Economic Development and Cooperation Forum (Liu & Luo, 2021; Bi, 2021). At these meetings, contractors are looking to see if the government of the target country has announced measures to deal with foreign investment and strengthen development efforts in areas such as agriculture, infrastructure and clean energy (Liu, 2021).

Most of China contractors registered in Malaysia after 2004, in the third phase mentioned above. Especially under former Malaysian Prime Minister Datuk Seri Najib, because then the government adopted foreign investment friendly policies (Chin, 2021). And these contractors, such as CCCC which was awarded for ECRL project and BUCJ for Pavilion Elite project, are still young and taking shape in overseas market (Ngeow, 2021; Lim & Syailendra, 2021). They are often under project overload from powerful and mature local competitors such as KP and IJM (Zahir et al., 2021). And with the development of economic globalization, as well as the stability of the business environment and the superior position of Malaysia, a growing number of international large property developers and industrial investment projects entered the Malaysia market on its important strategic approach to development, such as ND paper of China and Intel of the United States (Chin & Jomo, 2019). That poses a formidable challenge for the young China contractors. From the very beginning, many enterprises not only face competition from local enterprises, but also face strong pressure from international consulting teams (D'Ayala, 2020).

China State Construction Engineering Corporation (CSCEC) is the largest construction company in the world by revenue and the 14th largest general contractor in terms of overseas sales (McFarlan, Li, & Zhang, 2016), which has a number of subsidiaries that have been developed in Malaysia since 2000 (Zhong et al., 2019). This study will be conducted on one of the largest branches among them. After the reform and opening up, CSCEC firmly implemented its overseas business strategy on the basis of basing itself on the domestic market. Over the past 28 years, China Construction Corporation has undertaken a large number of landmark projects overseas (Lu et al., 2019). It has undertaken more than 4,000 projects in more than 100 countries and regions. In the competition of overseas construction market, China Construction Corporation has cultivated competitive advantages in eight main international engineering fields, including airport, residence, hotel, road and bridge, water, medical facilities, government and embassy projects, and cultural and sports facilities. The company has built six business models, including low-cost competition, high-quality management, low-cost expansion and high-grade marketing, with high-quality projects as the brand to drive general contracting, with engineering consulting as the forerunner to drive general contracting, with construction technology as the support to drive general contracting, complementary advantages (Mingyu & Zhihua, 2021).

2.4 Occupational Stress of China Contractors Staff in Malaysia

For the occupational stress, it has damaged the wellbeing of human kind, but very rear researches targeting construction industry until 1978 the first study investigating the mental conditions of British Contractor management staffs. As forementioned, considerable stressors could contribute mental problems of CPPs, previous literatures have proved that incarceration in a strain the water pressure will cause occupational stress no matter in Malaysia or in UK or any other countries. but this problem is confronting many obstacles, such as stakeholders in top management or unwilling to change the status

quo because it's a conventional industry. This situation may become far more severe among Contractor management staffs of China corporation overseas, because the non-pay overtime work has been rationalized in China (Peng, 2020).

The characteristics of construction projects like strict construction period, quality requirements etc., in other word the stressors, determine that Contractor management staffs are bound to sustain considerable stress even depression (Pinto, Patanakul, & Pinto, 2016). Specifically, a study conducted in 2005 defined the stressors as the uncertain element in implementing a project, which generally includes the inadequate schedule management, insufficient resources, poor team motivation, etc. under such stress and anxiety definitely will jeopardize CPPs' mental health in some extent (Cox & Griffiths, 2015). On the other hand, CPPs' constant psychological pressure will also exert a negative effect on the construction project itself, especially on the safety and overall performance, further the project success (Goldenhar, Swanson, Hurrell, Ruder, & Deddens, 2018). UK government spend £24 - £27 billion per year on national health service, and about £74 on loss caused by occupational stress (Farmer & Stevenson, 2017).

As the construction industry as a traditional industry, the stakeholders in the top management have little desire to change the work process and the status quo, therefore the mental illness is widespread among Contractor management staffs (Sherratt, 2018). Recent research clarified the process how the large enterprises in China implemented practical arranges to affect the employees, therefore non-pay overtime work was rationalized and endured by the staff (Peng, 2020). Unpaid overtime has been rationalized as an employee's duty in China. Considerable studies argued work stress will cause occupational stress (Tijani, Jin, & Osei-kyei, 2020). According to a study conducted in Malaysia, approximately 68% Contractor management staffs suffered from work stress and occupational stress (Campbell, 2016). And similar conclusion was drawn in United

Kingdom (Azwin Abdullah Zawawi, Arsiah Bahron, 2014); UK government spend £24 - £27 billion per year on national health service, and about £74 on loss caused by mental disorder.

2.5 Key Definition

2.5.1 Occupational Stress

Occupational stress refers to a risk for psychological, behavioral and mental illness, which is a chronic disorder that could be controlled by understanding the stress origins or stressors and implementing corresponding methods (Quick & Henderson, 2016). There are considerable theories been proposed since people noticed the effect of occupational stress, and five of are most influential model.

Demand-control-support (DCS) model which proposed in last century was one of the most influential theories regarding occupational stress. It argues that the employee will be suffered under the combination of work autonomy and workload. Following studies have supplemented further on this model and find that either of the following factors or the combination defined as iso-strain, intolerable workload, low control over the work or insufficient support from the management, could rise occupational stress (De Lange, Taris, Kompier, Houtman, & Bongers, 2016).

Effort-reward imbalance (ERI) model is another influential model which targets to identify the stressors in occupational environment. It underlines the relationships between the effort and the reward of an employee. The prototype defined the chronic working stress as the imbalance of these two elements according to the research conducted in five different European countries and mentally unhealthy condition was observed in the staff whose ERI score than others (Siegrist et al., 2014).

Person-environment fit model emphasizes the matching degree between the working circumstances and the person himself/herself. A literature review-based study in 1991 found that the working conditions could affect the mortality and health of people (Goetz & Freisinger, 2021)

Job characteristics model analyzed working stress from the attributes of the occupation (Mark & Smith, 2008), which are working tasks related, like the task richness, task significance, task duplication, task feedback etc. In specific circumstances these factors could be divided into positive and negative, which leads to the different performances such as motivation, enthusiasm or absenteeism. Following studies developed the corresponding coping survey to improve the top management to make decisions (Mark & Smith, 2018).

Diathesis-stress model was proposed in 2002, which argues whether an individual susceptible to the stress; in the case that a person possess relatively high tolerance over the environment exerted on him, intense stress may not cause mental disorder. Whereas if the stressors such as work overload or tough interpersonal working relationships exceed the critical value, people will break down (Turk, 2016).

2.5.2 Stressors

Studies defined the stressors as the event that causes stress to an organism (Sato et al., 2016). It could cause different reactions, which could be in mental functions or performance. Generally speaking, when people fail to cope with the requirement from the environment, stress will occur. Some argues the stressors are positively related with the predictability and a controllability (Grillon, Baas, Lissek, Smith, & Milstein, 2016). When individuals are informed or noticed stressful events will occur which may cause stressors, the magnitude will be less than the emergencies which are unpredictable. And if it is inevitable, people prefer stressors could be predicted than those come up like a

surprise. There are two principal hypotheses manage to explain the stressors (Sato et al., 2016).

The first theory is preparatory response hypothesis. The underlying logic of this theory is people could biologically well prepare before the stress (Lambert, 2018). For example, when we know there will be an interview, we could prepare then we confront with confidence.

The second theory is safety hypothesis. The theory argues there are two time period, one is believed to be safe, in other words, no stressors exist in the period; the other is unsafe which means stressors active. Also take the interview for instance, in the weeks before interview, or we could define the period as safe intervals, individual is relaxing and not anxious; however, in the night before the interview, the unsafe intervals, people will present a state of anxiety.

Based on the previous literature review, which have studied the influencing factors of occupational stress, this research focuses on the 45 stressors distributed in five different categories as shown in below. This study will select the key stressors to explain the definition. Because stressors contribute the occupational stress differently (Tijani, Xiaohua, & Osei-Kyei, 2020), it is reasonable that the stressors need to be weighted relative to each other to enhance their usefulness as a mental illness contribution factor.

In the questionnaire, besides to write up the stressors that depress the mental condition, the respondents are instructed to score all the proposed elements, which is extreme tension (level of stress 5), or it is no tension (level of stress 1). The raw weight collected from the respondents are utilized to develop the Contractor management staffs occupational stress score sheet. The full score range of 45 to 255, when it comes to 225, indicating the

occupational stress of the construction project profession (CPP) is maximum severe; the minimum score is 45, which suggested the no mental illness symptom of the CPP.

Before analyzing the weight, it's necessary to figure out the proposed contribution of each section to one's mental illness. The occupational stress factors are sorted in five sections. The weight column corresponds to a summation of all factor weight 5. In other words, if all stressors being the highest, these would be the scores.

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**Table 2.1: Key causes of occupational stress identified from the literature
(Source: Tijani, Xiaohua, & Osei-Kyei, 2020)**

No.	Section	Stressors
1	Organizational	Home-Work Conflict
		Lack of Career Guidance
		Lack of organization support
		Poor organizational structure
		unfair reward and treatment
		Lack of autonomy
		Job insecurity
		Lack of human resources
		Lack of Promotion opportunity
		In adequate freedom of decision
		Lack of feedback
		Poor communication
		In adequate rooms for innovation
2	Task	Project overload
		role Ambiguity
		Tight time frame
		Long time working hours
		Project underload
		Unpredictable working hours
		Too specified job natures
		Much contact with people
		Unfair assignment of workload
		Inadequate knowledge of project

		multitasking
3	Personal	Poor working relationship
		Type A behavior
		Problem with superior
		Harassment and discrimination
		Language barrier
		distrust
		Adaptability with change of job
		Personal traits of the locals
		Work traits of the locals
		Alcohol and drug use
		Competitive teamwork
		Proliferation of virtual team
		Poor social network
4	Physical	Inadequate safety equipment
		Injury and accident
		Poor transportation
		poor medical services
		Poor working environment
5	Gender-related	Sexual harassment
		Gender inequality
		Limited job opportunities

Role Conflict & Role Ambiguity. Role conflict in working environment normally happens when employees are confronting dilemma of incompatible demands, because every status they are expected to be responded. The period of conflict could be long or short, which is related with specific scenarios; Occupational role ambiguity means a situation that the employee lacks the clarification of role he is supposed to be (Mañas et al., 2018). Role conflict and role ambiguity both could be the occupational stressors, to avoid the negative influence, management should specify the duties and responsibilities that different employees should take, necessary feedback and guidance are also indispensable since it could explain whether the staff carried out the requirement of his role properly. Even though sometimes employees are inevitably taking two or more roles at the same time, they should be separated by time and places (Wu & Zheng, 2019; Nambisan & Baron, 2021).

Work-Family Conflict. Work-family conflict is a branch of role conflict. It could happen when the requirement from work and family are incompatible (Amstad, Meier, Fasel, Elfering, & Semmer, 2017). It's the most common organizational stressors we all could confront, therefore it's meaningful to understand both for organization and individual. Sometimes, this conflict could give rise to job fatigue, work stress and the decrease of organization performance (Molina, 2021).

Career Guidance. There are differences between career guidance and career consulting. The later normally conducted by a group of professionals that human resources related, and they will provide a counselling service for the clients their life journey through career including work changes, exploration, lifetime development, etc. (Ko & Park, 2018). And the former usually defined as some advice or suggestions during the working time provided by senior employees or corporation management. it's

regrettable that considerable companies, some even international prestigious enterprises, are failed to conduct this kind of training (Franco et al., 2019).

Project Overload. It is a situation when a project manager has more projects to be managed than he can adequately handle at the same period. This situation is a typical condition to cause a severe workplace stress and task saturation, as the project overload is characterized by Tight schedules, managers haven't enough time to restore between assignments and are always pressed for time (Naoum et al., 2018; Alami et al., 2019); **Multi-tasking,** a project manager should drive many tasks concurrently, so his working agenda easily becomes a mess leading him to the total burnout (Jin & Zheng, 2019); **Increased coordination expenditures,** a project manager needs to delegate tasks to his assistants and can make more errors than usually, hence administrative costs can grow rapidly; **A manager requires increased amounts of set-up time** when he alternates between different tasks because switching between assignments for simultaneous projects is very exhaustive; **Increased work fragmentation** leads to frequent disruptions and hence higher inefficiency when dealing with every particular task (Tassone et al., 2020).

Organizational Support. The extent of organizations values their contributions and provide appropriate support could be interpreted as organizational support. A study contacted in China investigated in vehicle manufacturing industry, the result showed that four factors measuring employee performance, teamwork, problem-solving, motivation and constant have a positive correlation where is the organizational support they perceived (Kumari & Singh, 2018).

Organizational Structure. The tasks and supervision should be properly allocated under an organization goal- the achievement of proposed aim (Weber & Pugh, 2017). An appropriate organizational structure is imperative for a corporation, since it represents the decision of top management that the participants of every activity and extent of personal

perspective affect them. A corresponding standard operation procedure and the routine supervision will be formed on the organization structure (Jacobides, 2017).

Reward and Treatment. It is necessary to develop a reasonable reward management system to fairly and constantly in their value to the corporation. It involves the policy and practices of payments, total reward, minimum wage and team reward. It could be divided into the extrinsic rewards and intrinsic rewards. The former includes the salary rising as an annual certificate; gifts as a short-term appreciation for a specific project success or achievement; and promotion as a reward of long-term satisfaction for employee (Gkorezis & Petridou, 2008). The later tends offer satisfaction to individuals, which includes feedback that guides employees against deviation; trust that usually present as empowerment; and recognition that could be the verbal appreciation.

Autonomy. Autonomy, in other words job control, can be defined as the ability to control what happened in working environment in particular to affect matters that pertaining to individual goals, specifically the control over working assignments, control over the workplace environment and physical movement, control over the social and technical environment, and the freedom from supervision (Gallie, 2012).

Some argues there is a positive correlation between quality of working and work control. Sias (1986) find that the personnel perceived control is related with many factors, on the one hand, job satisfaction, commitment, involvement, performance and motivation; on the other hand, physical symptoms, emotional distress, role stress, absenteeism, etc.

Job Security. Top security is defined as the probability that people will keep working with their job. Job insecurity means people with this job will have a chance of losing it. People could improve their job security by increasing their education and work

experience, but to some extent the job type and company that people working for, could provide different sense of job security (Bernstrøm et al., 2018). In terms of the society, the official unemployment rate is a pivotal index of job security in employment fields. These statistics are closely watched by authorities and academic field (Muñoz-Comet et al., 2021).

Working Relationship. It's been proved that workplace relationships are one of the most distinct interpersonal relationships, which directly influence employee's competence and drive to complete the work (Sias, Gallagher, Kopaneva, & Pedersen, 2012). These working relationships includes superior-subordinate relationship, workplace friendship and sometimes romantic relationships. The Hawthorne theory is widely used to explain superior- subordinate relationship in working environment. It's believing if individuals realize they are monitored or supervised, they will behavior differently compared with normal situation, and people who feel received extra attention from the leader will be more motivated in working (Hou et al., 2022). The key point of the theory prove that the superiors can create a comfortable or depressing environment. Another theory regarding superior- subordinate relationships is leader- membership theory which claim that the success of employee related with the quantity of information they obtained, no matter from superiors or outside. And the study indicates the situation that promotions always with people who have a go to relationship with their supervisors is because they gained more information from leader than others (Goodman et al., 2019). Unexpectedly, unsmooth workplace friendships also contribute to occupational stress. Because colleagues share a large quantity of time together over 50 hours per week, and for China corporations that are used to working overtime, the time shared will be even longer (Faisal et al., 2019). The relationships developed in working environment called blended friendships that relaxing relationships are proved have a positive effect on an employee's performance. It will lead to work groups with solidarity, employees who is

satisfaction and commitment, greater project performance, greater aim attainment and positive feelings within the organization; It could make tasks more pleasant and is a factor preventing employee from resigning. However, they can also be detrimental to work performance because of the inherent competition, jealousy, gossip, and distractions (Kalanlar et al., 2020).

Harassment and Discrimination. Harassment and discrimination in workplace are controversial topics, and different group of people are fighting for a long time, but in Asia there is a long way to go. More than 50% of the women surveyed said they have experienced at least one form of gender discrimination in the workplace, according to Women's Aid Organization's (WAO) voices of Malaysian women on discrimination and harassment in the workplace survey (Goldenhar et al., 2018).

Besides the discrimination in gender, other factor such as race, work experience, personal economic conditions could all be part of it.

2.5.3 Construction Projects Staff

Construction project staff refer to people have a career in construction related discipline. Architects, quantity surveyors, site engineers, contractors any relevant designers could all be classified as construction projects staff (Olawumi & Chan, 2019). But as for construction workers, skilled workers, carpenters, plumbers, etc. they could be classifying it as craftworkers rather than professionals (Araya, 2021). A very traditional, but inaccurate distinction is that a "professional" is engaged in mental activity while a "craftworker" is mainly engaged in physical labor (Albattah, 2019).

Most professions are often employed by professional entities which may accredit educational establishments, academic or qualified individuals or companies (Zheng & Wu, 2018). The authority includes Royal Institute of British Architects (RIBA) in Britain,

Construction Industry Development Board (CIDB) and Jabatan Kerja Raya (JKR) in Malaysia. The corporations including numerous developers, contractors, and the project management companies around the world (Hasni, 2018).

2.6 Summary of Chapter

In the chapter 2 literature review, firstly the history of construction industry in Malaysia, including the role and important position of the construction industry in Malaysia national economy are reviewed. Construction is the core industry to the economic development for developing countries like Malaysia (Alaloul et al., 2021). It provides the infrastructure needed for social and economic development and is also a major contributor to the national GDP (Bamgbade, 2019). Since the national independence, Malaysian construction industry can be broadly divided into three main stages, 1965 to 1970, 1970 to 1990 and 1991 to the present (Omer & Adeleke, 2019).

Then the development of China contractors in foreign countries especially in Malaysia are reviewed. The development of these contractors can also be divided into three phases. In the first phase, Chinese contractors started following the China government's foreign aid projects (Dreher et al., 2021). In the second phase, in the 1990s, China began to carry out a series of reforms on foreign aid in the process of accelerating the transformation from a planned economy to a socialist market economy, with the focus on promoting the diversification of sources and ways of aid funds. The third stage is from 2004 to now. On the basis of sustained and rapid economic growth and continuous enhancement of comprehensive national strength, Chinese contractors have begun to expand their business fields overseas, both state-owned enterprises and private enterprises, in addition to relying on government-led foreign aid projects (Ling, 2017), and most of China contractors registered in Malaysia after 2004, in the third phase mentioned above.

Especially under former Malaysian Prime Minister Datuk Seri Najib, because then the government adopted foreign investment friendly policies (Chin, 2021).

Then the development of occupational stress of contractor's employees are reviewed. The characteristics of construction projects like strict construction period, quality requirements etc., in other word the stressors, determine that Contractor management staffs are bound to sustain considerable stress even depression (Pinto, Patanakul, & Pinto, 2016). As the construction industry as a traditional industry, the stakeholders in the top management have little desire to change the work process and the status quo, therefore the mental illness is widespread among Contractor management staffs (Sherratt, 2018).

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CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

In the chapter, the research approach and design are presented, including survey sample selection, data collection, ethical issues, and limitation of using this specific research methodology.

The research is for the construction projects management staffs of China contractors in Malaysia. They could be China citizens designated from the headquarters, Malaysia citizens recruited locally or citizens of other countries (Wen & Zou, 2021). They form the research object of the study. According to Cochran's Sample Size Theory, 95 respondents can meet the requirements of the survey.

The primary data of this study is obtained by questionnaire and the secondary data is obtained by literature review. The primary data would adopt quantitative method and the questionnaire survey will be applied. A total of 95 employees working in China contractor in Malaysia would be randomly sampled through Google Form. The employees involving in this study will not be impacted in any way. The survey respects their independent will and has obtained their full consent before the investigation (Morain et al., 2019).

3.2 Research Approach

Under the background of globalization and the pandemic of Covid-19, the research needs to investigate the origin and severity of occupational stress suffered by construction projects management staffs of China contractors in Malaysia (Shrestha et al., 2021). Three objectives would be achieved; Firstly, to identify the most common type of occupational stress suffered by employees. Then, to figure out the origin of these stress, Finally, to analyze its influence and the measures the enterprises can take to relieve the stress.

There are three objectives of the research, and all of the objectives would adopt quantitative research method, which philosophy theory is positivism.

First of all, in the first and the second research objectives, there is a hypothesis that a certain number of construction projects management staffs of China contractors in Malaysia are suffered from occupational stress, which could be identified. Therefore, the questionnaire survey is recommended to be adopted with analysis of the data to verify the hypothesis, so this part adopts the quantitative research method, pertaining to positivism philosophy theory.

Quantitative research has been widely applied in the field of science and engineering. There are many advantages to apply the quantitative method in the study. Firstly, it allows large sample size to be investigated. To be specific, the sample of construction projects management staffs of China contractors in Malaysia can be very large, rather than limited to a single project or company, which also allows different questions involved and all the data could be simply summarized. Secondly, the results of quantitative research are relatively objective and accurate. Because the basic data of the questionnaire comes from closed and given information, therefore few variables in the study. Thirdly, the data analysis process is relatively convenient and fast. Google Form is applied to distribute questionnaires, which is intelligent and informationized; and the respondents from different companies can participate in the survey at the same time through email and instant chat software. Last but not least, it is cost saving. As the quantitative survey procedure is relatively simple, the average cost of the survey is far less than that of the qualitative survey.

3.3 Research Design

3.3.1 Primary Data

The primary data of this study would be collected by questionnaire survey method in quantitative research.

According to the requirements of the China Embassy, all China enterprises in Malaysia are obliged to register with the Association of China Enterprises and accept the unified and coordinated management of the Association. In this study, we refer to the registration information of the Association and find that there are 20 China contractors registered in the Association, including Beijing Urban Construction Group (BUCG), China State Construction Engineering Corporation (CSCEC), China Construction Yangtze River (CCYR) etc. with a total of 960 registered employees in 2019 according to the information of the association (Wen & Zou, 2021; Morain et al., 2019).

Firstly, a sample survey is conducted on this group to obtain a target sample, in other word, target sample, the reason why the process of sampling matters is that sometimes research do miss the mark so fail to hit the point: samples can be unrepresentative of the population that you originally intended to sample (Massad, Eduardo, Ortega & de Barros, Laécio Carvalho Struchiner, 2018; Mitchell H. Gail, Jacques Benichou, Peter Armitage, 2012)

This study plans to conduct a questionnaire survey in a random Sample of 960 employees, and Cochran's Sample Size Formula is applied to determine the Sample Size.

$$n_0 = \frac{Z^2 pq}{e^2}$$

In the study it is going to assume that a quarter of the construction projects management staff of China contractors suffered from occupational stress. This gives us

maximum variability. Therefore, $p = 0.5$. Now the study requires 95% confidence, and at least five percent plus or minus precision. A 95 % confidence level gives us Z values of 1.96, per the normal tables.

Accordingly, a random sample of 95 project management staffs of China contractors in target sample should be enough to ensure the confidence levels required. Accordingly, 95 questionnaires were sent to the different 20 companies from July to October 2021.

The questionnaire consists of eleven questions. The first is the background of the respondents. Their age, which been divided into four groups. Under 30, 31-40, 41-50 or above 50. Their Ethic Origin, Malaysia citizen, China citizen or others; Their gender, male or female. Their education background, high school, diploma, degree, master or Ph.D. Their annual income, Under MYR40,000, MYR40,000-60,000, MYR60,000-80,000, MYR 80,000-100,000, MYR 100,000-120,000, MYR 120,000-140,000 or above MYR 140,000. Their Marital Status, single, married, divorced or de facto. Finally, their daily working hours, under 8 hours, 8-10 hours, 10-12 hours or above 12 hours. The reason why the focused on the seven backgrounds is that the hypothesis that there is some correlation between their occupational stress and their background like education background and income. For example, it is possible that people with higher incomes are more resistant to work stress; or people with work overload and overtime too often would under much larger occupational stress.

The second part is about their mental health status and different types of occupational stress they suffered from. The respondent should choose their health conditions from 1-5. According to the previous literature, the type of stress including six expressions. Feeling of tension, irritability, restlessness, depression, sleep problems and changes in drinking, eating, or smoking.

The third part is the identification of stress origin. Respondents would be required to identify the origin of their stress from 45 stressors in five broad categories which are organizational stressors, task stressors, personal stressors, physical stressors, and gender-related stressors.

The last part is to discuss the possible solutions to this occupational stress. Except for the background investigation, the other three parts correspond to the three research objectives one by one. Although the number of people can be accessed is not large, it can also cover different sections from age, education, income, position and so on. The researcher contacted the respondents by email and asked them to participate in the research after explaining the nature and the scope of the study.

3.3.2 Secondary Data

The secondary data are deemed to provide the basic information for primary data collection and the result comparison. The study starts with the comprehensive literature review both within the project management and occupational stress of contractor management staffs, then previous results and conclusion will be critically integrated to be the basis of the objectives of the study.

The reason why the study started with literature review is that it has been approved reviewing the relevant knowledge and recent research subject is indispensable before the initial of research (Lee, Wu and Tsai, 2019; Li, Shen and Xue, 2014). Furthermore, one of the research objectives is to identify the key stressors of construction management staffs of China contractor in Malaysia. Although few studies targeting the China corporation overseas, the conclusion previous literature regarding the stressors Contractor management staffs could be referred. Then the conclusion will be compared with the result of questionnaire survey to verify with each other.

The research adopted the similar research method with (Tijani, Jin and Osei-kyei, 2020), Scopus literature research engine will be applied to research the relevant studies. Although the content is limited, Scopus is acknowledged as one of the most authoritative research review engines and the index utilized by Scopus is far more reliable and reproducible than Google Scholar and other tools (Jacsó, 2018). Scopus include a considerable number of studies in construction project management (Osei-Kyei and Chan, 2015).

In the first phase of the study, all the literature, from 1978 the publication year of the first relevant research to 2020, on stress identification and control related to construction industry professionals will be collected and a detailed Scopus search will be conducted. Nevertheless, other articles in book reviews, discussion, press, conference, and seminars, were excluded owing to the minor significance they contributing to the body of knowledge, an in-depth understanding of the research trend and development in a particular area (Lee, Wu and Tsai, 2019). In addition to reviewing the literature in construction sectors, the study will keep the track of Covid-19 pandemic impact.

Then through the first phase of literature review, important stress type and key stressors have been collected to be evaluated in the context of China contractors in Malaysia. Detailed stress type and stressors could be referred in Chapter 2 literature review of the research, which also utilized in the questionnaire.

3.4 Ethical Issues

The authors hereby guarantee that participants in this study will not be harmed in any way; Respect the dignity of the study participants; The full consent of the participants has been obtained prior to the study; Ensure the privacy of study participants is protected; Ensure the full confidentiality of research data; Ensuring the anonymity of individuals

and organizations involved in research; There will be no deception or exaggeration of the purpose and objectives of the research.

3.5 Summary of Chapter

In the chapter, the research approach and design are presented, including survey sample selection, data collection, ethical issues, and limitation of using this specific research methodology. The primary data of this study is obtained by questionnaire and the secondary data is obtained by literature review. The primary data would adopt quantitative method and the questionnaire survey will be applied. A total of 95 employees working in China contractor in Malaysia are randomly sampled through online questionnaire. The employees involving in this study will not be impacted in any way. The survey respects their independent will and has obtained their full consent before the investigation (Morain et al., 2019).

CHAPTER 4: DATA COLLECTION AND ANALYSIS

4.1 Introduction

In the last chapter research methodology, the reason why the number of 95 questionnaires should be distributed has been argued, in which 80 respondents with useable questionnaires out of 95 people with the respond rate 84.2%. The result statistic of the research was calculated by the SPSS software. The chapter 4 data collection and analysis presents how the data collected and the method of analyzing these information.

4.2 Questionnaire Survey Reliability and Validity

Before analyzing the collection of the questionnaire statistic, there are some coefficients to show the reliability and validity, like Cronbach α and Bartlett's Test of Sphericity (Chi-Square).

For the validity, the sample size fails to reach the minimum value of 100 for Bartlett's Test of Sphericity to analyze. The value of p is null due to the small sample size of the research.

Table 4.1: Validity of the questionnaire survey

p
null

for reliability, Cronbach α and Standardized Cronbach α were 0.900 and 0.924, both beyond 0.8, manifest that the data of the questionnaire in a high level of reliability.

Table 4.2: Reliability of the questionnaire survey

Cronbach α	Cronbach α (Standardized)
0.900	0.924

4.3 Correlation between Employee Background and Occupational Stress

Before analyzing the correlation, we have confirmed that the data is normally distributed. Now Pearson Correlation Coefficient should be calculated to verify the correlations between their background like education, income and occupational stress that the staffs been suffered from.

From the statistic collect from the questionnaire survey, it could be concluded that the most of respondents are single male, under 30 years old, both Malaysian Citizens and with degree and annual income less than MYR40,000, and most of their daily working hours are beyond 8 hours.

In particular, the first demographic variable is age, the frequency of age lower than 30, 30 but less than 40, 40 but less than 50 and over 50 are 76.3, 20.0, 1.2 and 2.5. the second demographic variable is ethnic origin, the frequency of Malaysia citizen, China Citizen and others are 43.8, 55.0 and 1.2. The third demographic variable is gender, the frequency of male and female are 73.8 and 26.2. The fourth demographic variable is education background, the frequency of High School, Diploma, Degree, Master and PhD are 5.0, 2.5, 72.5, 20.0 and 0.0. The fifth demographic variable is annual income, the frequency of income below MYR40,000, MYR40,000 to 60,000, MYR60,000 to 80,000 MYR80,000 to 100,000, MYR100,000 to 120,000, MYR120,000 to 140,000 and income over MYR140,000 are 42.5, 7.5, 5.0, 8.7, 0.0 and 32.5. the sixth demographic variable is marital status, the frequency of single, married, divorced and de facto are 72.5, 22.5, 3.5 and 1.5. The seventh demographic variable is daily working hours, the frequency of below 8 hours, 8 to 10 hours, 10 to 10 hours and over 12 hours are 2.5, 47.5, 33.8 and 16.2.

Table 4.3: Demographic of the respondents

Demographic Variables		Frequency (n=80)	
1	Age	<30	76.3
		30 but less than 40	20.0
		40 but less than 50	1.2
		>50	2.5
2	Ethnic Origin	Malaysia Citizen	43.8
		China Citizen	55.0
		Others	1.2
3	Gender	Male	73.8
		Female	26.2
4	Education	High School	5.0
		Diploma	2.5
		Degree	72.5
		Master	20.0
		PhD	0.0
5	Annual Income	<MYR40,000	42.5
		MYR40,000-60,000	7.5
		MYR60,000-80,000	5.0
		MYR80,000-100,000	8.7
		MYR100,000-120,000	0.0
		MYR120,000-140,000	32.5
	>MYR140,000	3.8	
6	Marital Status	Single	72.5
		Married	22.5
		Divorced	3.5
		De Facto	1.5
7	Daily Working Hours	<8 hours	2.5
		8 but less than 10 hours	47.5
		10 but less than 12 hours	33.8
		>12 hours	16.2

Table 4.4: Pearson correlation coefficient between demographic information and occupational stress of the respondents

	Demographic Variables	Pearson Correlation	ρ
1	Age	-0.388**	0.005
2	Ethnic Origin	0.270	0.058
3	Gender	-0.281*	0.048
4	Education	0.127	0.380
5	Annual Income	-0.347*	0.014
6	Marital Status	-0.357*	0.012
7	Daily Working Hours	0.438**	0.001

As can be seen from the above table, Correlation analysis was utilized to study occupational stress, age, ethnic origin, gender, education, annual income, marital status, and daily working hours including over time. Pearson's Correlation Coefficient was used to indicate the strength of the correlation.

Then, SPSS software was utilized to analyze the correlation between employees' background and their occupational stress. the Pearson Correlation Coefficient for age, ethnic origin, gender, education background, annual income, marital status and daily working hours are -0.388, 0.270, 0.281, 0.127, -0.347, -0.357 and 0.438 respectively. The ρ for age, ethnic origin, gender, education background, annual income, marital status and daily working hours are 0.005, 0.058, 0.048, 0.380, 0.014, 0.012 and 0.001.

The correlation value between occupational stress and age was -0.388, and showed a significant level of 0.01, there was a significant negative correlation between occupational stress and age, which means the younger an employee, the more occupational stress he suffered; the correlation value between occupational stress and ethnic Origin is 0.270, close to 0, and the P value is $0.058 > 0.05$, accordingly there is no correlation between occupational stress and ethnic origin; the correlation value between occupational stress

and gender was -0.281, and showed a significant level of 0.05, which indicated that there was a significant negative correlation between occupational stress and gender, which means a male employee suffered more than females; the correlation value between occupational stress and education is 0.127, close to 0, and the P value is $0.380 > 0.05$, consequently there is no correlation between occupational stress and education; the correlation value between occupational stress and annual income is -0.347, and shows a significance level of 0.05, thus, it indicates that there is a significant negative correlation between occupational stress and annual income, which means the more an employee paid, the less occupational stress he would suffer; the correlation value between occupational stress and marital status was -0.357, and showed a significance level of 0.05, which indicated that there was a significant negative correlation between occupational stress and marital status, which means a single employee suffered more from occupational stress than married ones and the correlation value between occupational stress and daily working hours is 0.438, showing a significance level of 0.01, which indicates that there is a significant positive correlation between occupational stress and daily working hours, means the longer time an employee works, the more occupational stress he would suffer.

4.4 Occupational Stress Conditions and Types

It can be concluded from the data of the questionnaire that all interviewees suffer from occupational pressure. The frequency of no severity accounted for 0; severity level 1 accounted for 2%; severity level 2 accounted for 42%; severity level 3 accounted for 22%; severity level 4 accounted for 24% and severity level 5 accounted for 10%. Those who are seriously affected (Severity > 2) account for 56% of the total respondents.

Table 4.5: Severity of occupational stress

Severity of Occupational Stress	Frequency	Percentage
No Severity	0	0%
Severity 1	1	2%
Severity 2	21	42%
Severity 3	11	22%
Severity 4	12	24%
Severity 5	5	10%

According to the previous literature, for the construction management professionals, the most common occupational stresses are feeling of tension, depression, sleep problems, restlessness, and change in drinking, eating or smoking behaviors. One of the objectives of the research is to identify the types of occupational stress suffered by construction projects management staff of China contractors. The result shows below. The dominant types of occupational stress are feeling of tension and restlessness.

The frequency of drinking, eating or smoking is 2, accounted for 4%; the frequency of depression is 6, accounted for 12%; the frequency of feeling of tension is 16, accounted for 32%; the frequency of restlessness is 21, accounted for 42% and the frequency of sleep problem is 5, accounted 10%.

Table 4.6: Type of occupational stress

	Types of Occupational Stress	Frequency	Percentage
1	Drinking, eating or smoking	2	4%
2	Depression	6	12%
3	Feeling of tension	16	32%
4	Restlessness	21	42%
5	Sleep problems	5	10%

4.5 Key Causes of Occupational Stress

In investigating the key causes of occupational stress, all the respondents are required to mark their personal condition from 1 to 5 of the impact level out of 45 key causes summarized from the previous literature.

Analytic Hierarchy Process (AHP) are recommended to analyze the objective of investigating the key causes. The core is to simplify and quantify the various factors in complicated questions by pairwise comparison. Then, statistical method is used to reflect the weight of the importance order of elements, and the relative weight of all elements is calculated and sorted through the total ranking among all levels.

The paired comparison matrix should be carried out. The method is to calculate the average value of abovementioned 45 key causes, and then divide by each other to obtain the matrix. In the AHP of the research, Sum-Product Method was utilized to analyze the key causes. The result as below.

The eigen vector of home work conflict is 1.117, weight is 2.615%; The eigen vector of lack of career guidance is 1.117, weight is 2.615%; The eigen vector of lack of organization support is 1.384, weight is 3.074%; The eigen vector of poor organization structure is 1.449, weight is 3.219%; The eigen vector of unfair reward and treatment is 1.324, weight is 2.943%; The eigen vector of lack of autonomy is 1.117, weight is 3.639%; The eigen vector of job insecurity is 0.934, weight is 2.076%; The eigen vector of lack of human resources is 1.549, weight is 3.442%; The eigen vector of lack of promotion opportunity is 1.23, weight is 2.733%; The eigen vector of inadequate freedom of decision is 1.454, weight is 3.232%; The eigen vector of lack of feedback is 1.117, weight is 2.483%; The eigen vector of poor communication is 1.585, weight is 3.521%; The eigen vector of inadequate room for innovation is 1.159, weight is 2.575%; The eigen vector of project overload is 1.821, weight is 4.047%; The eigen vector of role ambiguity is 1.401,

weight is 3.114%; The eigen vector of tight time frame is 1.342, weight is 2.983%; The eigen vector of long time working hours is 1.378, weight is 3.061%; The eigen vector of project underload is 0.532, weight is 1.182%; The eigen vector of unpredictable working hours is 1.182, weight is 2.628%; The eigen vector of too specific job natures is 0.987, weight is 2.194%; The eigen vector of much contact with people is 1.395, weight is 3.101%; The eigen vector of unfair assignment of workload is 1.188, weight is 2.641%; The eigen vector of inadequate knowledge of project is 1.141, weight is 2.536%; The eigen vector of multitasking is 1.579, weight is 3.508%; The eigen vector of poor working relationships is 0.674, weight is 1.498%; The eigen vector of type A behavior is 0.461, weight is 1.025%; The eigen vector of problem with superior is 0.928, weight is 2.063%; The eigen vector of harassment and discrimination is 0.236, weight is 0.526%; The eigen vector of language barrier is 1.194, weight is 2.654%; The eigen vector of distrust is 0.591, weight is 1.314%; The eigen vector of adaptability with change of job is 1.786, weight is 1.747%; The eigen vector of personal traits of the locals is 0.875, weight is 1.945%; The eigen vector of work traits of the locals is 0.851, weight is 1.892%; The eigen vector of alcohol and drug use is 0.420, weight is 0.933%; The eigen vector of competitive teamwork is 0.863, weight is 1.918%; The eigen vector of proliferation of virtual team is 0.863, weight is 1.918%; The eigen vector of poor social network is 0.987, weight is 2.2.194%; The eigen vector of inadequate safety equipment is 0.674, weight is 1.498%; The eigen vector of injury and accident is 0.627, weight is 1.393%; The eigen vector of poor transportation is 0.414, weight is 0.920%; The eigen vector of Poor medical services is 0.302, weight is 0.670%; The eigen vector of Poor working environment is 0.485, weight is 1.077%; The eigen vector of sexual harassment is 0.130, weight is 0.289%; The eigen vector of gender inequality is 0.284, weight is 0.631%; The eigen vector of Limited job opportunities is 1.147, weight is 2.549%;

Table 4.7: Weight of key causes of occupational stress by AHP

	Key Causes	Eigen Vector	Weight
1	Home-Work Conflict	1.177	2.615%
2	Lack of Career Guidance	1.177	2.615%
3	Lack of organization support	1.384	3.074%
4	Poor organizational structure	1.449	3.219%
5	unfair reward and treatment	1.324	2.943%
6	Lack of autonomy	1.638	3.639%
7	Job insecurity	0.934	2.076%
8	Lack of human resources	1.549	3.442%
9	Lack of Promotion opportunity	1.23	2.733%
10	Inadequate freedom of decision	1.454	3.232%
11	Lack of feedback	1.117	2.483%
12	Poor communication	1.585	3.521%
13	Inadequate rooms for innovation	1.159	2.575%
14	Project overload	1.821	4.047%
15	Role Ambiguity	1.401	3.114%
16	Tight time frame	1.342	2.983%
17	Long time working hours	1.378	3.061%
18	Project underload	0.532	1.182%
19	Unpredictable working hours	1.182	2.628%
20	Too specified job natures	0.987	2.194%
21	Much contact with people	1.395	3.101%
22	Unfair assignment of workload	1.188	2.641%
23	Inadequate knowledge of project	1.141	2.536%
24	Multitasking	1.579	3.508%
25	Poor working relationship	0.674	1.498%
26	Type A behavior	0.461	1.025%
27	Problem with superior	0.928	2.063%
28	Harassment and discrimination	0.236	0.526%

29	Language barrier	1.194	2.654%
30	Distrust	0.591	1.314%
31	Adaptability with change of job	0.786	1.747%
32	Personal traits of the locals	0.875	1.945%
33	Work traits of the locals	0.851	1.892%
34	Alcohol and drug use	0.42	0.933%
35	Competitive teamwork	0.863	1.918%
36	Proliferation of virtual team	0.946	2.102%
37	Poor social network	0.987	2.194%
38	Inadequate safety equipment	0.674	1.498%
39	Injury and accident	0.627	1.393%
40	Poor transportation	0.414	0.920%
41	Poor medical services	0.302	0.670%
42	Poor working environment	0.485	1.077%
43	Sexual harassment	0.13	0.289%
44	Gender inequality	0.284	0.631%
45	Limited job opportunities	1.147	2.549%

Through this method, the weight of key causes in occupational stress can be obtained, and the research result needs to be tested for consistency

Table 4.8: Consistency of the analytic hierarchy process result

λ	CI	RI	CR
45.000	0.000	1.701	0.000

Generally, the smaller the CR value is, the better the consistency of the judgment matrix is. If the CR value is less than 0.1, the judgment matrix meets the consistency test. If CR value is greater than 0.1, it indicates no consistency for the data, and the judgment matrix should be properly adjusted and analyzed again. The CI value calculated for the 45th order judgment matrix is 0.000, and the standard RI table is 1.701 for the RI value. Therefore, the calculated CR value is $0.000 < 0.1$, which means that the judgment matrix in this study meets the consistency test, and the calculated weight is consistent.

Through the above statistical calculation process, the summarized 45 key causes of occupational stress exerted on the employees of China contractors in Malaysia could be sorted by weight. The project overload is the most common and severe key stress causes among them, followed by lack of autonomy, poor communication, multitasking, lack of human resources, etc. and the gender related factors were assessed to be low impact such as gender inequality, harassment, and discrimination sexual harassment.

4.6 Summary of Chapter

In this chapter, 80 respondents with useable questionnaires out of 95 people with the respond rate 84.2%. The result statistic of the research was calculated by the SPSS software. Then the result went through the reliability and validity test, and was interpreted to the visible expressions.

CHAPTER 5: FINDINGS AND DISCUSSION

5.1 Introduction

The discussion is divided according to the sequence of research objectives.

5.2 Interpretations and Implications of the Research

5.2.1 Occupational Stress Current Status

According to the research result in chapter 4, all the respondents of staff in China contractor in Malaysia are under certain level of occupational stress, even more surprising that over half of them are suffered from tremendous occupational stress over severity level 2, which further proves the necessity and urgency to solve the problem.

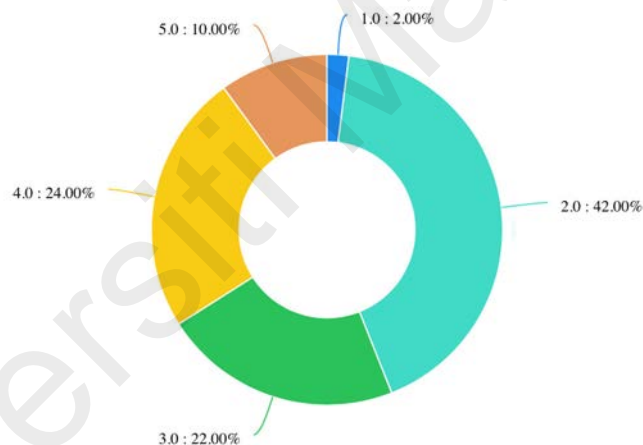


Figure 5.1, Severity of occupational stress

Regarding the type of occupation stress, the restlessness and feeling of tension occupied over 70% of all. Only a few of them suffered from depression or sleep problems.

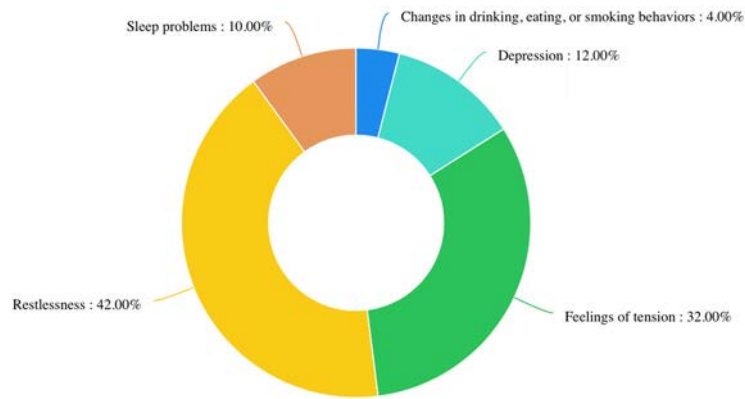


Figure 5.2, Type of occupational stress

5.2.2 Predictor of Occupational Stress

One of the accomplishments of the research is that it could be a predictor to distinguish the people who could easily impacted by occupational stress. It figured out the relationship between occupational stress and the demographic characteristics of construction project management staff, the variables including the age, ethnic origin, gender, education, annual income, marital status, and daily work hours.

Firstly, it shows in the result that the older construction project management staffs are less affected by occupational stress, and younger people especially staff under 30 years old are undergoing the highest level. It's counterintuitive but consistent with previous research (Sager, 1990), and some scholars analyzed that the reason, younger management staff experienced uppermost level of burnout regarding emotional exhaustion and disengagement from the profession (Antoniou et al., 2006). As for the senior employees, there is a culture in China contractor, staff over 30 years old are generally promoted to senior management positions to be a team leader instead of dealing specific tasks, and their pressure will be passed on to younger employees hierarchically (Pološki Vokić, 2007).

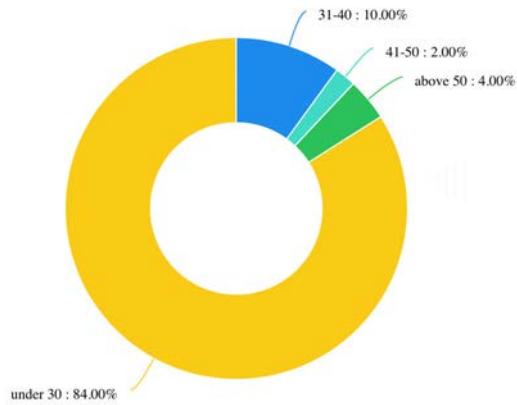


Figure 5.3, Age distribution of the respondents

When it comes to the relationship between employee ethnic origin and occupational stress, although it's a sensitive topic, we successfully proved that there are no correlations between the occupational stress and race. No matter where the respondent come from, Malaysia, China, Palestine or any other countries, they all suffered from the occupational stress. Some people claimed that certain country citizens are more durable against the occupational stress, the research result could argue against the stereotype (Haarr,1999).

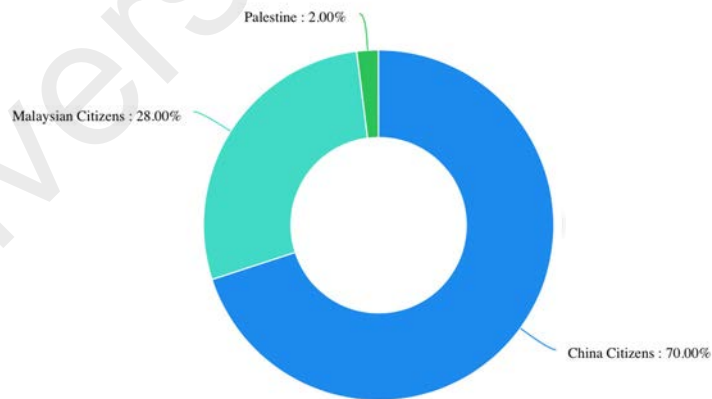


Figure 5.4, Ethnic origin distribution of the respondents

There is no distinct correlation been observed between education background with the occupational stress. The diversity of the data is not obvious, this research involves the bachelor's and master's degree in samples of more than 90%, the number of high school education accounted for 4%, not prominent the layering. Because these companies have

a bottom line in the recruitment, in the recruitment in China, for example, CSCEC group of staff qualifications must be bachelor' degree or above, Therefore, educational factors are not very significant in the analysis of occupational pressure. Although they tried to recruit some local management staffs after localization in Malaysia, the tradition of maintaining the educational advantage of the team still had a great impact on recruitment, and most of the newly recruited employees were diploma or degree. Therefore, the overall educational background of such companies is not much different.

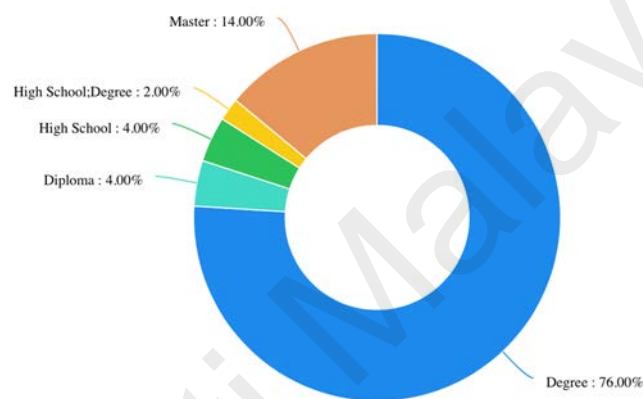


Figure 5.5, Educational background distribution of the respondents

What's interesting of the research result is showing a negative correlation between annual income and occupational stress. General intuition maybe the higher one's annual income, the more responsibilities one would take at work, then the more occupational stress one would experience in career. But this research result seems counterintuitive that the higher a staff's income, the lower he would suffer from occupational stress. Although no research in the field of architecture has reached similar conclusions, some research in other field also drawn the similar conclusion. McCormick (2012) examined with a sample of 111 teachers from a education authority in Australia. The results show that there is a significant correlation between job satisfaction and occupational stress. The factors that affect stress and satisfaction are related to income and work culture. The higher the income, the lower the occupational stress. Another research conducted in a indian oil company (Jain, 2017) also came to the same conclusion that employee's income is

positively correlated with job satisfaction, but negatively correlated with occupational stress, the higher one's annual income is, the less his occupational stress is. Now, the conclusion figured out by previous studies is proven on the management staff of China contractors in Malaysia under Covid-19 impact.

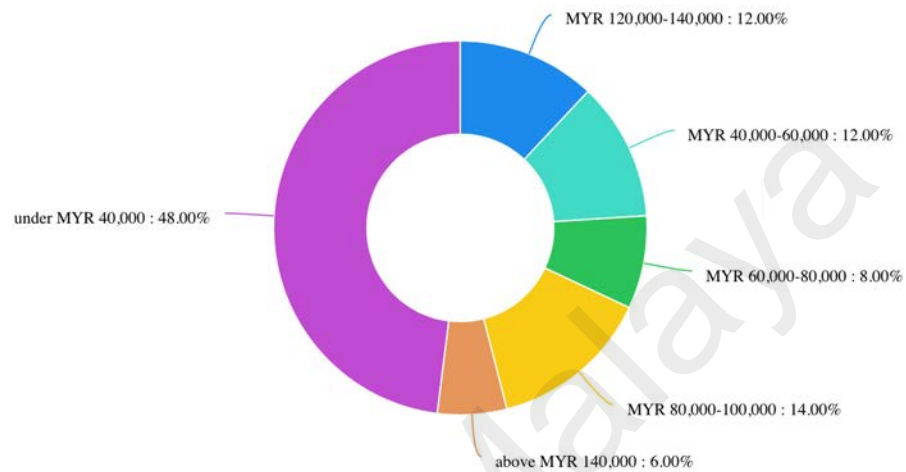


Figure 5.6, Annual income distribution of the respondents

Academic research on the impact of marital status on occupational stress varies, some scholars insist that marital status inserts only marginal effect on occupational stress of civil servants (Zhao et al., 2013). Yang (2016) doubted the result and announced the occupational stress among various personal marital status groups is statistically significant and the married employees are more tolerable to occupational stress than single ones, which is consistent with the above research result conducted with the management staff of China contractors in Malaysia.

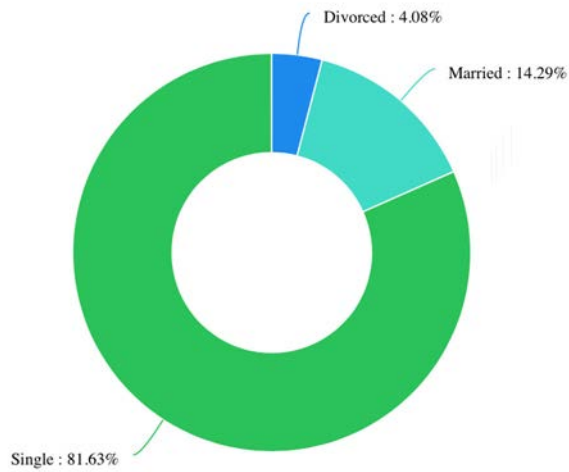


Figure 5.7, Marital status distribution of the respondents

The reason why construction sector is considered to be one of the most stressful industry is their notorious daily working hours (Leung et al., 2016). Unsurprisingly the result of this research is the same as the conclusion of many studies, that the daily working hours are positively correlated with work pressure, the longer the daily working hours, the higher the occupational stress. Like a previous research argued work long hours could trigger depression and are exposed to many occupational stresses (Tomioka, 2021).

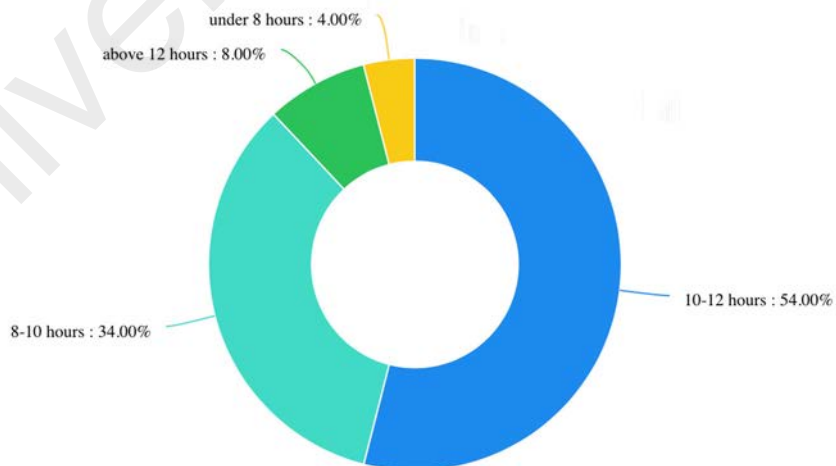


Figure 5.8, Daily working hours distribution of the respondents

5.2.3 Key Causes of Occupational Stress

The 45 most popular key causes of occupational stress, by the number of publicized in referee journal, have been summarized in the literature review. In the last chapter the weight of each key cause has been figured out by Analytic Hierarchy Process. Then the key causes of occupational stress are ranked by the impact to the employees.

As can be seen from the following bar chart, the most important key causes of occupation stress are project overload, lack of autonomy, poor communication, multitasking and lack of human resources, which are the top five among all the stressors.

The most weighted stressor is project overload, this finding differs from many previous studies. even for the last question at the end of the questionnaire that how to release your occupational stress, more than a third of respondents suggested increasing the management staff of project team. The research suggested a serious situation that the China contractors in Malaysia fail to have sufficient employees to ensure the carrying out of a construction project, so that considerable employees are suffered from the project overload and multitasking. Ng (2015) studied the occupational stress of construction professionals in Hong Kong and the results shown lack of opportunity and work- family conflicts where the most significant stressor impacted the employee. Similar research conducted in Sweden also studied the occupational stress in manufacturing, pharmaceutical and construction industries, the most significant ones are opportunities for recuperation and insufficient project routines (Zika, 2016). However, there are several reasons why projects overload and multitasking have become the most significant stressors in construction management staff of China contractors in Malaysia. First, over 70% of the participants in the research were employees working in foreign countries, whereas most of the employees in abovementioned studies in Hong Kong or Sweden worked in project locations. Second, after the outbreak of Covid-19 pandemic, the

occupational stress of employees has been tremendously impacted, such as the months lasting movement control order, the depressed market and the situation that overseas employees cannot return home for a long time.

Lack of autonomy is also an important cause of occupational stress in the research. This is consistent with many previous studies, McGrath (2013) proved that the even in medical sector nurses are eager to have autonomy to work. Grau (2011) analyzed the same situation in Spain. For China contractors in Malaysia, generally their directors are designated from China headquarters, therefore they perform the work with a controlling even domineering style, which offer the employees pretty limited space to make decision.

Poor communication could trigger serious occupational stress in UK construction industry (Ajayi, 2019). Now the conclusion is tested on the management staff of China contractors in Malaysia, even though different research objective and context. The reason why poor communication could be a stressor has been elaborated by numerous literatures, in particular to China contractor, due to the language and culture environment, the English level of Chinese employee is generally less fluent than Malaysians, Inevitably, it increases the barriers of communication.

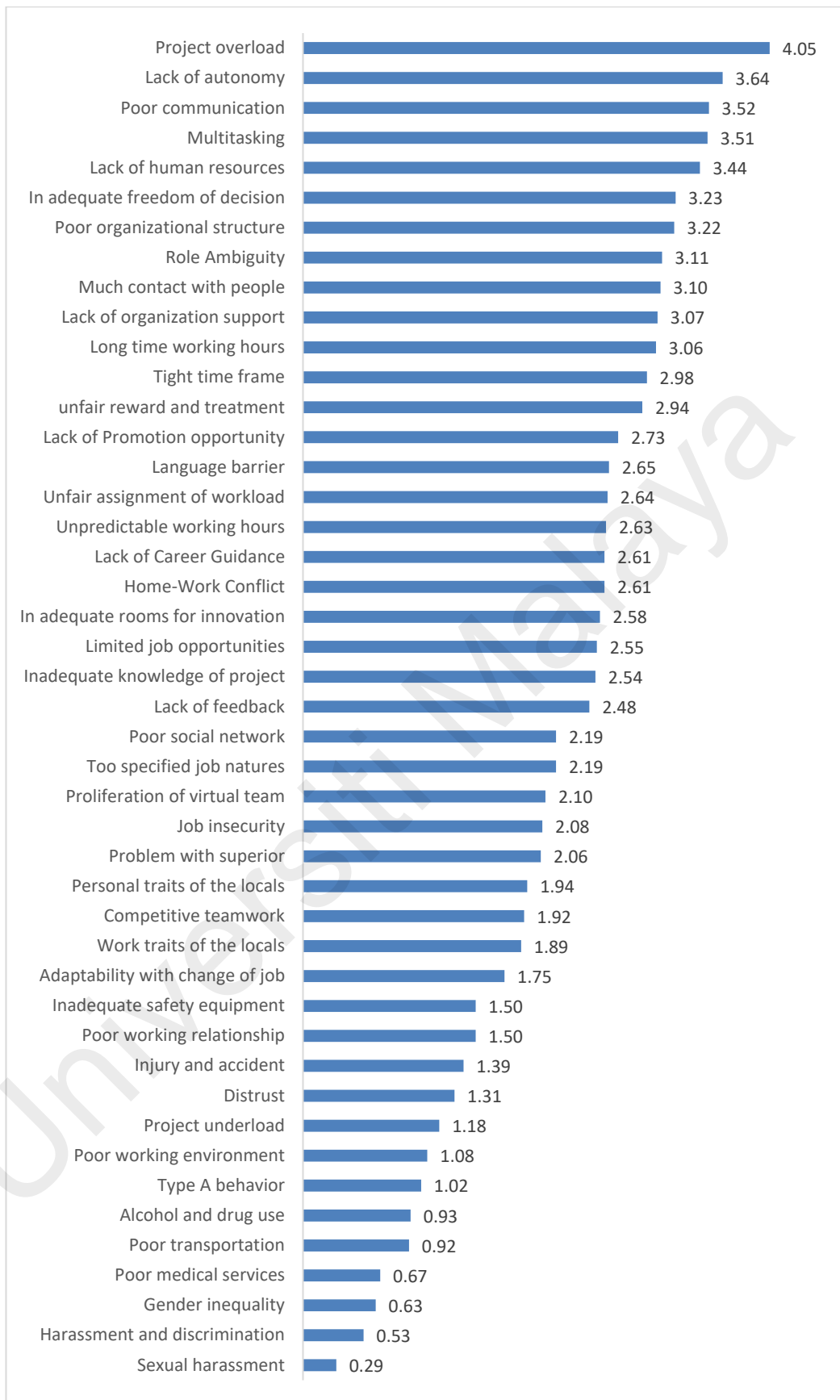


Figure 5.9, Significance of key causes of occupational stress by AHP

Regarding the sections of the stressors, all the 45 key causes of the occupational stress could be sorted to 5 sections which are organizational, task, personal, physical and gender related. The average weight based on Analytic Hierarchy Process of each section is shown below. It is obvious that organizational and task stress section contributed far more weight than the other three.

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Table 5.1, Average weight of key causes of occupational stress in section by AHP

No.	Section	Stressors	Weight	Average Weight
		Home-Work Conflict	2.615%	
		Lack of Career Guidance	2.615%	
		Lack of organization support	3.074%	
		Poor organizational structure	3.219%	
		unfair reward and treatment	2.943%	
		Lack of autonomy	3.639%	
1	Organizational	Job insecurity	2.076%	2.936%
		Lack of human resources	3.442%	
		Lack of Promotion opportunity	2.733%	
		In adequate freedom of decision	3.232%	
		Lack of feedback	2.483%	
		Poor communication	3.521%	
		In adequate rooms for innovation	2.575%	
		Project overload	4.047%	
		role Ambiguity	3.114%	
		Tight time frame	2.983%	
		Long time working hours	3.061%	
2	Task	Project underload	1.182%	2.817%
		Unpredictable working hours	2.628%	
		Too specified job natures	2.194%	
		Much contact with people	3.101%	
		Unfair assignment of workload	2.641%	
		Inadequate knowledge of project	2.536%	

		multitasking	3.508%	
		Poor working relationship	1.498%	
		Type A behavior	1.025%	
		Problem with superior	2.063%	
		Harassment and discrimination	0.526%	
		Language barrier	2.654%	
		distrust	1.314%	
3	Personal	Adaptability with change of job	1.747%	1.678%
		Personal traits of the locals	1.945%	
		Work traits of the locals	1.892%	
		Alcohol and drug use	0.933%	
		Competitive teamwork	1.918%	
		Proliferation of virtual team	2.102%	
		Poor social network	2.194%	
		Inadequate safety equipment	1.498%	
		Injury and accident	1.393%	
4	Physical	Poor transportation	0.920%	1.112%
		poor medical services	0.670%	
		Poor working environment	1.077%	
		Sexual harassment	0.289%	
5	Gender-related	Gender inequality	0.631%	1.156%
		Limited job opportunities	2.549%	

5.3 Limitations of the Research

Despite the endeavored research, this study has some limitations.

5.3.1 Research Design

Firstly, the original research design is including interview survey, including two interviewees, a Malaysian senior construction project director and a Chinese quantity surveyor. However, due to the Covid-19 impact, the request of face-to-face interview was declined, and the online interview failed to achieve the research requirement, therefore the whole research was conducted by questionnaire survey under the quantitative research methodology.

5.3.2 Self-Reported Data

In the questionnaire, the design allows employees to independently evaluate the occupational stress levels they have suffered and rank the key causes within a certain range. Whatever the reason, participants may have overestimated or underestimated occupational stress and influenced the results.

5.3.3 Hawthorne Effect

Hawthorne effect refers to a phenomenon in which participants behave differently when they are aware that they are being observed (Sedgwick, 2015). In the research, all the respondents were told the objective of the study is to figure out the occupational stress and the causes, participants may pretend to be suffering from occupational stress in an attempt to satisfy the research.

5.4 Recommendations

According to the research result that all of the construction project management staff of China contractor of Malaysia are suffering from severe occupational stress, combined the result of their personal background and key causes to the stress, recommendations are followed. Firstly, it's wrong that the intuitive that single young employees are tolerable to cope with occupational stress. but the research shows that they are more stressed than the seniors. Therefore, Enterprises should pay more attention to the occupational health of young employees. Secondly, there is no relationship between the tolerance to occupational stress and the race. The directors and human resources department should not reject candidates of certain race in hiring because of the bias. Thirdly, this study reflects that there is a significant positive correlation between daily working hours and occupational stress, accordingly it's not recommendable that companies make employees work excessive overtime. Last but not least, the China contractor are confronting a serious shortage of management staffs, which is the dominant key cause of the occupational stress of the employees. Hiring more employees and try to avoid project overload is highly recommendable.

5.5 Conceptual Framework



Solutions for Occupational Stress

- Enterprises should pay more attention to the occupational health of young employees.
- The directors and human resources department should not reject candidates of certain race in hiring because of the bias.
- It's not recommendable that companies make employees work excessive overtime.
- Hiring more employees and try to avoid project overload is highly recommendable.

5.6 Summary of Chapter

This chapter systematically discussed the data analyzed in the last chapter, and the limitations of the research and the recommendations to the management of China contractors in Malaysia are presented. and finally come up with the research conceptual framework.

CHAPTER 6: RESEARCH CONCLUSION AND RECOMMENDATION

6.1 Introduction

This chapter 6, research conclusion and recommendations, first reviews the objectives of this study; then it summarizes the results of this study, which is carried out according to the objectives of this study. After that, this study will evaluate the practical value and limitations. Finally, suggestions and recommendations for further research are put forward.

6.2 Summary of Research Finding

In the conclusion, the aim of the research has to be review firstly. This study aims to develop a conceptual framework on the occupational stress for the construction projects management staff of China contractors, so as to provide references to the company management regarding the employee stress care.

6.2.1 Research Objective 1

The objective 1 of the research is to identify the types of occupational stress faced by the construction projects management staff of China contractors in Malaysia.

According to the research discussion in chapter 5, all the respondents of staff in China contractor in Malaysia are under certain level of occupational stress, even more surprising that over half of them are suffered from tremendous occupational stress over severity level 2, which further proves the necessity and urgency to solve the problem. Regarding the type of occupation stress, the restlessness and feeling of tension occupied over 70% of all. Only a few of them suffered from depression or sleep problems.

6.2.2 Research Objective 2

The objective 2 of the research is to identify the relationship between occupational stress and the demographic of the construction projects management staff of China contractors in Malaysia.

One of the accomplishments of the research is that it could be a predictor to distinguish the people who could easily impacted by occupational stress. It figured out the relationship between occupational stress and the demographic characteristics of construction project management staff, the variables including the age, ethnic origin, gender, education, annual income, marital status, and daily work hours.

Firstly, it shows in the result that the older construction project management staffs are less affected by occupational stress, and younger people especially staff under 30 years old are undergoing the highest level. Secondly, the research successfully proved that there are no correlations between the occupational stress and race or education background. Thirdly, showing a negative correlation between annual income and occupational stress. Lastly, the daily working hours are positively correlated with work pressure, the longer the daily working hours, the higher the occupational stress. Like a previous research argued work long hours could trigger depression and are exposed to many occupational stresses.

6.2.3 Research Objective 3

The objective 2 of the research is to investigate the key causes of occupational stress faced by the construction projects management staff of China contractors in Malaysia.

According to the research result, the impact ranking of all 45 key causes is figured out. These are home-work conflict, lack of career guidance, lack of organization support, poor organizational structure, unfair reward and treatment, lack of autonomy, job insecurity,

lack of human resources, lack of promotion opportunity, inadequate freedom of decision, lack of feedback, poor communication, inadequate rooms for innovation, project overload, role ambiguity, tight time frame, long time working hours, project underload, unpredictable working hours, too specified job natures, much contact with people, unfair assignment of workload, inadequate knowledge of project, multitasking, poor working relationship, type a behavior, problem with superior, harassment and discrimination, language barrier, distrust, adaptability with change of job, personal traits of the locals, work traits of the locals, alcohol and drug use, competitive teamwork, proliferation of virtual team, poor social network, inadequate safety equipment, injury and accident, poor transportation, poor medical services, poor working environment, sexual harassment, gender inequality and limited job opportunities.

6.3 Contribution of Research

This research contributes to both knowledge areas of construction and psychology sector. Firstly, it filled the research gap of construction project management. In the past, some research has figured out the origins of occupational stress of construction project professionals, while few of them paid their attention to overseas employees who may suffer far more. In addition, in the post Covid-19 pandemic era, more factors led to the aggravation of the stress under the more complicated environment, which is worth to research (Elsalem et al., 2020).

The first contribution of the research is that the types of occupational stress faced by the construction projects management staff of China contractors in Malaysia are figured out. The management of China contractors in Malaysia could take the research result for the reference, to prevent the occurrence of employee's mental disorder. The second contribution of the research is that the vulnerable groups for occupational stress are identified, so as to the Employee care plan can be targeted to the vulnerabilities. The third

contribution of the research is that the key causes of occupational stress faced by the staff of China contractors in Malaysia are identified. As the management of these corporates, the attention should be drawn on the problems of employee's project overload, lack of autonomy, poor communication, multitasking and lack of human resources etc.

The study could provide a reference and benchmark for Chinese construction corporations with growing overseas projects to help their managerial to determine company regulations, such as annual leave period and flexible work schedules, to prevent occupational stress that could affect employee health and corporation productivity (Wu et al., 2021).

6.4 Recommendation

Because of the research limitations in the chapter 5, this paper puts forward corresponding suggestions for further research in the future.

The original research design includes interview survey, including two interviewees, a Malaysian senior construction project director and a Chinese quantity surveyor. However, due to the Covid-19 impact, the request of face-to-face interview was declined, therefore the whole research was conducted by questionnaire survey under the quantitative research methodology. But it cannot be denied the mixed research design would obtain a more complete and multi point of view perspectives for the research aim. Therefore, the mixed research design is recommended for further research. Furthermore, there are only 95 respondents of the questionnaire survey, the further study could expand the sample size to ensure the data validly.

6.5 Overall Conclusion

Since the reform and opening-up in 1978, the construction industry of China has been the mainstay of the national economy (Han & Ofori, 2017). Now, for the construction

enterprise in China, developing overseas business is an indispensable trend. Since the 1980s, China started to take the construction projects in foreign countries, the international competitiveness of contractors has been gradually enhanced, and both business scope and contract value have increased significantly. However, Construction project management is one of the most stressful occupations.

As China contractors thrived in Malaysia over a decade, their construction project management staff may suffer from occupational stress. This study aims to identify the types of stress, and the key causes of the occupational stress on construction projects management staff of China contractors through the questionnaire survey for 95 project management staffs. The research results show almost all staff suffered from occupational stress and half of them under considerable stress. The dominant types of occupational stress are feeling of tension and restlessness. Regarding the key causes of occupational stress, among 45 most popular key causes of occupational stress, the most significant key causes are project overload, lack of autonomy, poor communication, multitasking and lack of human. In the end of the research, some recommendations to release the occupational stress of the employees were raised.

The research results shows that all the respondents of staff in China contractor in Malaysia are under certain level of occupational stress, even more surprising that over half of them are suffered from tremendous occupational stress and the restlessness and feeling of tension occupied over 70% of all. Only a few of them suffered from depression or sleep problems. And the most important key causes of occupation stress are project overload, lack of autonomy, poor communication, multitasking and lack of human resources, which are the top five among all the key causes.

For the possible solutions to the occupational stress of China contractors in Malaysia. Firstly, enterprises should pay more attention to the occupational health of young

employees; then the directors and human resources department should not reject candidates of certain race in hiring because of the bias; furthermore, it's not recommendable that companies make employees work excessive overtime. Finally, hiring more employees and try to avoid project overload is highly recommendable.

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